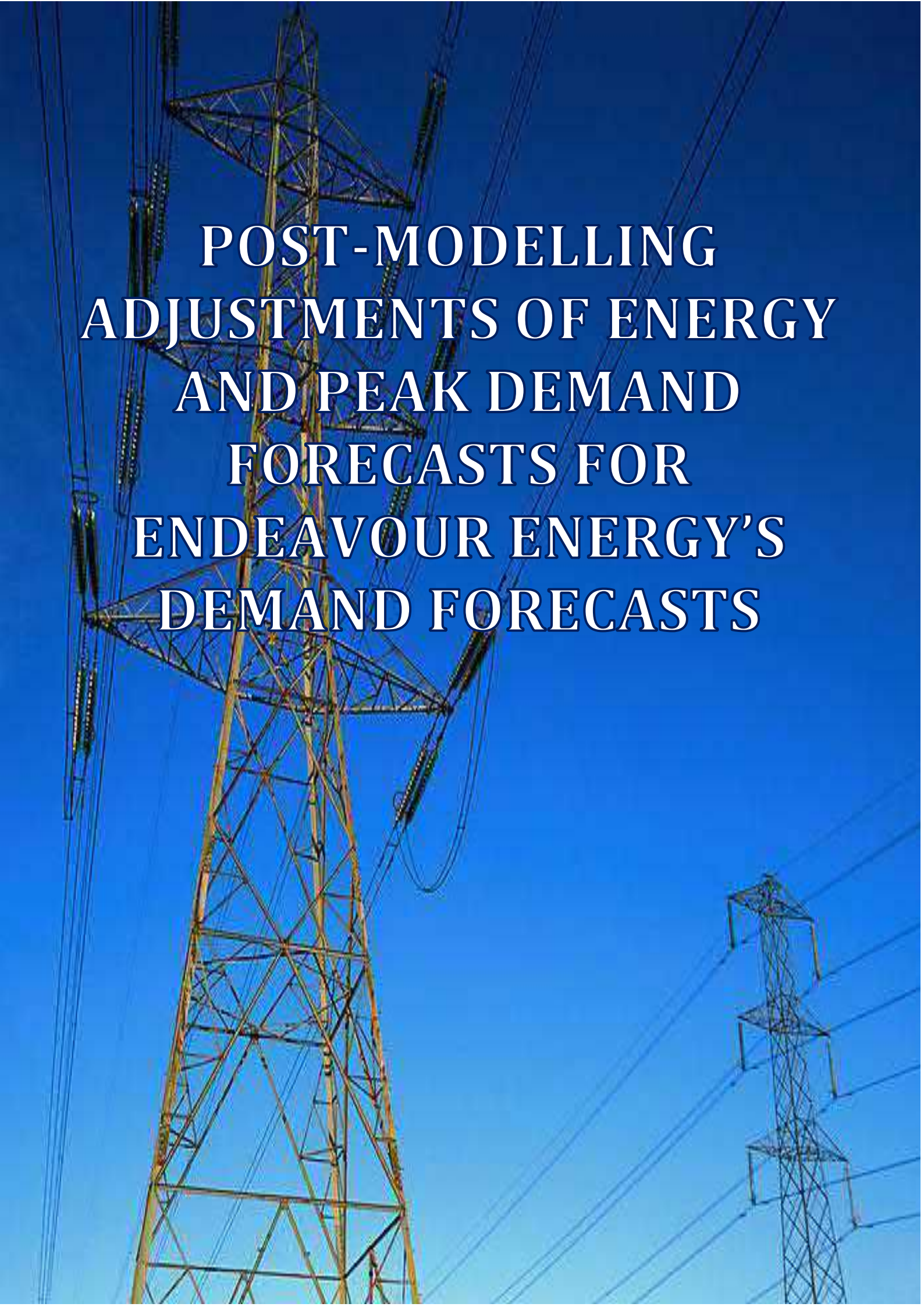

POST-MODELLING ADJUSTMENTS OF ENERGY AND PEAK DEMAND FORECASTS FOR ENDEAVOUR ENERGY'S DEMAND FORECASTS

A report for
ENDEAVOUR ENERGY

June 2021

While the National Institute endeavours to provide reliable forecasts and believes the material is accurate it will not be liable for any claim by any party acting on such information.

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TON904-Endeavour – Post-modelling adjustments/Endeavour Energy/2021

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1. Introduction and background

Endeavour Energy commissioned the National Institute of Economic and Industry Research (NIEIR) to prepare a report on post-modelling adjustments for Endeavour Energy electrical energy and maximum demands.

This work follows previous post-modelling adjustment reports by NIEIR in 2013, 2016 and 2018. The background and scope of works for this work is reproduced below.

1.1 Background

Endeavour Energy is a distribution business responsible for the safe and reliable supply of electricity to 1.1 million customers in households and businesses across Sydney's Greater West, the Blue Mountains, Southern Highlands, the Illawarra and the South Coast.

Endeavour Energy is 50.4 per cent owned by an Australian-led consortium of long-term investors in the private sector operating the network under a 99-year lease. The private sector consortium comprises of Australia's Macquarie Infrastructure and Real Assets, AMP Capital on behalf of REST Industry Super, Canada's British Columbia Investment Management Corporation and Qatar Investment Authority.

Endeavour Energy is required to prepare long-term demand forecast for network planning purposes and submits the forecast to TransGrid, AEMO and the AER for their use and review. Endeavour Energy's demand forecasting techniques adopt the industry standard methodology in terms of processes and inputs. This involves analysing historical trends in electricity demand and correlating these trends against the drivers of electricity demand. It also involves making post-model adjustments to the forecast to take into account the changes in electrical demand resulting from several energy reduction policies, programs, technologies and other drivers. While this approach produces statistically sound forecasting models, Endeavour is mindful that to improve the accuracy of demand forecasts an up-to-date understanding of the changing trends and future new drivers of consumption and technologies is required.

This project is seeking to produce a new Post Model Adjustment report with additional focus on demand profiles for adjustments as well as combining several adjustment factors. The PMA summer and winter peak demand adjustments are to be provided absolute annual adjustment figures while the energy adjustment figures are to be provided as above the trend adjustments. The consultant(s) also need to update the annual energy adjustments for the forecast period.

1.2 Detailed requirements

The consultant is required to provide an assessment of the annual post-model adjustments for Endeavour Energy by policy/driver type, customer type, technology and season for both peak summer and winter demand and annual energy consumption. The required policy/driver/ technology categories are shown as an example in Attachment 1 for peak demand and Attachment 2 for energy. The energy adjustment table includes hot water (refer Attachment 2) but this is not required for peak demand adjustments.

1.2.1 Summer and winter peak demand

The data for annual peak demand adjustments is to be provided as absolute annual adjustment figures and not marginal 'above trend' adjustments which would not have been factored into the Endeavour's baseline demand.

A summary of the reporting categories are shown below:

- NSW Energy Savings Scheme (ESS);
- Building Energy Efficiency Standards (BASIX);
- Minimum Performance Standards (MEPS);
- Solar Only installations impacts;
- Solar + Battery storage installations impacts;
- Battery storage only installations impacts; and
- Electric vehicles.

In addition to the annual summer and winter adjustment figures Endeavour Energy requires the following detailed information by time of day during peak demand days, which differ for the category groups.

Categories 1 to 3

- Profile of Residential, Commercial and Industrial customers in MW by season (summer and winter).
- By the following areas:
  - Western Sydney;
  - Illawarra and Shoalhaven as one group; and
  - Blue Mountains and Southern Highlands as one group.
- By forecast year (11 years – 2021-22 to 2031-32).

Categories 4 to 7

- Customer number growth (or decline) and PV/battery installed capacity for Residential, Commercial and Industrial customers;
- Profiles of Residential, Commercial and Industrial customers by each zone substation (ZS) in MW by season (summer and winter); and
- By forecast year (11 years – 2021-22 to 2031-32).

If this level of information cannot be provided Endeavour Energy would receive alternative levels of information.

1.2.2 Annual energy

The data for annual energy adjustments is to be provided as 'above trend' adjustments. Alternatively, the absolute annual adjustment figures may be provided with the trend-line for each policy/driver area.

A summary of the reporting categories are shown below:

1. NSW Energy Savings Scheme (ESS);
2. Building Energy Efficiency Standards (BASIX);
3. Minimum Performance Standards (MEPS);
4. Solar Only installations impacts;
5. Solar + Battery storage installations impacts;
6. Battery storage only installations impacts; and
7. Electric vehicles.

In addition to the annual adjustment figures Endeavour Energy requires the following detailed information by Residential, Commercial and Industrial groups.

1.2.3 Information provided

The information that Endeavour Energy will provide to assist in the provision of information is:

- total residential and business customers for each Zone Substations (ZS);
- total residential and business customer PV connections for each ZS;
- 15-minute demand data for each ZS and EE total available upon request; and
- zone substations grouped by area.

1.2.4 Further requirements

Also required as a deliverable is the background information making up the figures, a listing the source information where the data has been obtained and any assumptions made to arrive at the demand adjustments is to be included. This information should be provided in the report under the discussion for each policy/driver.

The consultant(s) will need to focus on and address potential overlaps and double counting of demand reductions resulting from each policy/driver area. For example, the EES, building energy efficiency and MEPS schemes could potentially include demand reduction statistics in their individual report that are also attributable to other areas. The consultant(s) will identify these areas and attempt to remove these effects for each policy/driver and report on their findings. Any assumptions made in the quantification of overlaps will be reported separately.

The data for energy reduction is to be provided as a per annum adjustment to the year 2031-32 (as shown is Attachment 2) and by summer and winter for annual peak demand adjustments also to 2031-32 (as shown in Attachment 1). The summer and winter peak demand data are to be in separate tables.

Endeavour will be seeking to work with the consultant(s) during the investigation to ensure a greater level of understanding of the data. This may be achieved by regular meetings or updates. The data is to be provided in spreadsheets as well as in a report.

It may be difficult to obtain the demand reduction data split into the three customer types listed in Attachment 1 or it may not be relevant for all policy/driver area. The consultant(s) may ignore the customer type in this situation, combine industrial and commercial into business or insert N/A. Other policy/driver categories may be suggested for inclusion in the analysis that the consultant(s) consider have a significant impact on demand and energy consumption in the foreseeable future.

Refer to Attachment 1 for further information on the detailed requirements above.

1.3 Deliverables

A report is to be produced containing the following.

- A table detailing the summer and a table detailing winter demand reductions (in MW) for each policy/driver in absolute terms, as shown in Attachment 1.
- A table detailing the annual energy reduction for each policy/driver in above trend terms, as shown in Attachment 2.
- Peak day load profiles (summer and winter) as detailed above (by area for Categories 1 to 3) for the 11 year forecast period (2021-22 to 2031-32).
- Peak day load profiles of Residential, Commercial and Industrial customers by each zone substation (ZS) in MW by season (summer and winter), as detailed above for Categories 4 to 7.
- A table of customer numbers for residential, commercial and industrial for Categories 4 to 7, shown above, for the 11 year forecast period (2021-22 to 2031-32).
- Models/methods used to estimate the past and future impacts on electricity demand and energy from each policy/driver and the assumptions used in the analysis.
- Results of the above models/methods for estimating the impacts on electricity demand and energy.
- A commentary on the economic, regulatory, environmental, social and technological impacts on future electricity demand and energy and the assumptions used for the analysis.
- A commentary on the material and documents reviewed and assumptions made for each policy/driver.
- Review of the validity of past figures provided and areas of potential double counting.
- Tables of results to also be provided in spreadsheets.

Also required are regular updates during the report development in for form of meetings or emails.

The report is to be completed in 6 to 8 weeks.

ATTACHMENT 1

Recommended post-modelling peak demand adjustments for Endeavour Energy

Policy/Driver area		Recommended post-modelling adjustments to demand forecasts Summer/Winter (MW)				
2022 means Summer 2021-22 ----→		**2022**	**2023**	**2024**	**Each year .....→**	**2032**
NSW Energy Savings Scheme (ESS)	Commercial[1]	xxx	xxx	xxx	xxx xxx	xxx
	Industrial[1]	xxx	xxx	xxx	xxx xxx	xxx
	Residential[1]	xxx	xxx	xxx	xxx xxx	xxx
Building energy efficiency standards	Same details as in the above ESS template row are required for each policy/driver area.					
Minimum Energy Performance Standards (MEPS)						
Solar only impact						
Solar + Battery impact						
Battery only impact						
Electric vehicle (EV) penetration						
Price Elasticity						
Other area[2]						

Note 1: Endeavour Energy will provide the consultant with historical demand data to provide a guide in allocating the recommended post-modelling impacts across customer segment categories.

Note 2: Include other energy reducing programs or technologies you consider significant.

Profile data

Consultant to provide the peak day profile (summer and winter) for the categories 1 to 7 (by area for Categories 1 to 3), as detailed above, by forecast year (11 years – 2021-22 to 2031-32).

Customer numbers

Consultant to provide customer number growth (or decline) for residential, commercial and industrial customers, by forecast year (11 years – 2021-22 to 2031-32).

ATTACHMENT 2

Recommended post-modelling energy adjustments for Endeavour Energy

Policy/Driver area		Recommended post-modelling adjustments to demand forecasts Annual (MW)				
2022 means Summer 2021-22 ----→		**2022**	**2023**	**2024**	**Each year .....→**	**2032**
NSW Energy Savings Scheme (ESS)	Commercial[1]	xxx	xxx	xxx	xxx xxx	xxx
	Industrial[1]	xxx	xxx	xxx	xxx xxx	xxx
	Residential[1]	xxx	xxx	xxx	xxx xxx	xxx
Building energy efficiency standards	Same details as in the above ESS template row are required for each policy/driver area.					
Minimum Energy Performance Standards (MEPS)						
Solar only impact						
Solar + Battery impact						
Battery only impact						
Electric vehicle (EV) penetration						
Price Elasticity						
Other area[1]						

Note 1: Include other energy reducing programs or technologies you consider significant.

2. Methodological approach to post-modelling adjustments for Endeavour Energy

2.1 Post-modelling adjustments

Electricity demands are influenced by a very diverse range of factors including (among others):

- economic factors: economic activity, income;
- demographic factors: population, household formation growth;
- energy market factors: price of electricity and other fuel sources;
- technological and lifestyle factors: dwelling and appliance energy efficiency and use;
- weather factors: temperature; and
- government policies factors: energy and environmental initiatives and programs.

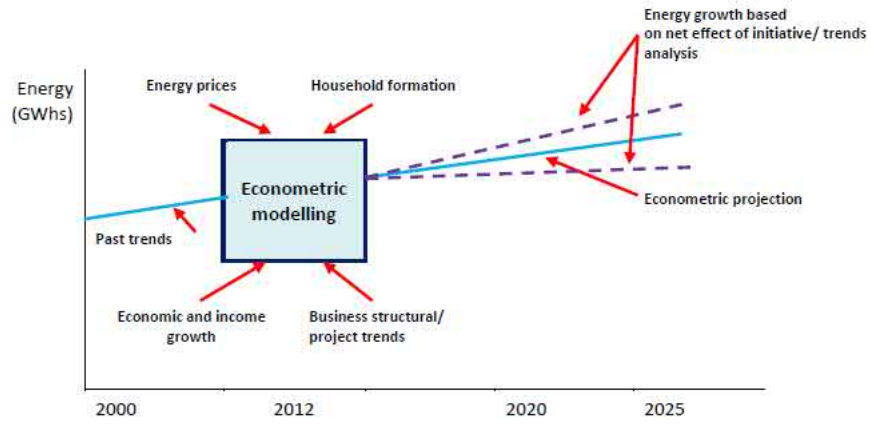
In most part, the models used by NIEIR capture the main drivers of underlying electricity demand. Ongoing government policies and recent new technologies may already fully captured within historical trends. In this case, no adjustment will be required to the underlying models. However, some government initiatives and technological developments may not be fully reflected in the models. This is because for a variety of reasons these factors don't easily fit in an econometric equation.[1] Accordingly, results from the econometric modelling may need to be adjusted to ensure that the impacts of these factors are adequately reflected.[2]

There are some factors that are new or likely to change going forward that need to be accounted in forecasts; it is these factors that are the primary focus of post-modelling adjustments. The figure below illustrates the conceptual basis for the post-modelling adjustments.

Electricity demand is unusually different to the demand for many other goods and services. Electricity by itself does not provide any utility to consumers. Electricity is only useful in conjunction with the operation of a purchased electrical appliance or equipment. Hence, electricity demand cannot be viewed in isolation from the electrical equipment in use and the circumstances the equipment is used for (for instance, cooling or heating).

Changes in the stock and the technology of the electrical equipment can have a significant effect on the level of electricity demand over time. Government policies often aim to impact level of electricity demand by influencing the choice of technologies available to electricity consumers. Figure 2.1 illustrates the interaction between selected policy measures and technologies. This complex interaction between technology and policy measure makes distinguishing the impact of the policy measures from on-going developments difficult.

Figure 2.1: The conceptual basis for post-modelling adjustments



Consumer demand for a specific appliance technology will evolve over time in response to a range of factors including the price, household income, the design and functionality of the technology (and its close substitutes) as well as government initiatives impacting its uptake or use. Disentangling and separating the impacts of each of these factors is difficult given the limited consumer-level information appliance purchase and use.

[1] For instance, there may be limited statistical information or historical profiles do not provide a representative guide to future movements.

[2] These types of modelling issues are common to most modelling exercises and certainly common to most electricity demand modelling and forecasting; these are not issues particular to the models and forecasts in this study. All econometric models are a simplified representation of a far more complex relationship between a variable of interest and its underlying factors.

NIEIR has conducted detailed analyses of potential overlap areas, carefully considered and addressed **potential overlaps and double counting** of demand and energy impacts resulting from policy drivers. Areas where this is a particular concern are the NSW Energy Efficiency Scheme (EES), the Federal Emissions Reduction Fund (ERF), building energy efficiency (BASIX) and MEPS/GEMS. These policies/programs potentially include demand reduction and energy reduction estimates in their individual reports, often without impact attributions. Where applicable, NIEIR has removed these areas of double counting.

Also reported on are the effects of additionality (beyond business-as-usual) impacts of measures, rebound (energy user response to measures and compliance with measures (particularly important for new residences under BASIX): non-compliance will reduce the demand and energy reduction impacts of measures.

Data for annual peak demand adjustments, was as required by Endeavour, provided in **absolute** annual adjustment figures and **NOT** marginal 'above trend' adjustments which would not have been factored into Endeavour's baseline demand. For example, the demand impacts (in cohort MWs) for plug-in electric vehicles (PEVs) are for the entire stock of vehicles charging coincident to Endeavour peak demand.

The data for annual energy adjustments are provided as 'above trend' adjustments. In the case of PEVs, the annual energy adjustment is close to both absolute and above trend as PEV penetration is currently so low.

Over very many years, NIEIR has built up considerable expertise analysing government policy measures and how they impact electricity demand. NIEIR continually monitors and assesses existing and new policy initiatives. Each policy initiative is reviewed on case-by-case basis with a focus on their interaction with consumer technologies.

A review of a policy initiative typically encompasses a forensic-type analysis of the available data on the policy including the expected energy savings announced with policy and any studies to supporting the announced savings. It also encompasses an examination of the available literature in Australia and overseas on comparable policy initiatives. Also where possible, the policy initiatives may be analysed with a cost-benefit model of consumer's response to the specific initiative.

A special focus is also given to compliance issues around the policy initiative. Many programs are sometimes lightly monitored for their effectiveness to deliver the announced energy savings. New building standards are a good example of this. In light of this, a comprehensive review of the performance of past programs is undertaken. The findings into this review are taken into consideration when developing estimates of the impact of the policy initiative on electricity demand.

NIEIR has reviewed the need for the following post-modelling adjustments for energy, summer and winter peak demands for the Endeavour Region. A post-modelling adjustment is only estimated for each program and/or technology if it is required upon program review.

- New South Wales Energy Savings Scheme (ESS);
- Building Energy Efficiency Standards;
- Minimum Energy Performance Standards and Greenhouse Energy Minimum Standards;
- photovoltaics systems and battery storage;
- plug-in electric vehicles; and
- tariff reform/price elasticity.

NIEIR has also reviewed other government programs, technological developments and changes in the electricity industry that have the potential to influence future electricity demand. Post-modelling adjustments are allocated across residential, commercial and industrial customer segments by reviewing each program and using customer and energy data supplied by Endeavour Energy as a guide.

2.2 Regional mapping

An important component of the methodological approach was mapping the post-modelling impacts across the following areas:

(i) three larger regions within the Endeavour Energy distribution region; and

(ii) zone substations.

The three larger regions of Endeavour Energy were defined as:

(i) Northern (Western Sydney);

(ii) Southern (Illawarra and Shoalhaven); and

(iii) Central (Blue Mountains and Southern Highlands).

Figure 2.2 shows a map of these three regions in the Endeavour Energy distribution area.

NIEIR mapped Endeavour Energy's 164 zone substations to these three regions. Table 2.1 shows the percentage share of customers by broad region.

Table 2.1 Endeavour Energy percentage share of domestic and commercial customers by region

Region		Domestic (%)	Commercial (%)
Western Sydney	Northern	47.6	44.9
Blue Mountains and Southern Highlands	Central	32.0	34.0
Illawarra and Shoalhaven	Southern	20.4	21.2
Total		**100.0**	**100.0**

NIEIR also prepared a mapping of ABS Local Government Areas (LGAs) to Endeavour Energy zone substations. A summary of the mapping by LGA is shown below in Table 2.2.

Figures 2.3 and 2.4 show maps of LGAs which fall partly or entirely within the Endeavour Energy distribution area.

Figure 2.2: Endeavour Energy regions

Table 2.2 Summary of Local Government Area (2017) to Endeavour zone substation mapping			
LGA code 2017	**LGA17 name 2017**	**Sum of LGA to ZSS weight (%)**	**Zone substations in area (no.)**
10750	Blacktown (C)	100.0	59
10900	Blue Mountains (C)	100.0	18
11450	Camden (A)	100.0	25
11500	Campbelltown (C) (NSW)	100.0	17
11570	Canterbury-Bankstown (A)	6.4	4
11650	Central Coast (C) (NSW)	0.1	1
12380	Cumberland (A)	67.5	30
12850	Fairfield (C)	100.0	35
13310	Goulburn Mulwaree (A)	12.6	4
13800	Hawkesbury (C)	99.5	20
14000	Hornsby (A)	19.3	15
14400	Kiama (A)	100.0	8
14870	Lithgow (C)	98.4	13
14900	Liverpool (C)	99.1	39
15270	Mid-Western Regional (A)	42.5	3
16100	Oberon (A)	6.6	5
16260	Parramatta (C)	73.0	32
16350	Penrith (C)	100.0	37
16700	Ryde (C)	24.2	2
16900	Shellharbour (C)	100.0	13
16950	Shoalhaven (C)	99.7	20
17150	Sutherland Shire (A)	0.1	1
17420	The Hills Shire (A)	80.4	38
18350	Wingecarribee (A)	100.0	19
18400	Wollondilly (A)	100.0	36
18450	Wollongong (C)	100.0	30

Note: Zone substation service areas can cross multiple Local Government Areas boundaries.
Revised May 2021.

Figure 2.3: Local Government Areas in the Endeavour Energy region

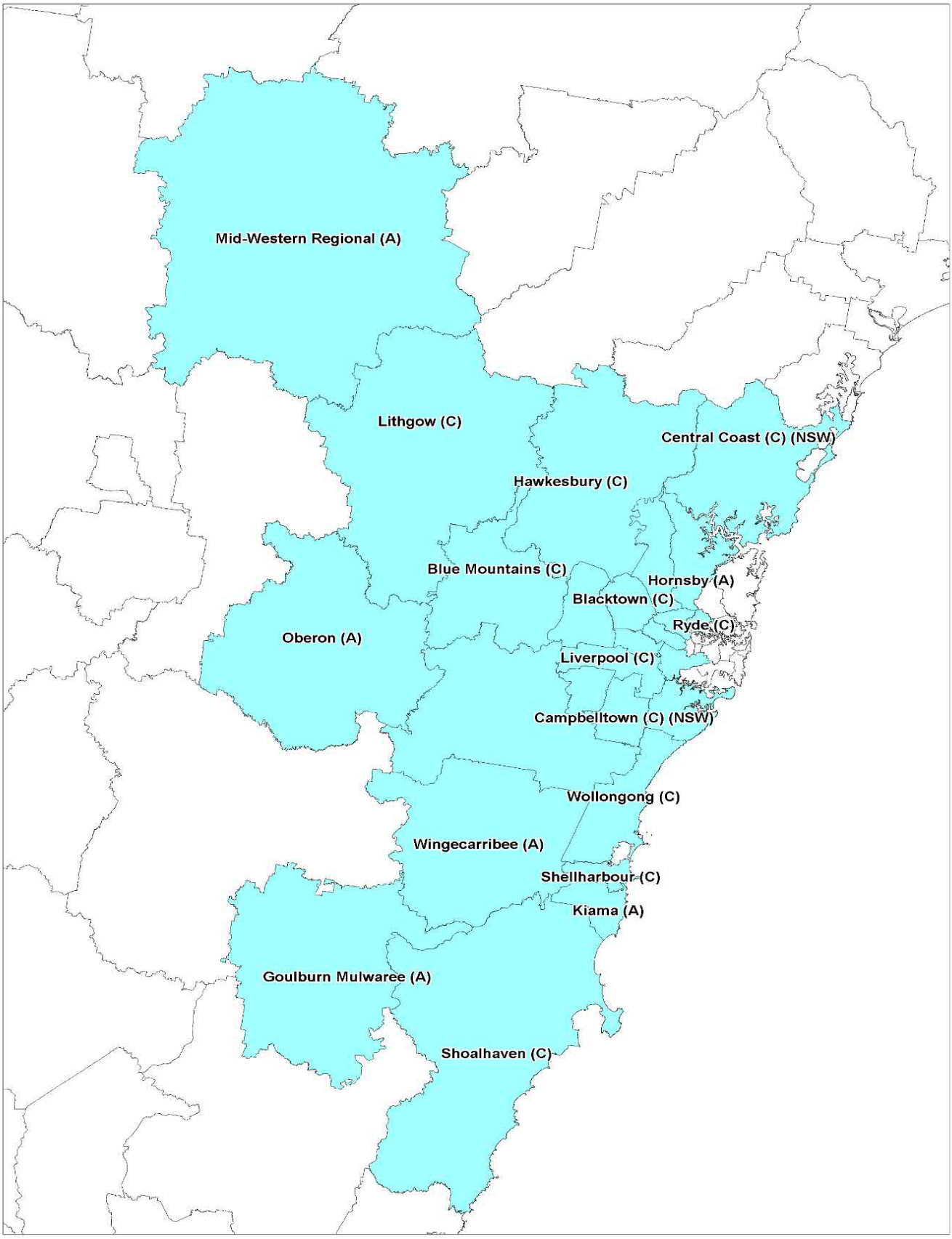


Figure 2.4: Local Government Areas in the Endeavour Energy region – More detailed map of Sydney

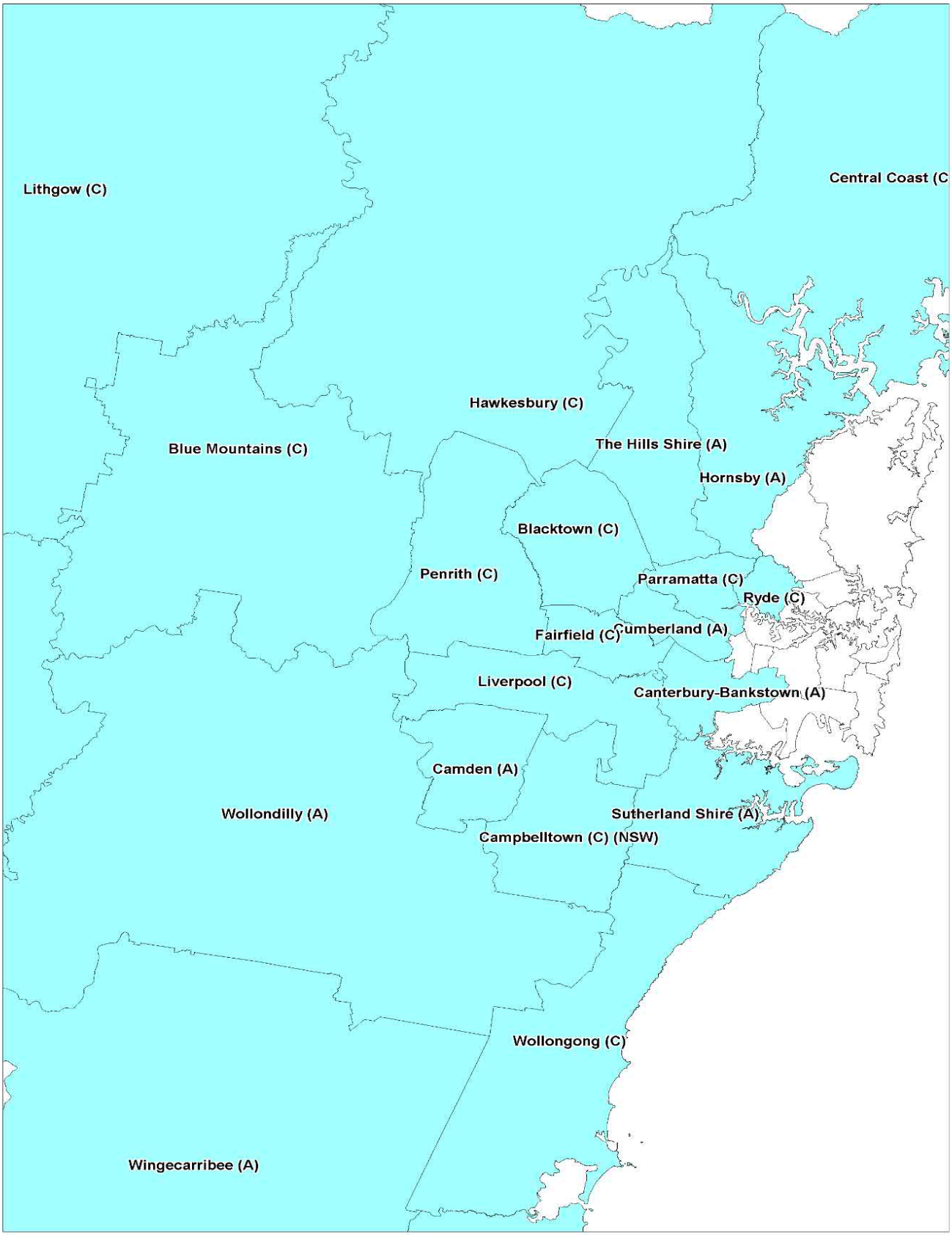


Table 2.3 Summary table: Recommended post-modelling adjustments to energy forecasts – Annual (GWh)												
		Financial years										
Policy driver area		**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
NSW Energy Security Target (including ESS)	Commercial	191.2	218.6	240.7	258.6	274.8	287.8	300.1	312.0	324.0	326.1	329.7
	Industrial	24.0	27.7	30.9	33.5	36.0	38.2	40.3	42.5	44.7	45.6	46.4
	Residential	50.2	52.5	56.2	60.2	62.9	65.2	67.5	70.8	78.6	84.6	87.9
Building Energy Efficiency Standards	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Energy Performance	Commercial	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
Standards (MEPS)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	6.0	11.1	16.3	21.7	27.1	32.5	38.0	43.4	48.9	54.5	60.0
Solar only impact	Commercial	28.2	23.2	20.4	18.7	15.8	14.7	13.5	12.6	12.1	12.4	12.0
(total annual impact)	Industrial	6.1	5.1	4.6	4.2	3.6	3.4	3.2	3.0	2.9	2.9	2.8
	Residential	165.6	140.1	129.4	125.2	112.1	110.7	107.5	106.0	107.9	113.9	113.0
Solar + Battery impact	Commercial	1.4	1.7	2.5	3.9	4.8	6.2	7.4	8.9	10.8	12.7	14.1
(total level impact)	Industrial	0.3	0.4	0.6	0.9	1.1	1.4	1.8	2.1	2.5	3.0	3.3
	Residential	6.9	8.7	10.7	14.8	18.4	23.6	28.5	34.2	41.3	51.2	58.9
Battery only impact	Commercial	2.5	4.2	6.4	9.1	13.0	16.0	16.8	17.3	17.7	18.1	18.6
(level impact)	Industrial	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Residential	12.8	20.5	29.3	38.9	49.6	61.3	64.7	66.7	68.3	69.9	71.7
Electric vehicle (EV) penetration	Commercial	-2.4	-3.7	-6.1	-10.4	-16.5	-24.1	-33.8	-45.0	-58.3	-71.7	-84.4
	Industrial	-0.3	-0.4	-0.7	-1.3	-2.1	-3.1	-4.6	-6.3	-8.4	-10.6	-12.6
	Residential	-3.6	-5.4	-8.6	-14.1	-22.1	-31.5	-43.1	-56.1	-70.5	-86.2	-104.2
Electric hot water	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Price elasticity	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(see Note 1)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Commercial	**221.1**	**244.1**	**264.0**	**280.0**	**292.0**	**300.8**	**304.2**	**306.0**	**306.5**	**297.9**	**290.3**
	Industrial	**30.2**	**32.8**	**35.3**	**37.4**	**38.7**	**40.0**	**40.7**	**41.4**	**41.8**	**41.0**	**40.1**
	Residential	**237.9**	**227.6**	**233.4**	**246.8**	**248.0**	**261.8**	**263.1**	**265.1**	**274.5**	**287.9**	**287.4**
	Total	**489.2**	**504.5**	**532.6**	**564.2**	**578.8**	**602.5**	**608.0**	**612.4**	**622.8**	**626.8**	**617.8**

Note 1 From the analysis of new tariiffs the energy impact is too small to include, and also due to the large uncertainties over energy pricing.

Table 2.4 Summary table: Recommended post-modelling adjustments to energy forecasts – Summer (MW)												
		Financial years										
Policy driver area		**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
NSW Energy Security Target (including ESS)	Commercial	7.5	8.6	9.5	10.2	10.8	11.3	11.8	12.3	12.8	12.9	13.0
	Industrial	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.3	1.3	1.3
	Residential	1.8	1.9	2.0	2.2	2.3	2.3	2.4	2.5	2.8	3.0	3.2
Building Energy Efficiency Standards	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Energy Performance	Commercial	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Standards (MEPS)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	1.5	2.3	3.2	4.1	5.1	6.1	7.1	8.1	9.1	10.2	11.3
Solar only impact	Commercial	8.3	7.4	6.6	6.3	5.8	5.6	5.6	5.6	5.8	6.3	6.6
(total annual impact)	Industrial	1.7	1.5	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.5	1.6
	Residential	51.8	46.1	41.1	39.6	38.0	36.9	37.4	37.9	39.4	42.5	45.3
Solar + Battery impact	Commercial	1.3	1.9	2.6	3.5	4.8	6.4	8.4	10.7	13.6	17.1	21.2
(total level impact)	Industrial	0.1	0.2	0.3	0.4	0.6	0.9	1.2	1.7	2.2	2.8	3.6
	Residential	11.3	15.0	19.8	26.2	34.8	45.5	58.9	74.9	94.2	117.6	145.2
Battery only impact	Commercial	0.8	1.3	1.7	2.3	2.8	3.4	3.5	3.6	3.7	3.8	4.0
(level impact)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	4.1	6.4	9.0	11.7	14.7	17.9	18.7	19.4	20.2	21.0	21.9
Electric vehicle (EV) penetration	Commercial	-1.1	-1.8	-3.1	-4.9	-7.1	-9.7	-12.8	-16.2	-20.0	-23.6	-27.4
	Industrial	-0.2	-0.4	-0.6	-1.0	-1.5	-2.2	-2.9	-3.8	-4.8	-5.7	-6.6
	Residential	-0.6	-1.0	-1.6	-2.6	-3.7	-5.0	-6.5	-8.1	-9.9	-12.0	-14.2
Electric hot water	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Price elasticity	Commercial	11.7	13.5	15.3	17.0	18.6	20.3	22.0	23.7	25.3	26.9	28.6
	Industrial	3.9	4.5	5.1	5.7	6.2	6.8	7.3	7.9	8.4	9.0	9.5
	Residential	23.3	27.1	30.6	34.0	37.3	40.6	44.0	47.3	50.6	53.9	57.2
	Commercial	**28.6**	**30.9**	**32.6**	**34.4**	**35.9**	**37.4**	**38.6**	**39.9**	**41.4**	**43.6**	**46.2**
	Industrial	**6.2**	**6.6**	**7.1**	**7.4**	**7.7**	**7.9**	**8.1**	**8.3**	**8.5**	**8.9**	**9.4**
	Residential	**93.1**	**97.8**	**104.0**	**115.2**	**128.5**	**144.3**	**161.9**	**182.0**	**206.4**	**236.3**	**269.9**
	Total	**127.9**	**135.4**	**143.7**	**157.0**	**172.0**	**189.6**	**208.6**	**230.2**	**256.3**	**288.8**	**325.5**

T able 2.5 Summary table: Recommended post-modelling adjustments to energy forecasts – Winter(MW)												
		Financial years										
Policy driver area		**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
NSW Energy Security Target (including ESS)	Commercial	9.4	10.8	11.9	12.7	13.5	14.2	14.8	15.4	16.0	16.1	16.3
	Industrial	0.9	1.0	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.7	1.7
	Residential	5.4	5.6	6.0	6.5	6.8	7.0	7.3	7.6	8.4	9.1	9.5
Building Energy Efficiency Standards	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Energy Performance	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Standards (MEPS)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.5	0.9	1.4	1.8	2.3	2.7	3.2	3.7	4.1	4.6	5.0
Solar only impact	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(total annual impact)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Solar + Battery impact	Commercial	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3
(total level impact)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0
Battery only impact	Commercial	0.3	0.4	0.6	0.8	0.9	1.1	1.2	1.2	1.2	1.3	1.3
(level impact)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	1.4	2.1	3.0	3.9	4.9	6.0	6.2	6.5	6.7	7.0	7.3
Electric vehicle (EV) penetration	Commercial	-1.5	-2.5	-4.0	-6.0	-8.4	-11.2	-14.5	-18.1	-21.8	-25.5	-29.4
	Industrial	-0.3	-0.5	-0.8	-1.3	-1.9	-2.5	-3.4	-4.3	-5.2	-6.1	-7.0
	Residential	-0.8	-1.3	-2.1	-3.1	-4.3	-5.7	-7.3	-9.0	-11.0	-13.1	-15.4
Electric hot water	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Price elasticity	Commercial	12.4	14.4	16.2	18.0	19.8	21.5	23.3	25.1	26.8	19.6	30.3
	Industrial	4.1	4.8	5.4	6.0	6.6	7.2	7.8	8.4	8.9	6.5	10.1
	Residential	24.8	28.7	32.5	36.1	39.5	43.1	46.6	50.2	53.6	39.1	60.6
	Commercial	**20.6**	**23.1**	**24.7**	**25.6**	**25.9**	**25.7**	**24.9**	**23.7**	**22.4**	**11.6**	**18.8**
	Industrial	**4.7**	**5.3**	**5.7**	**6.0**	**6.1**	**6.1**	**6.0**	**5.7**	**5.4**	**2.2**	**4.9**
	Residential	**31.3**	**36.3**	**41.0**	**45.5**	**49.6**	**53.7**	**56.8**	**59.9**	**63.3**	**48.3**	**69.0**
	Total	**56.7**	**64.8**	**71.5**	**77.1**	**81.7**	**85.5**	**87.7**	**89.3**	**91.1**	**62.2**	**92.6**

3. Recent trends in Endeavour Energy electricity sales and peak demands

3.1 Historical outcomes for Endeavour Energy sales to 2020-21

Figure 3.1 shows total Endeavour Energy electricity sales over the period 2009-10 to 2020-21.

Between 2009-10 and 2014-15, Endeavour Energy electricity sales fell by some 1,280 GWh, or at a rate of 1.5 per cent per annum. Since 2014-15, the decline in sales for Endeavour Energy has stabilised. Between 2014-15 and 2020-21, sales rose by an average rate of 0.5 per cent per annum. Table 3.1 shows Endeavour Energy electricity sales on an actual and weather normalised basis by class.

Figure 3.2 shows total Endeavour Energy electricity sales on a weather normalised basis between 2009-10 and 2020-21. On a weather normalised basis, total sales rose at 0.7 per cent per annum between 2014-15 and 2020-21.

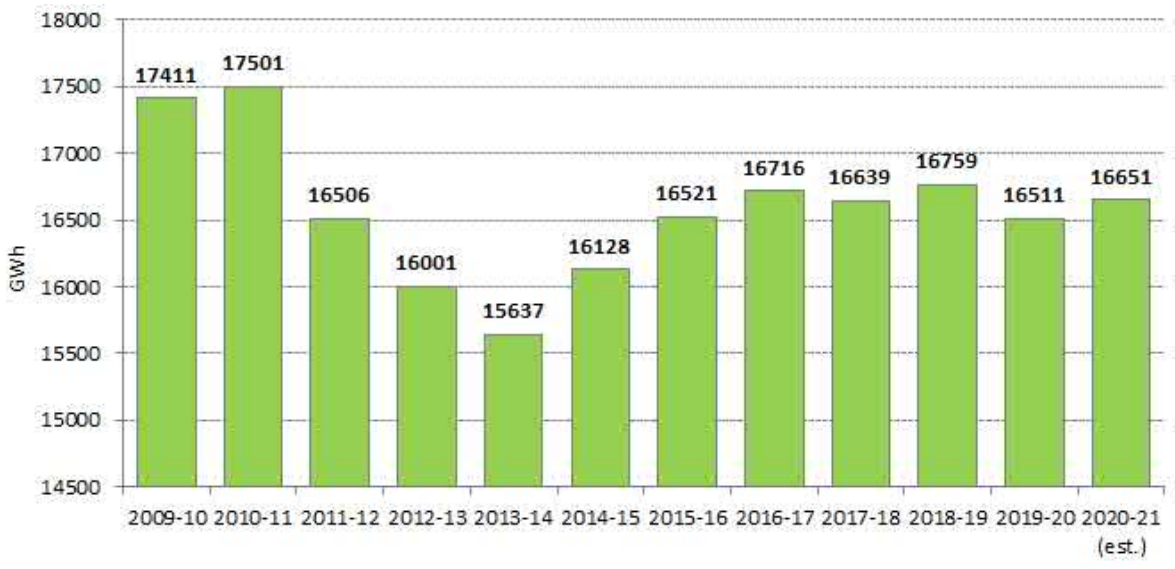
On a weather normalised basis total sales fell by 0.2 per cent between 2009-10 and 2020-21. Figure 3.7 shows the percentage decline in sales over this 11 year period by class for Endeavour Energy.

The absolute decline in sales between 2009-10 and 2020-21 was some 462 GWh on a weather normalised basis. Despite consistent residential customer growth, total residential sales remained relatively flat after declining between 2009-10 and 2013-14. Commercial sales have declined steadily over the period, although this probably partly reflects tariff switching.

Weather normalised sales on a per customer basis is shown in Table 3.2. As indicated in Table 3.2, domestic average usage has fallen from 6,092 kWh per customer to 5,325 kWh per customer, partly reflecting the lagged impact of high electricity prices, increasing PV penetration, energy savings schemes and a shift in the dwelling stock from houses to townhouses and apartments.

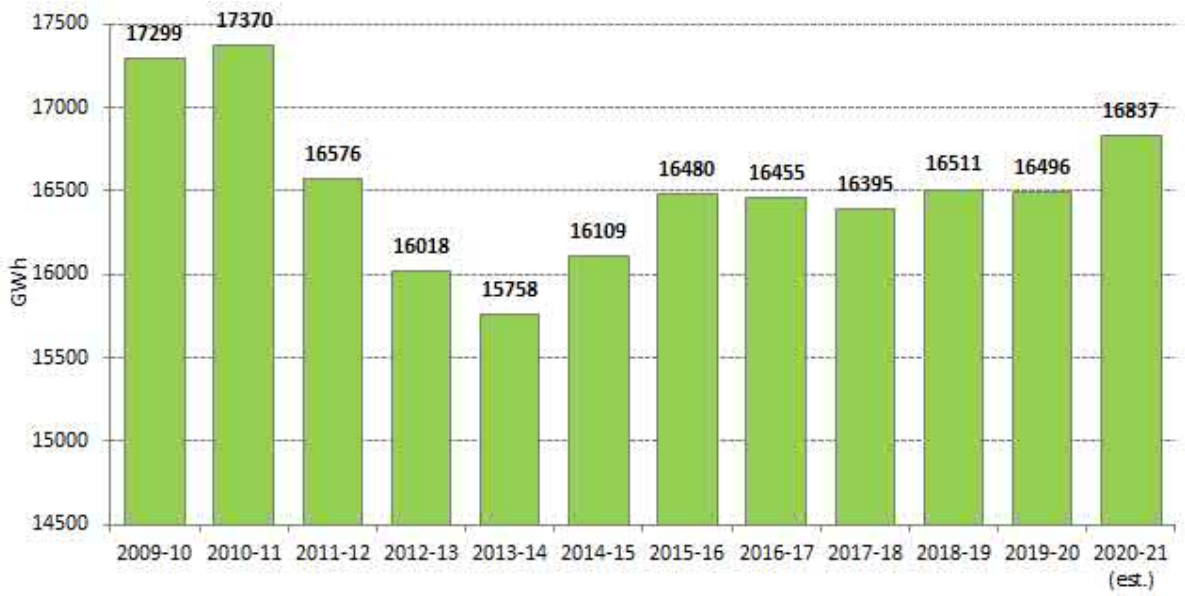
Average commercial and industrial sales per customer have also fallen significantly over the last 11 years for Endeavour Energy.

Figure 3.1: Total Endeavour Energy electricity sales – 2009-10 to 2020-21



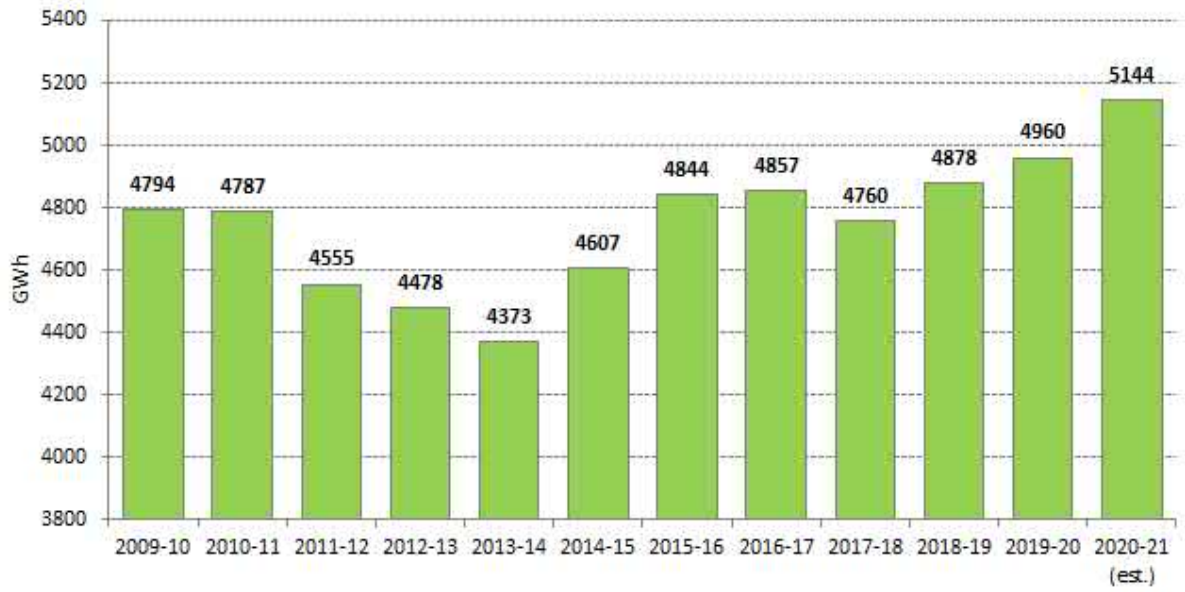
Source: Endeavour Energy 2021.

Figure 3.2: Total Endeavour Energy electricity sales – Weather normalised, 2009-10 to 2020-21



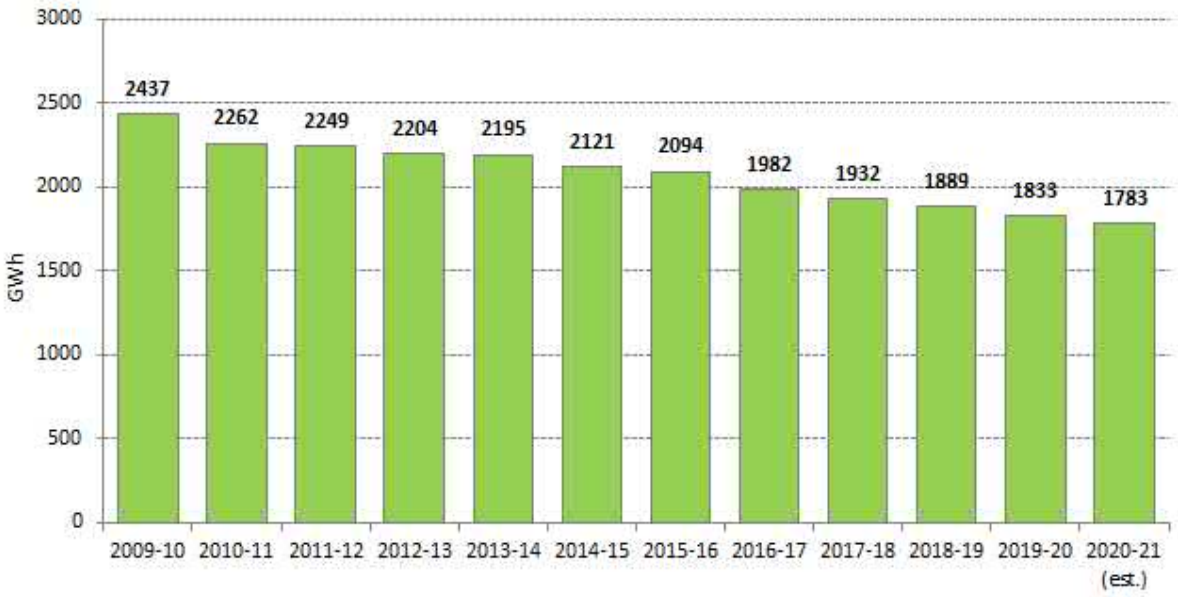
Source: Endeavour Energy 2021 and NIEIR.

Figure 3.3: Total residential electricity sales – Weather normalised, 2009-10 to 2020-21



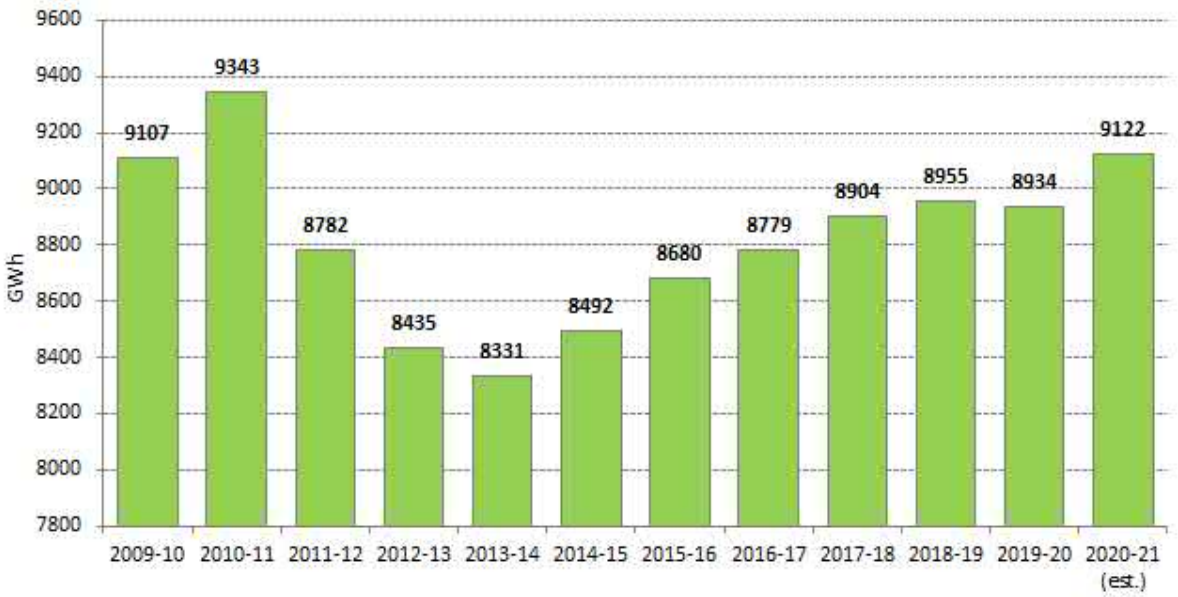
Note: Excludes controlled load.
Source: Endeavour Energy 2021 and NIEIR.

Figure 3.4: Total commercial electricity sales – Weather normalised, 2009-10 to 2020-21



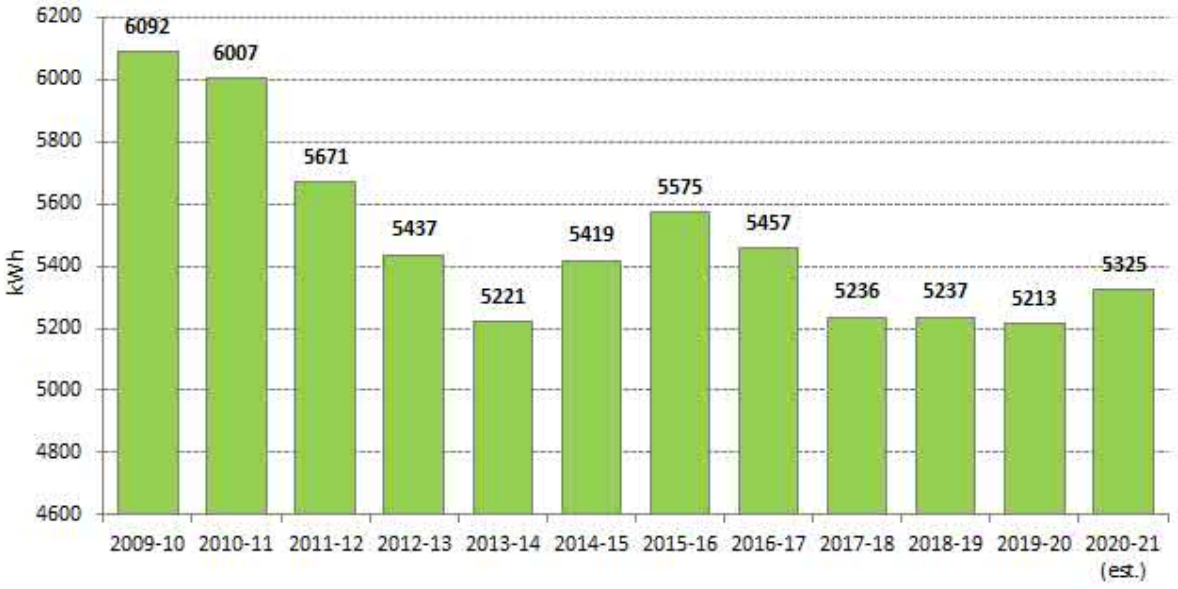
Source: Endeavour Energy 2021 and NIEIR.

Figure 3.5: Total industrial electricity sales – Weather normalised, 2009-10 to 2020-21



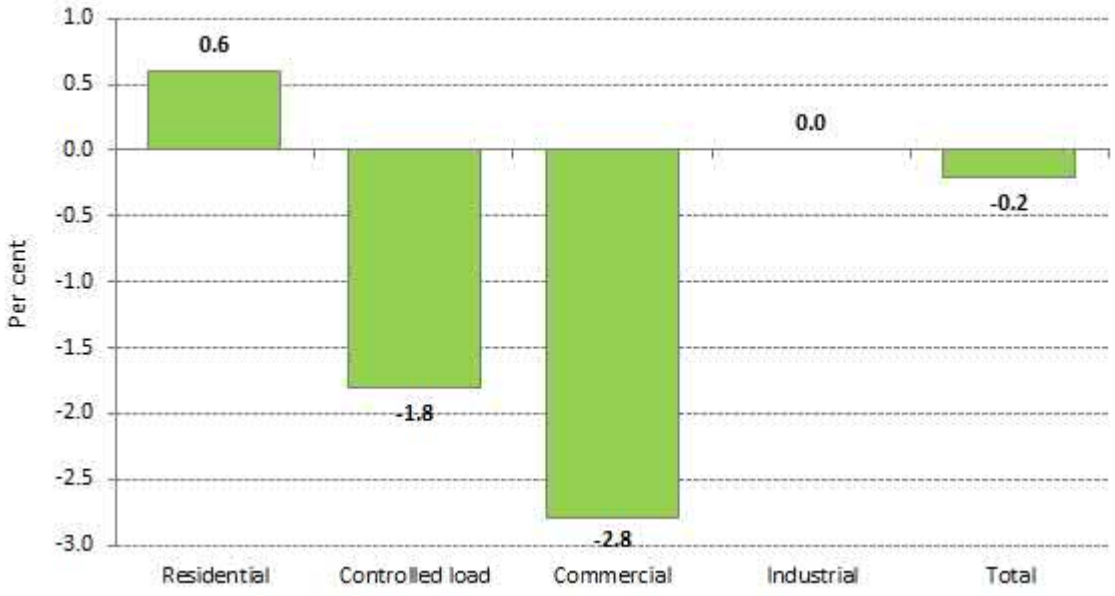
Source: Endeavour Energy 2021 and NIEIR.

Figure 3.6: Average residential electricity sales excluding controlled load – Weather normalised, 2009-10 to 2020-21



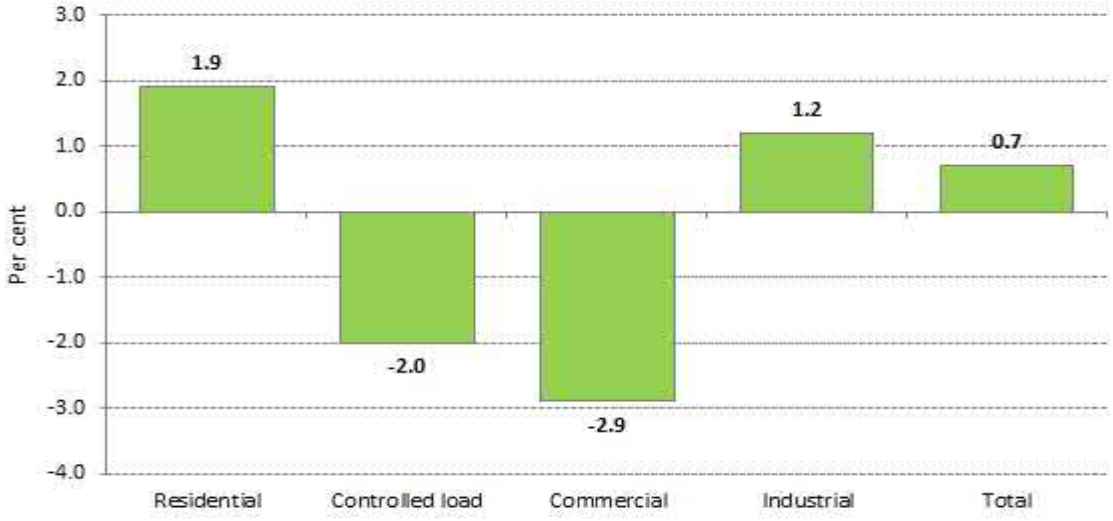
Source: Endeavour Energy 2021 and NIEIR.

Figure 3.7: Annual average percentage change in Endeavour Energy electricity sales by class – 2009-10 to 2020-21



Source: Endeavour Energy, April 2021.

Figure 3.8: Annual average percentage change in Endeavour Energy electricity sales by class – 2014-15 to 2020-21



Source: Endeavour Energy, April 2021.

Table 3.1 Actual and weather normalised sales by tariff and class – Endeavour Energy – 2009-10 to 2020-21

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21 (est.)
Total energy (GWh)												
Dom & CLd	5833	5857	5496	5367	5147	5509	5734	5877	5730	5840	5740	5802
Domestic	4872	4878	4506	4467	4288	4619	4872	5040	4931	5052	4971	5014
Controlled Load	961	978	990	900	859	889	862	837	799	788	769	788
Commercial	2463	2292	2233	2200	2169	2125	2102	2034	1980	1937	1836	1749
General Supply Non-TOU	1928	1843	1801	1741	1690	1679	1702	1658	1615	1580	1610	1585
General Supply TOU	379	322	313	317	336	305	261	232	221	213	83	19
Unmetered	157	127	119	142	144	141	139	145	144	143	143	145
Industrial	9115	9353	8777	8434	8321	8494	8684	8805	8929	8982	8962	9136
Low Voltage TOU Demand	3367	3441	3438	3480	3456	3568	3745	3809	3838	3835	3638	3657
High Voltage TOU Demand	1740	1774	1629	1663	1637	1617	1537	1578	1543	1546	1625	1621
Sub Transmission TOU Demand	2047	2109	2120	1862	1852	1866	1888	1902	2104	2093	2163	2297
Bulk & Inter-distributor Transfer	1961	2029	1589	1429	1376	1443	1514	1517	1445	1508	1510	1525
Total	**17411**	**17501**	**16506**	**16001**	**15637**	**16128**	**16521**	**16716**	**16639**	**16759**	**16511**	**16651**
Total energy weather normalised (GWh)												
Dom & CLd	5755	5765	5545	5378	5231	5496	5706	5694	5559	5667	5729	5932
Domestic	4794	4787	4555	4478	4373	4607	4844	4857	4760	4878	4960	5144
Controlled Load	961	978	990	900	859	889	862	837	799	788	769	788
Commercial	2437	2262	2249	2204	2195	2121	2094	1982	1932	1889	1833	1783
General Supply Non-TOU	1906	1817	1815	1744	1712	1675	1695	1613	1574	1540	1608	1614
General Supply TOU	375	318	315	318	340	304	260	224	214	206	82	24
Unmetered	157	127	119	142	144	141	139	145	144	143	143	145
Industrial	9107	9343	8782	8435	8331	8492	8680	8779	8904	8955	8934	9122
Low Voltage TOU Demand	3360	3432	3444	3481	3466	3567	3742	3782	3812	3808	3637	3679
High Voltage TOU Demand	1740	1774	1629	1663	1637	1617	1537	1578	1543	1546	1625	1621
Sub Transmission TOU Demand	2047	2109	2120	1862	1852	1866	1888	1902	2104	2093	2163	2297
Bulk & Inter-distributor Transfer	1961	2029	1589	1429	1376	1443	1514	1517	1445	1508	1510	1525
Total	**17299**	**17370**	**16576**	**16018**	**15758**	**16109**	**16480**	**16455**	**16395**	**16511**	**16496**	**16837**

Source: Endeavour Energy, April 2021 and NIEIR.

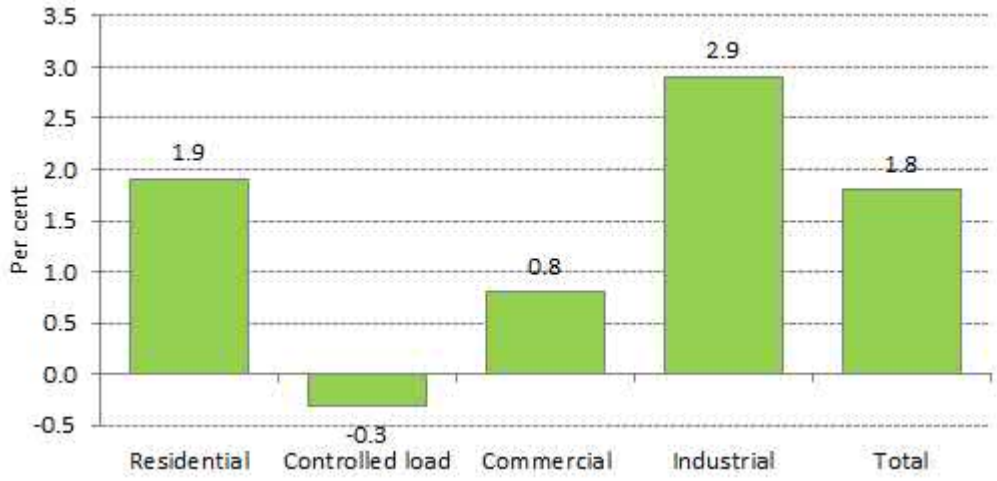
Table 3.2	Average weather normalised sales by tariff and class – Endeavour Energy – 2009-10 to 2020-21											
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21 (est.)
Average energy weather normalised (kWh)												
Dom & CLd	7313	7234	6904	6529	6246	6464	6568	6398	6115	6083	6021	6140
Domestic	6092	6007	5671	5437	5221	5419	5575	5457	5236	5237	5213	5325
Controlled Load	2793	2870	2922	2624	2507	2610	2536	2466	2358	2336	2284	2359
Commercial	32448	29722	29428	27639	27427	26992	26892	25090	24469	23811	22579	21648
General Supply Non-TOU	25963	24567	24444	22530	22090	22080	22485	21148	20640	20151	19966	19682
General Supply TOU	220827	148952	144562	136797	134376	113149	104782	90453	87296	77592	223720	454079
Unmetered	12043247	21151138	39618948	10167828	8455069	8313683	8187816	583999	555553	529339	507943	498783
Industrial	2143922	2136041	1955561	1861234	1818627	1757135	1673476	1660735	1612715	1578654	1651703	1564838
Low Voltage TOU Demand	857291	851952	831665	831851	819841	796663	773045	765219	735641	714752	718405	671370
High Voltage TOU Demand	6516117	6380396	5861131	6045907	5867368	5837001	5713889	5930895	5935131	5833484	6177938	6021226
Sub Transmission TOU Demand	37901591	35143326	33120476	29099842	28057022	26280985	26964396	27559196	29627399	29068410	30041334	31981180
Bulk & Inter-distributor Transfer	245145860	253628684	198674523	178600153	172010311	180346488	189279331	189620825	180628320	201055215	150972098	190580222
Total	**19969**	**19798**	**18750**	**17641**	**17087**	**17256**	**17314**	**16890**	**16502**	**16241**	**15891**	**15970**

Source: Endeavour Energy, April 2021.

Table 3.3 shows customer numbers by tariff group and class for 2009-10 to 2020-21. The key highlights are:

- residential customer growth of 1.9 per cent per annum;
- a decline in controlled load customers of 0.3 per cent per annum;
- growth of 0.8 per cent in commercial customers; and
- strong growth of 2.9 per cent for industrial customers, although this could reflect some tariff shifting between some commercial and industrial customers.

Figure 3.9: Average percentage change in Endeavour Energy electricity customers by class – 2009-10 to 2020-21



Source: Endeavour Energy, April 2021.

Table 3.3	Customer numbers by tariff and class – Endeavour Energy – 2009-10 to 2020-21 (number)											
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21 (est.)**
Dom & CLd	786940	796894	803173	823721	837594	850139	868750	889963	909018	931593	951507	966137
Domestic	786940	796894	803173	823721	837594	850139	868750	889963	909018	931593	951507	966137
Controlled Load	344022	340827	338875	343065	342601	340665	339943	339584	338742	337389	336681	334039
Commercial	75116	76114	76421	79746	80033	78588	77867	79005	78967	79352	81180	82347
General Supply Non-TOU	73405	73973	74236	77409	77489	75880	75367	76277	76258	76428	80531	82004
General Supply TOU	1698	2135	2182	2323	2527	2691	2483	2480	2449	2653	368	53
Unmetered	13	6	3	14	17	17	17	248	260	271	281	290
Industrial	4248	4374	4491	4532	4581	4833	5187	5286	5521	5673	5409	5829
Low Voltage TOU Demand	3919	4028	4141	4185	4228	4477	4840	4943	5182	5328	5062	5480
High Voltage TOU Demand	267	278	278	275	279	277	269	266	260	265	263	269
Sub Transmission TOU Demand	54	60	64	64	66	71	70	69	71	72	72	72
Bulk & Inter-distributor Transfer	8	8	8	8	8	8	8	8	8	8	10	8
Total	**866304**	**877382**	**884085**	**907999**	**922208**	**933560**	**951804**	**974254**	**993506**	**1016618**	**1038096**	**1054313**

Source: Endeavour Energy, April 2021.

3.2 Historical Endeavour Energy network peak demand

Figure 3.10 shows the summer and winter peak demands for the Endeavour Energy network. With the exception of 2008, annual peak demand has occurred during summer over the 2008 to 2021 period.

Table 3.4 shows the most recent summer peak demand events to have occurred in the Endeavour Energy region alongside timing and temperature. The highest peak occurred in 2016-17 with a demand of 4,099 MW. The day reached a hot maximum of 43 degrees, and followed an equally hot day with the previous day average temperature of 26.2 degrees. The summer smallest peak occurred in 2011-12 of 3,125, during a mild summer and mild peak day with a maximum temperature of 32.9 degrees.

Post-modelling adjustments for peak demand must assume a particular time that peak demand occurs for each season. This may include the potential for a changing peak time. Summer peak demand events since 2010-11 for the Endeavour Energy network have typically occurred in the afternoon at 4:30 pm. Over 2007-08 to 2009-10 the summer peak demand has occurred most frequently at 4:00 pm. Since 2016-17, three summer peaks have been at 5:00 pm or later, suggesting the summer peak may have shifted about one hour. This could be a response to the large number of PV systems installed in New South Wales since 2010. As more PV systems are installed, more electricity demand is met at the household and business level, which reduces demand from the grid. Generally, PV generation decreases throughout the afternoon, such that there is less PV generating at 5:00 to 5:30 pm than there was at 4:00 pm. All else being equal, this has the potential to shift peak demand from the Endeavour Network to a later time interval.

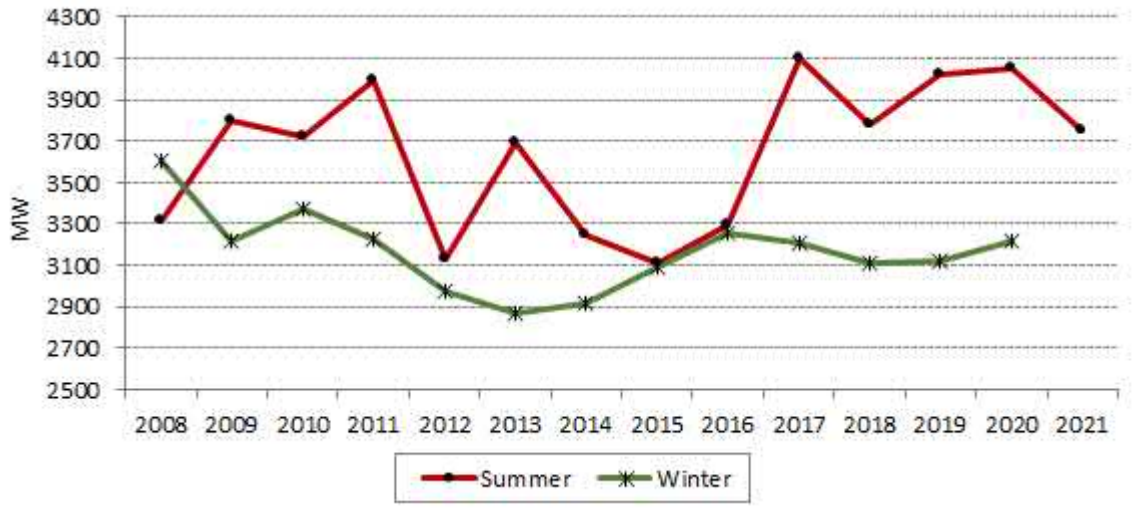
By definition maximum demand occurs only once over summer, so it can be difficult to make an assessment of the potential for peak shifting based on the top peak alone. To further investigate the timing of the historical peaks, NIEIR has calculated daily peaks across each summer weekday. The results for summer afternoons are summarised in Figure 3.11.

The most prevalent trend is the shifting from mid-afternoon peaks toward late afternoon peaks from 2008 to 2021. In 2009, 46 per cent of daily peaks occurred across the 3:00 pm and 4:00 pm intervals, while only around 10 per cent of peaks occurred in between 4:30 pm and 5:30 pm.

The proportion of late afternoon peaks has accelerated from close to 10 per cent in 2012 toward 30 per cent in 2015 and over 50 per cent in 2019 and 2020. The 2015 summer was the first to have a greater proportion of peaks occur in the late afternoon than during the mid-afternoon. By 2020, only 7 per cent of daily summer peaks for Endeavour Energy were between 3:00 pm and 4:00 pm compared to over 40 per cent in summer 2009. This provides further support that summer peak demand has shifted to later in the day.

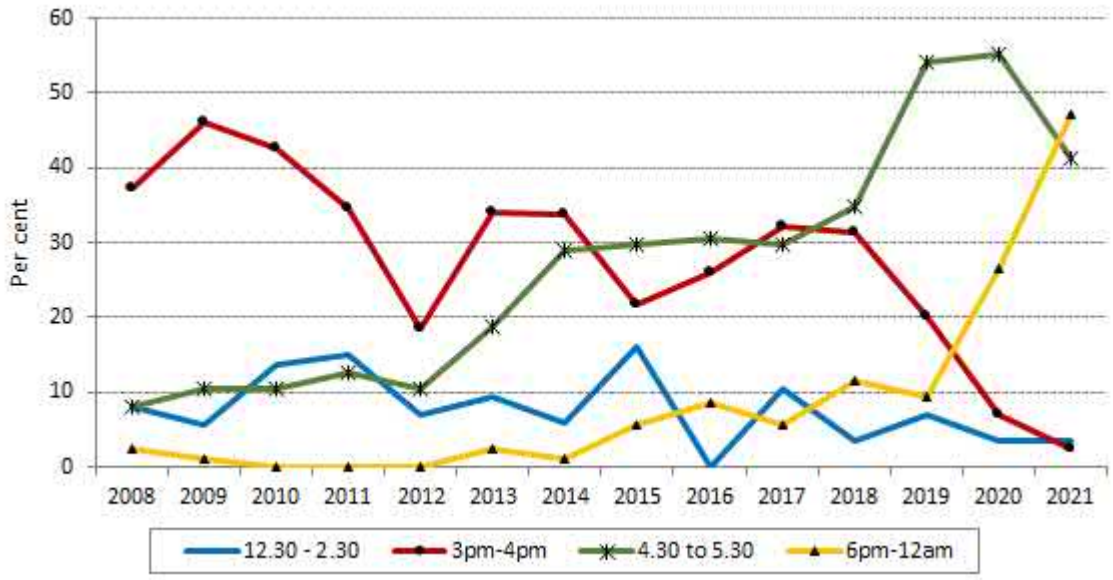
In contrast, winter peak demand has consistently peaked at either 6:00 pm or 6.30 pm without any signs of historical peak shifting. This is due to low light conditions, and therefore negligible PV generation at winter peak. Table 3.5 summarises the historical winter peak demands for Endeavour Energy. Overall, and ignoring the 2008 winter peak, the non-weather corrected winter peaks for Endeavour Energy have been relatively flat at between 3,000 and 3,250 MW.

Figure 3.10: Summer and winter peak annual demand – Endeavour Energy (MW)



Source: Endeavour Energy half-hourly demand, April 2021.

Figure 3.11: Percentage share of daily summer weekday peak demands – Endeavour Energy (per cent)



Notes: 1. The summer season represented in this figure is extended, December through to March. Total weekdays during summer are, on average, around 87 days per season.
2. Daily peaks prior to the 12:30 pm interval are not shown. In 2018 these accounted for around 19 per cent of total daily summer peaks.

Table 3.4 Summer maximum demands – Endeavour Energy – 2007-08 to 2020-21

		Endeavour Energy		Temperature (Degrees Celsius)			
Summer	Date	Demand (megawatts)	Time	Max	Min	Ave	Ave (t-1)
2020-21	Tuesday, 26 January 2021	3,746	4:30 PM	40.00	19.00	29.50	27.75
2019-20	Saturday, 1 February 2020	4,056	5:30 PM	44.50	22.00	33.25	28.10
2018-19	Friday, 18 January 2019	4,020	5:00 PM	38.40	22.20	30.30	29.20
2017-18	Tuesday, 19 December 2017	3,781	4:30 PM	41.80	19.40	30.60	26.50
2016-17	Monday, 30 January 2017	4,099	5:30 PM	43.00	21.70	32.35	26.20
2015-16	Tuesday, 1 December 2015	3,295	4:00 PM	38.00	16.50	27.25	22.35
2014-15	Friday, 23 January 2015	3,107	4:30 PM	31.80	20.20	26.00	24.30
2013-14	Friday, 20 December 2013	3,250	4:30 PM	40.20	17.00	28.60	22.95
2012-13	Friday, 18 January 2013	3,694	3:30 PM	45.50	19.40	32.45	25.45
2011-12	Monday, 30 January 2012	3,125	4:30 PM	32.30	21.30	26.80	22.95
2010-11	Tuesday, 1 February 2011	3,995	4:30 PM	41.00	18.30	29.65	28.35
2009-10	Thursday, 17 December 2009	3,722	4:00 PM	41.80	19.50	30.65	27.00
2008-09	Friday, 6 February 2009	3,798	4:00 PM	38.40	21.00	29.70	28.45
2007-08	Thursday, 31 January 2008	3,313	3:30 PM	32.80	20.50	26.65	27.10

Note: (a) Temperature at Parramatta North weather station.
Source: Endeavour Energy, 2021, Bureau of Meteorology and NIEIR.

Table 3.5 Winter maximum demands – Endeavour Energy – 2008 to 2020							
		Endeavour Energy		Temperature (Degrees Celsius)			
Winter	Date	Demand (megawatts)	Time	Max	Min	Ave	Ave (t-1)
2020	Friday, 7 August 2020	3,222	6:00 PM	14.80	6.20	10.50	9.70
2019	Tuesday, 4 June 2019	3,125	6:00 PM	14.60	7.00	10.80	9.00
2018	Tuesday, 19 June 2018	3,112	6:00 PM	14.30	8.20	11.25	13.65
2017	Monday, 3 July 2017	3,210	6:00 PM	15.50	1.80	8.65	10.05
2016	Monday, 27 June 2016	3,259	6:30 PM	12.20	6.20	9.20	8.50
2015	Thursday, 16 July 2015	3,090	6:30 PM	12.80	6.20	9.50	9.85
2014	Monday, 11 August 2014	2,917	6:30 PM	14.50	4.50	9.50	14.85
2013	Monday, 24 June 2013	2,872	6:00 PM	13.20	8.80	11.00	11.15
2012	Tuesday, 5 June 2012	2,975	6:00 PM	15.70	7.70	11.70	15.35
2011	Tuesday, 19 July 2011	3,230	6:30 PM	13.80	3.40	8.60	13.35
2010	Tuesday, 29 June 2010	3,372	6:30 PM	14.60	2.00	8.30	9.75
2009	Monday, 6 July 2009	3,218	6:30 PM	14.50	4.50	9.50	12.60
2008	Monday, 28 July 2008	3,607	6:30 PM	13.20	6.00	9.60	10.05

Note: (a) Temperature at Parramatta North weather station.
Source: Endeavour Energy, 2021, Bureau of Meteorology and NIEIR.

3.3 Endeavour Energy and New South Wales electricity demand

Where it is difficult to estimate regional impacts for new policy and technology, post-modelling adjustments are estimated at the New South Wales state level and attributed according to the Endeavour share of New South Wales energy.

NIEIR estimates that Endeavour Energy represents approximately 30.6 per cent of total sales in New South Wales in 2020, excluding exempt sales under the New South Wales ESS.

4. New South Wales Energy Security Safeguard

4.1 Introduction

This section outlines the impact of the New South Wales Energy Security Safeguard on electricity sales and demands for New South Wales and Endeavour Energy.

4.2 Background

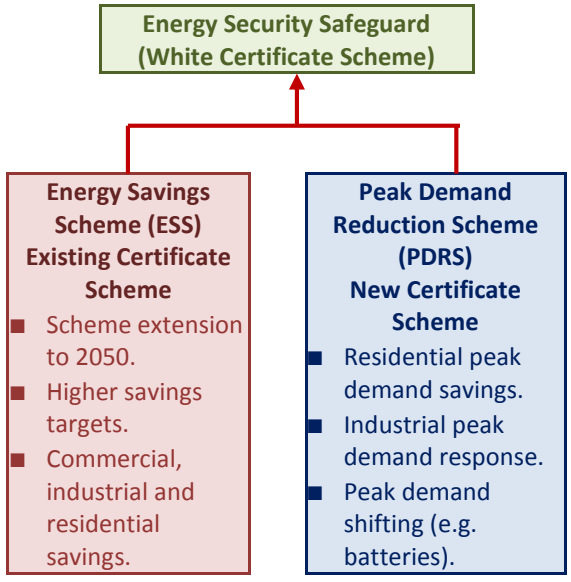
In April 2020, the Minister for Energy and Environment released a consultation paper outlining the Energy Security Target and Safeguard. This followed the release of the New South Wales Electricity Strategy in November 2019.

The key components of the Energy Security Target and Safeguard are illustrated in Figure 4.1. These comprise:

- an extension to the existing Energy Savings Scheme (ESS) which will now run to 2050, and include higher savings targets out to 2030; and
- a new Peak Demand Reduction Scheme which will support measures to reduce demand and shift demand away from peak periods.

The impacts of the Energy Savings Scheme are outlined in Section 4.3. The new Peak Demand Reduction Scheme is outlined in Section 4.4

Figure 4.1: The New South Wales Energy Security Safeguard



4.3 New South Wales Energy Savings Scheme

4.3.1 Background

The New South Wales ESS was established in 2009 under the *NSW Electricity Supply Act 1995*. The scheme provides financial incentives to install energy efficient equipment and appliances in New South Wales in residential and commercial buildings.

Energy savings under the scheme are created by Accredited Certificate Providers installing, improving or replacing energy savings equipment. Companies that are accredited can create energy savings certificates by carrying out eligible activities. These certificates can then be sold to scheme participants who have an obligation under the ESS to meet energy savings targets. The ESS participant include New South Wales electricity retailers, direct suppliers of electricity and market customers.

The ESS role sets out how Energy Savings Certificates can be created and outlines:

- types of eligible activities;
- types of ineligible activities;
- eligible applicants; and
- detailed calculation methodologies.

Recognised energy savings activities under the ESS include the following:

(i) modifying end-user equipment or the usage of end-user equipment which results in a reduction in energy consumption;

(ii) replacing end-user equipment with more energy efficient equipment;

(iii) installing new end-user equipment; and

(iv) removing end-user equipment with the result that there is a reduction in energy consumption compared to what would otherwise have been consumed.

Under the ESS there is a broad requirement that activities under the scheme must reduce energy consumption without reducing production levels or service levels. Sites must be located in New South Wales.

The Independent Pricing and Regulatory Tribunal of NSW (IPART) is the scheme administrator and regulator for the New South Wales ESS. IPART's responsibilities under the ESS include:

- assessing applications;
- accrediting companies to become Accredited Certificate Providers;
- managing compliance of existing Accredited Certificate Providers and scheme participants;
- amending accreditation conditions; and
- managing the website and registry.

Review and reform of the New South Wales Energy Savings Scheme

In 2014 and 2015 the New South Wales Government conducted a statutory review of the ESS, including a public consultation process. The main outcomes of the statutory review process were:

- expanding the ESS to include gas savings;
- increases to the Energy Savings Scheme targets;
- extension of the scheme to 2025 (later to be extended to 2050);
- support for energy savings made in regional areas; and
- enhancement of ESS administration, compliance and enforcement arrangements.

A five-year statutory review of the ESS commenced in 2019 and was published in June 2020. The Review concluded that the:

- ESS continues to meet the objectives of the Scheme;
- the objectives of the Scheme remain valid; and
- the broad Scheme design remains appropriate for delivering the Scheme objectives.

The Scheme objectives are to:

- create a financial incentive to encourage energy savings;
- reduce energy consumption and costs for businesses and households;
- complement national action to reduce the cost of greenhouse gas reduction; and
- reduce the cost of, and the need for, additional energy system infrastructure.

As noted above, the ESS provides for the extension and expansion of the ESS Scheme in New South Wales. These include the ESS will run now until 2050 with the target gradually increasing to 13 per cent by 2030 and an expanded set of eligible activities.

The NSW Government regards the ESS as an important element in making the transition to net zero emissions by 2050 cheaper and easier.

Creating Energy Savings Certificates

Only Accredited Certificate Providers can create Energy Savings Certificates. The number of certificates created is defined by:

Number of certificates = *Sum electricity savings*
x Electricity certificate conversion factor
+ Gas savings
x Gas certificate conversion factor

The Act provides various methods for calculating electricity and gas savings, including the following:

- the Project Impact Assessment Method;
- the Project Impact Assessment with measurement and Verification Method;
- the Metered Baseline Method; or
- the Deemed Energy Savings Method.

The Electricity Certificate Conversion Factor is 1.06, while the Gas Certificate Conversion Factor is 0.39.

Exemptions from the ESS

Full or partial exemption from the New South Wales ESS can be granted to energy intensive or trade exposed industries in New South Wales. A number of industries in the paper, chemicals, metals processing and non-metallic minerals sectors have been granted exemption.

Certificate creation ESS number and surplus creation

Table 4.1 shows total certificates created, certificates surrendered, surplus for year and cumulative surplus.

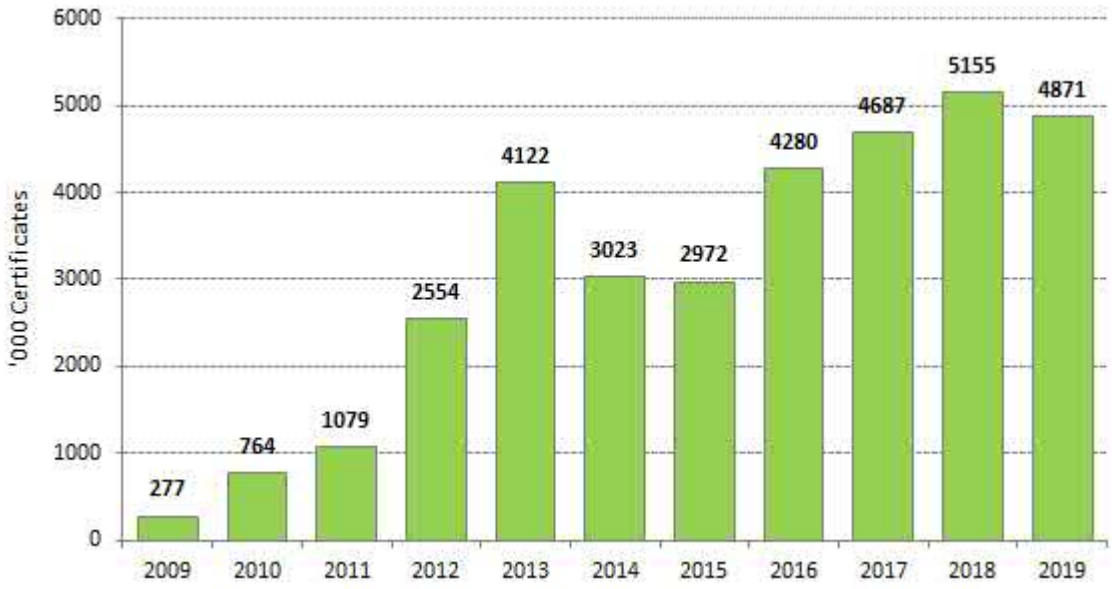
By June 2020, there were 5,133,631 certificates available for surrender in future compliance years. This surplus partly reflects the high level of certificate creation in 2013, and again in 2016 to 2018.

The surplus implies that some of the future energy savings required under the ESS can be met from surplus certificates already created. A discount factor was applied to the future required energy savings under the New South Wales ESS, representing these surplus certificates.

Table 4.1	Certificate creation and surplus certificates – NSW ESS				
	Total cert by year	Cumulative total	Certificates surrendered	Surplus certificates	Cumulative surplus
2009	276,942	276,942	148,928	128,014	128,014
2010	764,385	1,041,327	651,655	112,730	240,744
2011	1,079,407	2,120,734	1,063,564	15,843	256,587
2012	2,553,627	4,674,361	1,885,240	668,387	924,974
2013	4,121,802	8,796,163	2,491,055	1,630,747	2,555,721
2014	3,023,249	11,819,412	2,700,190	323,059	2,905,383
2015	2,971,703	14,791,115	2,706,669	265,034	3,170,417
2016	4,280,155	19,071,270	3,766,762	513,393	3,683,810
2017	4,686,658	23,757,928	4,063,989	622,669	4,306,479
2018	5,154,934	28,912,862	4,331,734	823,200	5,129,679
2019	4,870,731	33,783,593	4,866,779	3,952	5,133,631

Source: Table 2.6 pp17, IPART Annual Report to Minister, NSW ESS, Compliance and Operation 2019, July 2020.

Figure 4.2: New South Wales ESS certificate creation by year – 2009 to 2017 ('000 certificates)



4.3.2 The New South Wales ESS impacts by sector

Certificate creation under the New South Wales ESS can be broken down into broad sector and project type.

Most of the energy savings under the ESS have occurred in the commercial sector and commercial lighting. There have also been some significant savings in the industrial sector.

Table 4.2 shows the percentage shares of certificate creation between 2009 and 2020 by sector and also for selected project types.

Commercial lighting dominates the energy savings under the ESS, averaging nearly 60 per cent of all savings over the last 12 years. New appliances accounted for 3.8 per cent, while process change/control systems in the industrial sector averaged 13.6 per cent over the 12 year period. Most of the savings for the industrial sector were realised over the 2009 to 2016 period.

In terms of sectoral shares, the approximate shares between 2009 and 2020 are 9.1 per cent for residential, 81 per cent for commercial and 10 per cent for industrial.

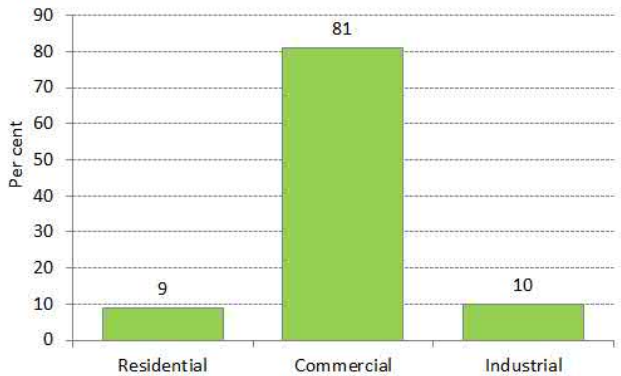
NIEIR's sectoral assumptions for the ESS to 2032 are shown in Table 4.3.

The sectoral shares of certificate creation between 2009 and 2020 is shown in Figure 4.3.

Table 4.2	Percentage shares of certificate creation by sector and selected project type – 2009 to 2020 (per cent)													
Sector	**Selected project type**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Average**
Commercial	HVAC	0.0	8.1	9.7	2.9	2.5	2.6	2.0	2.0	2.3	2.1	3.8	1.3	3.3
	Lighting	10.2	32.0	63.8	80.0	83.3	70.6	62.9	74.5	71.3	68.6	56.7	52.9	60.6
	Multiple activities	0.0	0.0	0.8	0.5	4.1	6.7	6.6	3.9	3.9	3.6	4.1	0.4	2.9
	Other	5.4	7.3	4.2	3.6	2.6	3.6	2.4	1.8	1.9	2.4	2.5	1.8	3.3
	Total	**15.6**	**47.4**	**78.5**	**87.0**	**92.4**	**83.6**	**73.9**	**82.3**	**79.5**	**76.8**	**67.1**	**56.4**	**70.0**
Commercial/ Industrial	Lighting	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.9	4.4	6.7	5.2	8.5	2.3
	Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**1.2**	**2.0**	**5.9**	**8.5**	**6.3**	**13.2**	**3.1**
Residential/ Commercial	New appliances	0.0	0.0	0.0	0.0	0.0	0.1	10.8	7.9	6.4	4.9	7.0	8.5	3.8
Industrial	Compressed air	5.9	11.9	6.2	2.1	0.9	0.5	0.9	0.4	0.6	0.7	0.0	0.1	2.5
	Fans/Pumps	9.2	14.0	6.9	2.2	1.5	1.5	1.5	0.5	0.8	1.1	0.2	0.1	3.3
	Lighting	2.5	5.3	3.0	1.8	1.1	1.3	1.7	0.4	0.2	0.0	0.0	0.0	1.4
	Other	66.8	21.4	5.4	6.9	4.0	13.1	10.2	6.5	6.4	6.7	8.0	7.5	13.6
	Total	**84.4**	**52.6**	**21.5**	**13.0**	**7.6**	**16.4**	**14.2**	**7.9**	**8.0**	**8.5**	**8.2**	**7.7**	**20.8**
Residential	Various	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.4	11.4	14.2	2.3
Total		**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Lighting all sectors		2.5	36.3	66.7	81.5	84.0	71.0	65.7	76.8	74.3	74.1	67.7	68.7	64.1

Table 4.3	New South Wales ESS energy savings by sector (per cent)		
	Residential	**Commercial**	**Industrial**
2009-2020	9.0	81.0	10.0
2021	10.0	80.0	10.0
2022	11.0	79.0	10.0
2023	12.0	78.0	10.0
2024	13.0	77.0	10.0
2025	14.0	76.0	10.0
2026	15.0	75.0	10.0
2027	16.0	74.0	10.0
2028	17.0	73.0	10.0
2029	18.0	72.0	10.0
2030	19.0	72.0	10.0
2031	20.0	72.0	10.0
2032	20.0	72.0	10.0

Figure 4.3: Percentage share of the New South Wales ESS certificate creation by sector – 2009 to 2020



4.3.3 Scheme performance

IPART produces an Annual Report to the Minister on Compliance and Operation of the New South Wales ESS. The latest report was published in July 2020.

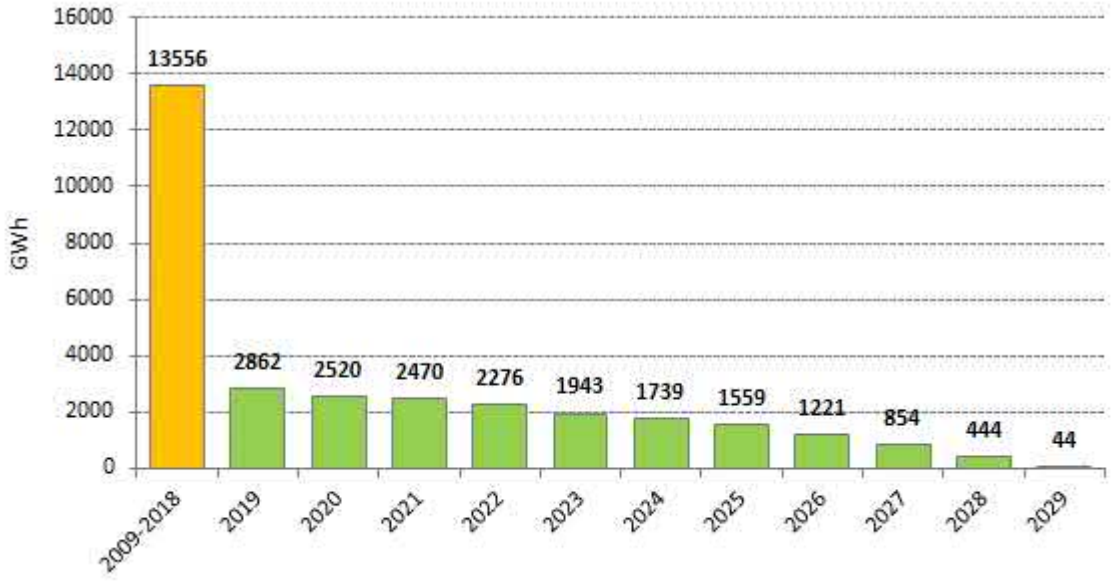
This report contains details of compliance and operation of the scheme up to 2019. Actual electricity savings as a result of certificates created between 2009 and 2018 is 31,490 GWh. The total savings comprise the following:

- 13,556 GWh during 2009 to 2018;
- 2,861 GWh during 2019; and
- 15,070 over the next 10 years of 2020 to 2029.

Table 4.4 shows the total savings by calculation method up to 2019. As indicated in Table 4.1, some electricity savings will be realised in future years as some certificates are created in advance of the savings.

Table 4.5 shows the actual savings by calculation method under the New South Wales ESS to 2018. Total annual savings by year are shown in Figure 4.4.

Figure 4.4: Total electricity savings under the New South Wales ESS – 2009 to 2029 (GWh)



Source: Table 2.2, pp. 10, IPART NSW Energy Savings Scheme Compliance and Operation in 2019.

Table 4.4 Estimated actual electricity savings by calculation method – NSW ESS (GWh)

	2009-2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Deemed Energy Savings Method	8476	2484	2443	2393	2199	1866	1662	1483	1152	803	410	44
Metered Baseline Method	3449	294	0	0	0	0	0	0	0	0	0	0
Project Impact Assessment Method	77	77	77	77	77	77	77	76	70	51	33	0
Project Impact Assessment with Measurement and Verification Method	1555	8	0	0	0	0	0	0	0	0	0	0
Total	**13556**	**2862**	**2520**	**2470**	**2276**	**1943**	**1739**	**1559**	**1221**	**854**	**444**	**44**

Source: Table 2.2, pp. 10, IPART NSW Energy Savings Scheme Compliance and Operation in 2019.

Table 4.5 Estimated actual electricity savings by calculation method – 2009-2018 (GWh)		
	2009-2018 (GWh)	Per cent share
Deemed Energy Savings Method	8476	62.5%
Metered Baseline Method	3449	25.4%
Project Impact Assessment Method	77	0.6%
Project Impact Assessment with Measurement and Verification Method	1555	11.5%
Total	**13556**	**100.0%**

4.3.4 Targets and penalties

The ESS target for electricity is any liable purchase of electricity for consumption for end-users in New South Wales. Sales to exempt industries (e.g. aluminium) are excluded from the scheme participants' energy savings target.

Table 4.6 shows the ESS targets, and the assumed targets adjusted for exemptions, and the electricity target from 2016 to 2032. Up to 2017, under the Solar Bonus Scheme, gross meter and net meter exports of electricity should also have been included in the ESS target. From 2017, gross meters reverted to net meters.

Each scheme participant must meet the target, either by acquiring and surrendering ESS certificates, or paying the penalty. The certificate price in 2019 was between $19 and $24 per MWh.

Table 4.7 shows a projection of New South Wales electricity consumption and the effective target for electricity to 2031-32. The electricity sales projection as prepared by NIEIR in May 2020.

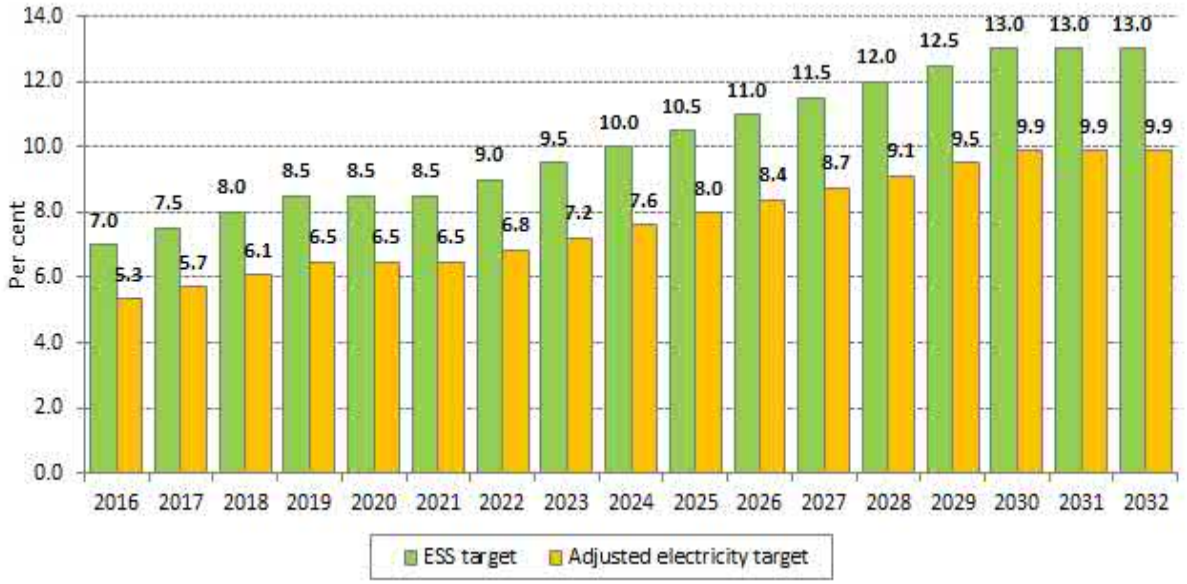
As can be seen in Table 4.7, the target for electricity rises from 4,191 GWh in 2019 to 4,995 GWh in 2025 and 6,096 GWh in 2031-32.

Table 4.6 New South Wales ESS targets			
	ESS target	Adjusted for exemptions[a]	Electricity[b] (adjusted for gas)
2009	1.0		
2010	1.5		
2011	2.5		
2012	3.5		
2013	4.5		
2014	5.0	4.0	3.8
2015	5.0	4.0	3.8
2016	7.0	5.6	5.3
2017	7.5	6.0	5.7
2018	8.0	6.4	6.1
2019	8.5	6.8	6.5
2020	8.5	6.8	6.5
2021	8.5	6.8	6.5
2022	9.0	7.2	6.8
2023	9.5	7.6	7.2
2024	10.0	8.0	7.6
2025	10.5	8.4	8.0
2026	11.0	8.8	8.4
2027	11.5	9.2	8.7
2028	12.0	9.6	9.1
2029	12.5	10.0	9.5
2030	13.0	10.4	9.9
2031	13.0	10.4	9.9
2032	13.0	10.4	9.9

Notes: (a) Exempt sales are assumed to be 20 per cent of sales.
(b) Gas saving activities are assumed to be 5 per cent of the effective target.

Table 4.7 New South Wales electricity consumption and effective target for electricity to 2031-32			
	Electricity sales (GWhs)	Electricity "target" (per cent)	Target (electricity), GWhs
2018-19	64869	6.5	4191
2019-20	63905	6.5	4128
2020-21	63782	6.5	4120
2021-22	63880	6.8	4369
2022-23	64110	7.2	4629
2023-24	63505	7.6	4826
2024-25	62594	8.0	4995
2025-26	62144	8.4	5195
2026-27	61202	8.7	5349
2027-28	60726	9.1	5538
2028-29	60143	9.5	5714
2029-30	60359	9.9	5964
2030-31	60576	9.9	5985
2031-32	60793	9.9	6006

Figure 4.5: The ESS target and Adjusted electricity savings target (per cent)



4.3.5 Future impacts of the ESS on electricity sales/savings

Given the notional target for electricity identified in Table 4.7 under the ESS in New South Wales, the annual targets can be calculated out to 2032. As not all savings occur in the current year a savings schedule was calculated from the 2019 certificates. This was taken directly from the IPART Compliance and Operation Report for 2018 and 2019, released in July 2019 and July 2020. Figure 4.6 shows the savings schedule applied to each year of savings out to 11 years.

Additional adjustments to the ESS electricity savings are required for:

(i) additionality and rebound; and

(ii) surplus certificates of some 5.1 million in June 2020.

The additionality aspect of the New South Wales ESS are likely to be significant. The majority of the certificate creation under the ESS has been from commercial lighting. The key question is, what would have been the uptake by the New South Wales market of energy efficient light emitting diode (LED) lighting in the absence of the New South Wales ESS? LED lighting technologies are now being installed as standard practice, as the energy savings quickly exceed the cost of the upgrades. As IPART states, the lighting market may no longer require the financial incentives provided under the ESS.

As indicated in Chapter 3 of this report, Endeavour Energy's commercial sales have fallen by an average annual rate of 2.7 per cent between 2010-11 and 2020-21. This represents nearly 550 GWhs, although a significant part of this would represent the installation of PV at commercial premises and some elements of tariff switching.

In previous work for Endeavour Energy, NIEIR used a 50 per cent discount factor for additionality, which is relatively conservative. In this study, a 40 per cent discount factor has been used for measures up to 2019 and 30 per cent thereafter. That is, post-2020, 70 per cent of activities (certificates) are ignored due to additivity and rebound impacts.

The adjustment for surplus certificates was assumed to be deducted from Year 1 certificates, equally in each of the 15 years of operation of the ESS out to 2035.

Table 4.8 shows the total electricity savings under the ESS for New South Wales by year after adjustment for additionality and surplus certificates. Tables 4.9 to 4.11 show these savings split by sector – residential, commercial and industrial.

Figure 4.6: Per cent annual savings schedule by year – NSW ESS

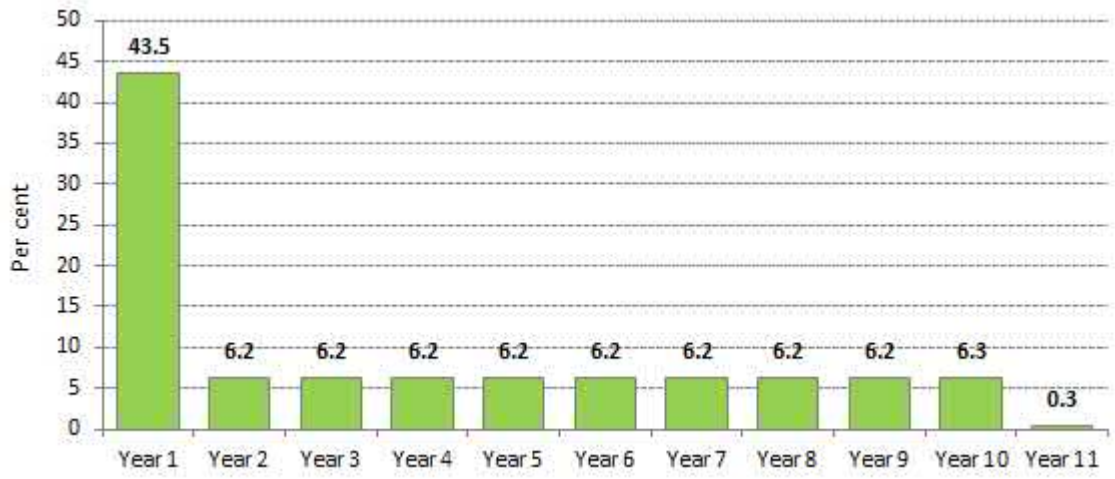


Table 4.8 Estimated total actual electricity savings after adjusting for additionality and surplus certificates created – New South Wales (GWh)

Impact year	Installation year for RESA 2009-2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2018	5422														
2019	1145	1145													
2020	1008	105	466												
2021	988	92	103	464											
2022	910	79	90	103	513										
2023	777	65	77	90	109	564									
2024	696	52	64	77	96	116	602								
2025	624	39	51	64	82	101	121	635							
2026	488	26	39	51	68	87	105	125	674						
2027	342	21	26	39	54	72	90	109	130	705					
2028	178	13	21	26	41	58	75	94	114	134	742				
2029	18	0	13	21	27	43	60	78	97	117	138	791			
2030			0	13	22	29	45	62	81	100	121	145	842		
2031				0	14	23	30	47	65	83	104	127	151	846	
2032					0	14	24	31	49	67	86	109	132	152	851
2033						0	15	25	32	50	69	90	113	133	152
2034							1	16	26	33	52	72	94	114	133
2035								1	16	27	35	54	75	95	114
2036									1	17	28	36	57	76	95
2037										1	17	29	38	57	76
2038											1	18	30	38	57
2039												1	19	30	38
2040													1	19	30
2041														1	19
2042															1
2043															
2044															
2045															
Total	**12595**	**1637**	**950**	**948**	**1026**	**1107**	**1169**	**1222**	**1285**	**1333**	**1392**	**1472**	**1552**	**1559**	**1566**

Table 4.9	Estimated total actual electricity savings after adjusting for additionality and surplus certificates created – New South Wales – RESIDENTIAL (GWh)														
Impact year	**Installation year for RESA 2009-2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
2018	488	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	103	103	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	91	9	42	0	0	0	0	0	0	0	0	0	0	0	0
2021	89	8	9	46	0	0	0	0	0	0	0	0	0	0	0
2022	82	7	8	10	56	0	0	0	0	0	0	0	0	0	0
2023	70	6	7	9	12	68	0	0	0	0	0	0	0	0	0
2024	63	5	6	8	11	14	78	0	0	0	0	0	0	0	0
2025	56	4	5	6	9	12	16	89	0	0	0	0	0	0	0
2026	44	2	3	5	7	10	14	17	101	0	0	0	0	0	0
2027	31	2	2	4	6	9	12	15	19	113	0	0	0	0	0
2028	16	1	2	3	4	7	10	13	17	21	126	0	0	0	0
2029	2	0	1	2	3	5	8	11	15	19	24	142	0	0	0
2030	0	0	0	1	2	3	6	9	12	16	21	26	160	0	0
2031	0	0	0	0	2	3	4	7	10	13	18	23	29	169	0
2032	0	0	0	0	0	2	3	4	7	11	15	20	25	30	170
2033	0	0	0	0	0	0	2	3	5	8	12	16	22	27	30
2034	0	0	0	0	0	0	0	2	4	5	9	13	18	23	27
2035	0	0	0	0	0	0	0	0	2	4	6	10	14	19	23
2036	0	0	0	0	0	0	0	0	0	3	5	6	11	15	19
2037	0	0	0	0	0	0	0	0	0	0	3	5	7	11	15
2038	0	0	0	0	0	0	0	0	0	0	0	3	6	8	11
2039	0	0	0	0	0	0	0	0	0	0	0	0	4	6	8
2040	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6
2041	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
2042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2045	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1134**	**147**	**86**	**95**	**113**	**133**	**152**	**171**	**193**	**213**	**237**	**265**	**295**	**312**	**313**

Table 4.10 Estimated total actual electricity savings after adjusting for additionality and surplus certificates created – New South Wales – COMMERCIAL (GWh)															
Impact year	**Installation year for RESA 2009-2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
2018	4392	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	927	927	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	816	85	377	0	0	0	0	0	0	0	0	0	0	0	0
2021	800	74	84	371	0	0	0	0	0	0	0	0	0	0	0
2022	737	64	73	82	405	0	0	0	0	0	0	0	0	0	0
2023	630	53	63	72	86	440	0	0	0	0	0	0	0	0	0
2024	563	42	52	62	75	90	464	0	0	0	0	0	0	0	0
2025	505	32	42	51	65	79	93	483	0	0	0	0	0	0	0
2026	396	21	31	41	54	68	81	95	506	0	0	0	0	0	0
2027	277	17	21	31	43	56	70	83	97	521	0	0	0	0	0
2028	144	11	17	21	32	45	58	71	85	99	541	0	0	0	0
2029	14	0	10	16	22	34	46	59	73	87	101	570	0	0	0
2030	0	0	0	10	17	22	35	47	61	74	88	104	598	0	0
2031	0	0	0	0	11	18	23	35	49	62	76	91	107	592	0
2032	0	0	0	0	0	11	19	24	36	49	63	78	94	106	595
2033	0	0	0	0	0	0	12	19	24	37	50	65	80	93	107
2034	0	0	0	0	0	0	0	12	19	25	38	52	67	80	93
2035	0	0	0	0	0	0	0	0	12	20	25	39	54	66	80
2036	0	0	0	0	0	0	0	0	0	12	20	26	40	53	66
2037	0	0	0	0	0	0	0	0	0	0	13	21	27	40	53
2038	0	0	0	0	0	0	0	0	0	0	0	13	21	26	40
2039	0	0	0	0	0	0	0	0	0	0	0	0	13	21	27
2040	0	0	0	0	0	0	0	0	0	0	0	0	0	13	21
2041	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
2042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2045	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**10202**	**1326**	**770**	**758**	**810**	**864**	**900**	**929**	**963**	**986**	**1016**	**1059**	**1102**	**1091**	**1097**

Table 4.11 Estimated total actual electricity savings after adjusting for additionality and surplus certificates created – New South Wales – INDUSTRIAL (GWh)															
Impact year	**Installation year for RESA 2009-2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
2018	542	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	114	114	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	101	10	47	0	0	0	0	0	0	0	0	0	0	0	0
2021	99	9	10	46	0	0	0	0	0	0	0	0	0	0	0
2022	91	8	9	10	51	0	0	0	0	0	0	0	0	0	0
2023	78	7	8	9	11	56	0	0	0	0	0	0	0	0	0
2024	70	5	6	8	10	12	60	0	0	0	0	0	0	0	0
2025	62	4	5	6	8	10	12	64	0	0	0	0	0	0	0
2026	49	3	4	5	7	9	11	12	67	0	0	0	0	0	0
2027	34	2	3	4	5	7	9	11	13	70	0	0	0	0	0
2028	18	1	2	3	4	6	8	9	11	13	74	0	0	0	0
2029	2	0	1	2	3	4	6	8	10	12	14	79	0	0	0
2030	0	0	0	1	2	3	5	6	8	10	12	14	84	0	0
2031	0	0	0	0	1	2	3	5	6	8	10	13	15	85	0
2032	0	0	0	0	0	1	2	3	5	7	9	11	13	15	85
2033	0	0	0	0	0	0	2	2	3	5	7	9	11	13	15
2034	0	0	0	0	0	0	0	2	3	3	5	7	9	11	13
2035	0	0	0	0	0	0	0	0	2	3	3	5	8	9	11
2036	0	0	0	0	0	0	0	0	0	2	3	4	6	8	9
2037	0	0	0	0	0	0	0	0	0	0	2	3	4	6	8
2038	0	0	0	0	0	0	0	0	0	0	0	2	3	4	6
2039	0	0	0	0	0	0	0	0	0	0	0	0	2	3	4
2040	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
2041	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
2042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2045	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1260**	**164**	**95**	**95**	**103**	**111**	**117**	**122**	**128**	**133**	**139**	**147**	**155**	**156**	**157**

Total energy savings by sector for New South Wales and Endeavour Energy are shown in Tables 4.12 and 4.13 respectively.

Table 4.12 Total energy savings New South Wales ESS – New South Wales

	Residential	Commercial	Industrial	Total
2020	142.1	462.0	57.0	661.1
2021	152.9	529.0	65.9	747.8
2022	163.8	624.2	78.5	866.5
2023	171.4	713.4	90.5	975.4
2024	183.5	785.6	100.7	1069.8
2025	196.5	844.0	109.4	1149.8
2026	205.2	896.8	117.6	1219.5
2027	212.7	939.2	124.6	1276.4
2028	220.4	979.6	131.5	1331.5
2029	231.0	1018.3	138.6	1387.9
2030	256.5	1057.4	146.0	1459.9
2031	276.1	1064.3	148.9	1489.3
2032	287.0	1076.3	151.5	1514.7

Table 4.13 Total energy savings New South Wales ESS – Endeavour Energy

	Residential	Commercial	Industrial	Total
2020	43.5	141.6	17.5	202.6
2021	46.8	162.1	20.2	229.1
2022	50.2	191.2	24.0	265.5
2023	52.5	218.6	27.7	298.9
2024	56.2	240.7	30.9	327.8
2025	60.2	258.6	33.5	352.3
2026	62.9	274.8	36.0	373.6
2027	65.2	287.8	38.2	391.1
2028	67.5	300.1	40.3	407.9
2029	70.8	312.0	42.5	425.2
2030	78.6	324.0	44.7	447.3
2031	84.6	326.1	45.6	456.3
2032	87.9	329.7	46.4	464.1

4.3.6 Peak demand impacts of the New South Wales ESS

Estimating the peak demand impacts of the ESS is difficult given the lack of end-use data for New South Wales.

The dominance of lighting, and especially commercial lighting, implies these will dominate the ESS impacts on peak demands for summer and winter.

The approach adopted for ESS impacts on peak demands was broadly as follows:

(i) the sectoral energy savings (residential, commercial and industrial) were calculated for week days across each year, but after netting off weekend savings;

(ii) the average half hourly savings per week day were calculated using the annual operating hours for lighting upgrades by building type (Energy Savings Scheme Rule of 2009, NSW Government Gazette No.26 of 8 April 2016). The average hours of lighting were calculated to be as follows: Commercial 13.7 hours; Industrial 14.3 hours and Residential 6.0 hours; and

(iii) the half hourly MWh savings were adjusted using an assumed load factor which varied for summer and winter MDs and by sector.

The assumed load factor for winter and summer are summarised in Table 4.14. These load factors assume lighting dominates the ESS peak demand impacts.

Tables 4.15 and 4.16 show the New South Wales and Endeavour Energy summer and winter peak demand impacts by sector to 2031-32. Figure 4.7 shows the total impacts on Endeavour winter and summer peak demands.

Table 4.14 Winter and summer load factors for ESS peak demand savings by sector (MDs)

	Winter MD	Summer MD
Residential	0.30	0.10
Commercial	0.25	0.20
Industrial	0.20	0.15

Figure 4.7: Total ESS energy savings – Endeavour Energy – 2020 to 2032 (GWh)

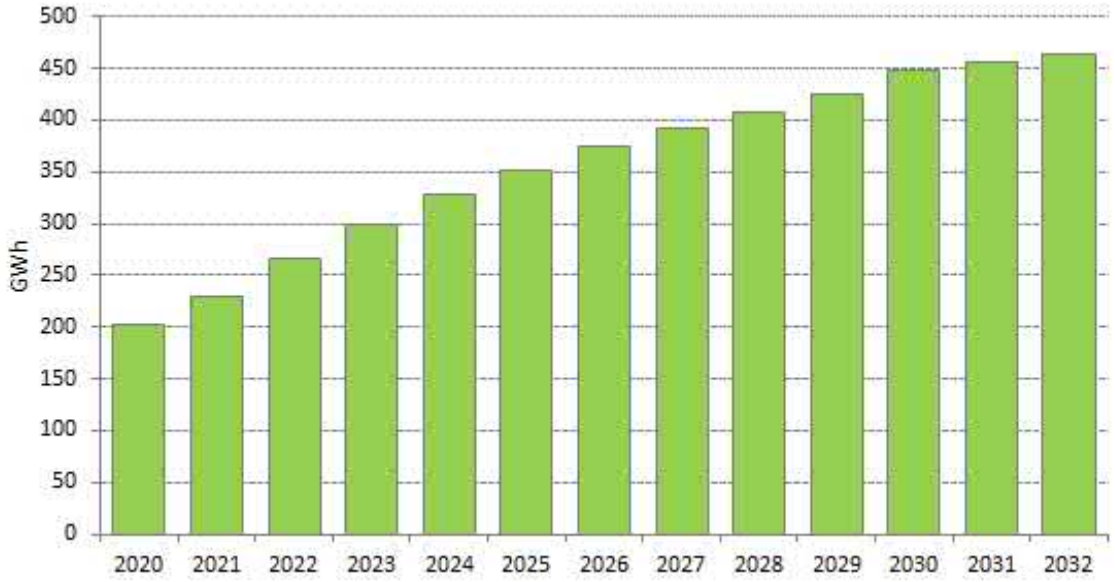


Figure 4.8: ESS peak demand impacts – Endeavour Energy – winter and summer (MW)

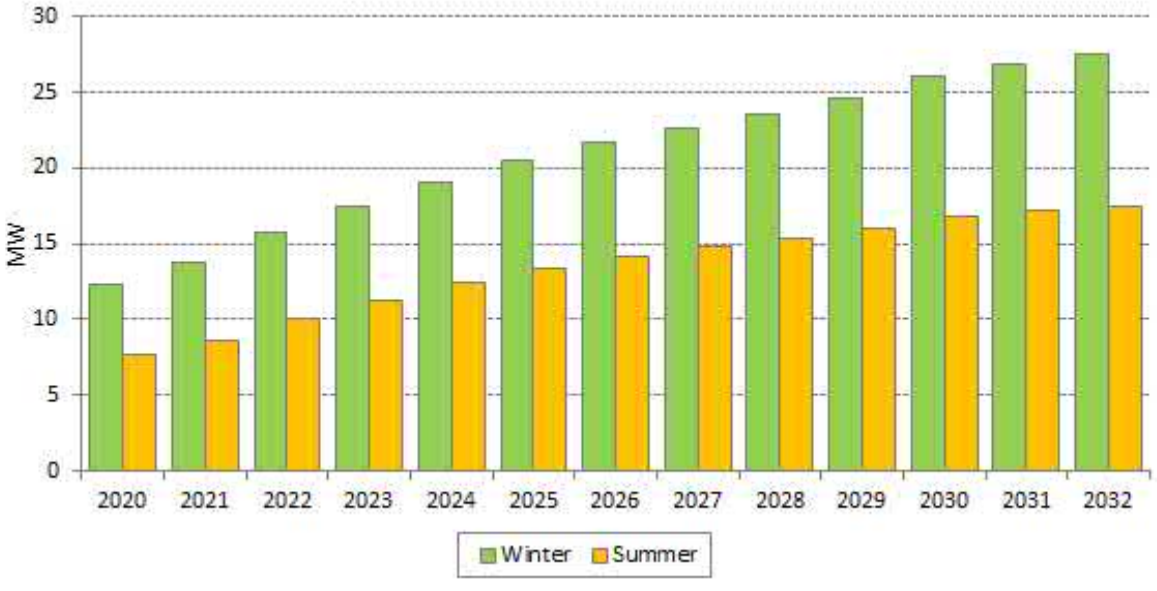


Table 4.15	Peak demand impacts – Winter and summer – Total New South Wales							
	Winter				Summer			
	Residential	Commercial	Industrial	Total	Residential	Commercial	Industrial	Total
2020	15.3	22.8	2.1	40.2	5.1	18.2	1.6	24.9
2021	16.4	26.1	2.5	45.0	5.5	20.9	1.9	28.2
2022	17.6	30.8	3.0	51.3	5.9	24.6	2.2	32.7
2023	18.4	35.2	3.4	57.0	6.2	28.1	2.6	36.8
2024	19.7	38.7	3.8	62.2	6.6	31.0	2.8	40.4
2025	21.1	41.6	4.1	66.8	7.1	33.3	3.1	43.4
2026	22.1	44.2	4.4	70.7	7.4	35.4	3.3	46.1
2027	22.9	46.3	4.7	73.9	7.6	37.0	3.5	48.2
2028	23.7	48.3	5.0	76.9	7.9	38.6	3.7	50.3
2029	24.8	50.2	5.2	80.3	8.3	40.2	3.9	52.4
2030	27.6	52.1	5.5	85.2	9.2	41.7	4.1	55.0
2031	29.7	52.5	5.6	87.8	9.9	42.0	4.2	56.1
2032	30.9	53.1	5.7	89.6	10.3	42.4	4.3	57.0

Table 4.16	Peak demand impacts – Winter and summer – Total Endeavour Energy							
	Winter				Summer			
	Residential	Commercial	Industrial	Total	Residential	Commercial	Industrial	Total
2020	4.7	7.0	0.7	12.3	1.6	5.6	0.5	7.6
2021	5.0	8.0	0.8	13.8	1.7	6.4	0.6	8.6
2022	5.4	9.4	0.9	15.7	1.8	7.5	0.7	10.0
2023	5.6	10.8	1.0	17.5	1.9	8.6	0.8	11.3
2024	6.0	11.9	1.2	19.1	2.0	9.5	0.9	12.4
2025	6.5	12.7	1.3	20.5	2.2	10.2	0.9	13.3
2026	6.8	13.5	1.4	21.7	2.3	10.8	1.0	14.1
2027	7.0	14.2	1.4	22.6	2.3	11.3	1.1	14.8
2028	7.3	14.8	1.5	23.6	2.4	11.8	1.1	15.4
2029	7.6	15.4	1.6	24.6	2.5	12.3	1.2	16.0
2030	8.4	16.0	1.7	26.1	2.8	12.8	1.3	16.9
2031	9.1	16.1	1.7	26.9	3.0	12.9	1.3	17.2
2032	9.5	16.3	1.7	27.5	3.2	13.0	1.3	17.5

4.3.7 Sub-area projections of the ESS impacts for Endeavour Energy

Projections of ESS impacts for Endeavour Energy were also required for the following aggregated areas:

- Western Sydney;
- Illawarra and Shoalhaven as one group; and
- Blue Mountains and Southern Highlands as one group.

Tables 4.17 to 4.19 show the energy savings by class and region. Tables 4.20 to 4.22 show the summer and winter peak demand impacts of the New South Wales ESS by region.

Table 4.17 Energy savings Endeavour Energy – Western Sydney

	Residential	Commercial	Industrial	Total
2020	20.7	63.5	7.8	92.1
2021	22.3	72.7	9.1	104.1
2022	23.9	85.8	10.8	120.5
2023	25.0	98.1	12.4	135.5
2024	26.8	108.0	13.8	148.6
2025	28.7	116.0	15.0	159.7
2026	29.9	123.3	16.2	169.4
2027	31.0	129.1	17.1	177.3
2028	32.1	134.7	18.1	184.9
2029	33.7	140.0	19.1	192.8
2030	37.4	145.4	20.1	202.9
2031	40.3	146.3	20.5	207.1
2032	41.9	148.0	20.8	210.7

Table 4.18 Energy savings Endeavour Energy – Blue Mountains and Southern Highlands

	Residential	Commercial	Industrial	Total
2020	13.9	48.1	5.9	67.9
2021	15.0	55.1	6.9	76.9
2022	16.0	65.0	8.2	89.2
2023	16.8	74.3	9.4	100.5
2024	18.0	81.8	10.5	110.2
2025	19.2	87.8	11.4	118.5
2026	20.1	93.3	12.2	125.7
2027	20.8	97.7	13.0	131.5
2028	21.6	102.0	13.7	137.2
2029	22.6	106.0	14.4	143.0
2030	25.1	110.1	15.2	150.4
2031	27.0	110.8	15.5	153.3
2032	28.1	112.0	15.8	155.9

Table 4.19 Energy savings Endeavour Energy – Illawarra and Shoalhaven

	Residential	Commercial	Industrial	Total
2020	8.9	30.0	3.7	42.5
2021	9.6	34.3	4.3	48.1
2022	10.3	40.5	5.1	55.8
2023	10.7	46.3	5.9	62.9
2024	11.5	50.9	6.5	68.9
2025	12.3	54.7	7.1	74.1
2026	12.8	58.1	7.6	78.6
2027	13.3	60.9	8.1	82.3
2028	13.8	63.5	8.5	85.8
2029	14.5	66.0	9.0	89.5
2030	16.1	68.6	9.5	94.1
2031	17.3	69.0	9.7	95.9
2032	18.0	69.8	9.8	97.6

Table 4.20 Peak demand impacts winter and summer – Endeavour Energy – Western Sydney								
	Winter				Summer			
	Residential	Commercial	Industrial	Total	Residential	Commercial	Industrial	Total
2020	2.2	3.1	0.3	5.7	0.7	2.5	0.2	3.5
2021	2.4	3.6	0.3	6.3	0.8	2.9	0.3	3.9
2022	2.6	4.2	0.4	7.2	0.9	3.4	0.3	4.5
2023	2.7	4.8	0.5	8.0	0.9	3.9	0.4	5.1
2024	2.9	5.3	0.5	8.7	1.0	4.3	0.4	5.6
2025	3.1	5.7	0.6	9.4	1.0	4.6	0.4	6.0
2026	3.2	6.1	0.6	9.9	1.1	4.9	0.5	6.4
2027	3.3	6.4	0.6	10.3	1.1	5.1	0.5	6.7
2028	3.5	6.6	0.7	10.8	1.2	5.3	0.5	7.0
2029	3.6	6.9	0.7	11.2	1.2	5.5	0.5	7.3
2030	4.0	7.2	0.8	11.9	1.3	5.7	0.6	7.6
2031	4.3	7.2	0.8	12.3	1.4	5.8	0.6	7.8
2032	4.5	7.3	0.8	12.6	1.5	5.8	0.6	7.9

Table 4.21 Peak demand impacts winter and summer – Endeavour Energy – Blue Mountains and Southern Highlands								
	Winter				Summer			
	Residential	Commercial	Industrial	Total	Residential	Commercial	Industrial	Total
2020	1.5	2.4	0.2	4.1	0.5	1.9	0.2	2.6
2021	1.6	2.7	0.3	4.6	0.5	2.2	0.2	2.9
2022	1.7	3.2	0.3	5.2	0.6	2.6	0.2	3.4
2023	1.8	3.7	0.4	5.8	0.6	2.9	0.3	3.8
2024	1.9	4.0	0.4	6.4	0.6	3.2	0.3	4.2
2025	2.1	4.3	0.4	6.8	0.7	3.5	0.3	4.5
2026	2.2	4.6	0.5	7.2	0.7	3.7	0.3	4.7
2027	2.2	4.8	0.5	7.5	0.7	3.9	0.4	5.0
2028	2.3	5.0	0.5	7.9	0.8	4.0	0.4	5.2
2029	2.4	5.2	0.5	8.2	0.8	4.2	0.4	5.4
2030	2.7	5.4	0.6	8.7	0.9	4.3	0.4	5.7
2031	2.9	5.5	0.6	9.0	1.0	4.4	0.4	5.8
2032	3.0	5.5	0.6	9.1	1.0	4.4	0.4	5.9

Table 4.22 Peak demand impacts winter and summer – Endeavour Energy – Illawarra and Shoalhaven								
	Winter				Summer			
	Residential	Commercial	Industrial	Total	Residential	Commercial	Industrial	Total
2020	1.0	1.5	0.1	2.6	0.3	1.2	0.1	1.6
2021	1.0	1.7	0.2	2.9	0.3	1.4	0.1	1.8
2022	1.1	2.0	0.2	3.3	0.4	1.6	0.1	2.1
2023	1.2	2.3	0.2	3.7	0.4	1.8	0.2	2.4
2024	1.2	2.5	0.2	4.0	0.4	2.0	0.2	2.6
2025	1.3	2.7	0.3	4.3	0.4	2.2	0.2	2.8
2026	1.4	2.9	0.3	4.5	0.5	2.3	0.2	3.0
2027	1.4	3.0	0.3	4.7	0.5	2.4	0.2	3.1
2028	1.5	3.1	0.3	4.9	0.5	2.5	0.2	3.2
2029	1.6	3.3	0.3	5.1	0.5	2.6	0.3	3.4
2030	1.7	3.4	0.4	5.5	0.6	2.7	0.3	3.5
2031	1.9	3.4	0.4	5.6	0.6	2.7	0.3	3.6
2032	1.9	3.4	0.4	5.7	0.6	2.8	0.3	3.7

4.4 Peak Demand Reduction Scheme

The Peak Demand Reduction Scheme (PDRS) is a new certificate scheme announced as part of the New South Wales Energy Security Safeguard.

4.4.1 Introduction and Scheme description

The NSW Government intends to establish a certificate scheme to reward the deployment of dependable peak demand reduction obligation on liable parties. Like the Energy Savings Scheme, a target would be set for peak demand reduction by liable parties.

Liable parties would be required to surrender or purchase peak demand reduction certificates. The technologies covered by the Scheme could range from residential space cooling appliances through to large-scale commercial HVAC systems and industrial processes.

The key objectives of the PDRS are to:

- reduce demand during peak periods and place downward pressure on wholesale prices;
- maintain electricity supply reliability;
- reduce the need for additional supply infrastructure; and
- support consumers to lower their energy bills by adopting peak demand reduction technologies.

The NSW Government released a consultation paper on the PDRS in 2020 and received both positive and negative comments from stakeholders. The NSW Government admitted that further modelling would be required before setting targets for the Scheme.

There are many complex issues associated with designing this certificate scheme for peak demand reductions in New South Wales. These include the following.

- **Measuring certificates**

  Peak demands have a capacity and duration dimension. The certificate would need to cover capacity (e.g. kW), timing, months, days and times, durations, and if required, availability factors.

- **Defining eligible activities**

  This would include peak demand savings, peak demand response and peak demand shifting. These would vary by sector and technologies (including battery).

- **Ensuring consistency and complementarity with other programs**

  There are a number of existing and proposed peak demand reduction schemes, some directly associated with the operation of the National Electricity Market (NEM).

  AEMO runs an emergency demand response program which typically covers the curtailment of loads by large consumers. The AER runs some network demand response programs.

  The E3, an equipment energy efficiency program, was approved by the COAG Energy Council covering air conditioners, electric water heaters, pool pumps and EV charging.

- **Consumer protection issues**

  Standard consumer protection mechanisms would need to be defined, covering safety, fit for purpose and so on.

- **A range of methods could be used to calculate reductions in peak demand.**

- **Recognising location-based peak demand savings.**

- **Establishing who is liable for the Scheme**

  Issues with exemptions, allocating liability, setting targets.

- **Setting penalties for non-compliance.**

- **Setting an initial compliance year**

  Certificates expire in each year or can run over a number of years.

4.4.2 Initial estimated impacts of PDRS on New South Wales demands and Endeavour Energy

Without the PDRS being fully mapped out, it is difficult to estimate its impact on New South Wales peak summer and winter demands, let alone sectoral impacts.

What is clear is that, like the New South Wales ESS, the PDRS is more than likely to involve additivity and rebound issues. There will also involve savings under the ESS itself.

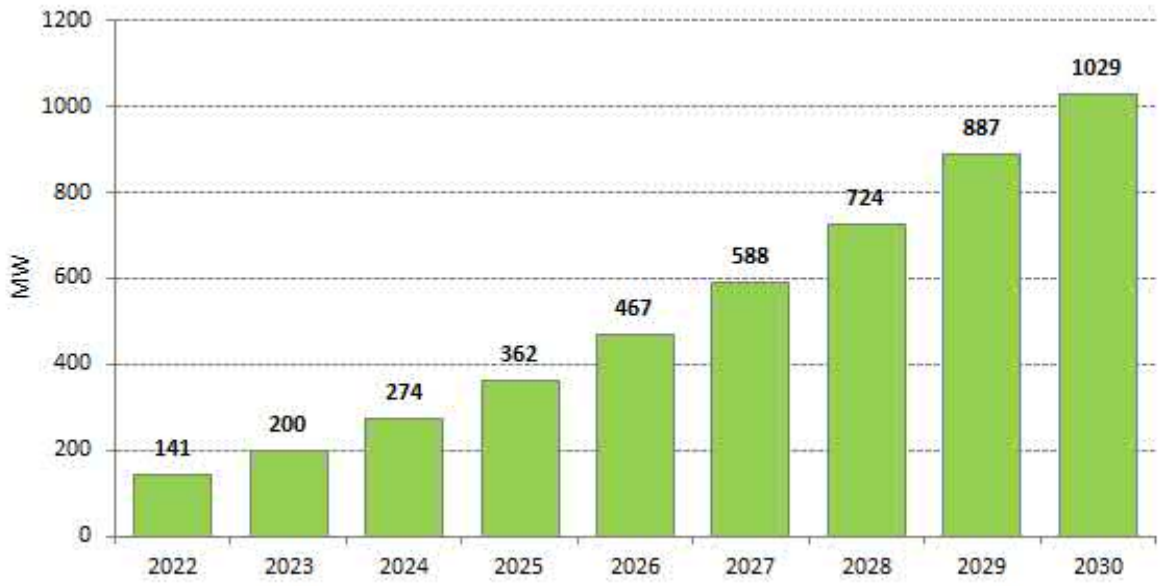
Some initial cost-benefit analysis was undertaken of the Energy Security Safeguard. In this work some indicative targets for annual peak demand reduction in New South Wales were provided. These are shown in Figure 4.9 below. These savings are said to be discounted by 13 per cent for free-riders and additivity.

The projected savings in Figure 4.9 are, apparently, based on modelling for the E3 programs regulatory impact statement and AEMO's projection of battery systems (2019). By 2030, the peak demand savings of 1,029 MW would represent around 7 per cent of New South Wales peak summer maximum demand in 2020 (pp. 91 Transgrid APR, 2020).

The Consultation Paper acknowledged that more work is required to identify peak demand reduction opportunities in New South Wales, especially for the commercial and industrial sectors.

At this point in time, May 2021, NIEIR would not recommend that Endeavour Energy allows for additional post-modelling adjustments for the New South Wales Peak Demand Reduction Scheme. Until the issues raised above are resolved, and targets are set, it remains too uncertain. The potential for double counting with the Scheme across other demand reduction programs and energy efficiency measures is significant. A clearer picture of the impact of the proposed Scheme may emerge by 2023 or 2024.

Figure 4.9: Indicative targets for peak demand reduction in New South Wales



Source: Energy Security Target and Safeguard, Consultation Paper, environmentnsw.gov.au, April 2020.

5. Small-scale photovoltaic systems and battery storage projections

5.1 Introduction

This section presents projections of small-scale photovoltaic systems (PVs) and battery storage systems for New South Wales and Endeavour Energy to 2031-32. The continued take-up of small-scale PV systems and battery storage will have significant impacts on energy sales and peak demands in New South Wales and Endeavour Energy.

The PV and battery storage projections for Endeavour Energy are required for the following categories:

- PV (solar) only installations;
- PV and battery installations; and
- Battery storage only installations.

Customer numbers and installed capacity is required by customer class, residential, commercial and industrial. Profiles in MW by class are also required by each zone substation for Endeavour Energy.

5.2 Background – Small-scale rooftop PV in New South Wales

The Solar Bonus Scheme (SBS) was introduced in New South Wales in January 2010.

The SBS in New South Wales offered generous feed-in tariffs of 60 cents and 20 cents per kWh and included both gross and net tariffs. Under gross tariffs all solar energy generated was exported to the grid, and households were separately billed for their "in-house" usage. Under a net tariff, customers were only paid for net electricity exported to the grid.

The New South Wales SBS included a scheme capacity limit of 300 kW and was closed to new applicants in 2011. SBS payments concluded at the end of 2016 and customers on gross feed-in tariffs should gradually migrated to net tariffs.

Undermining the increased popularity and reduced cost of solar systems post-2010 has been the Solar Credits program which is part of Australia's Renewable Energy Target. The Renewable Energy Target is administered by the Clean Energy Regulator (CER), Australian Government.

The small-scale Renewable Energy Scheme provides incentives for individuals and small business to install small-scale renewable energy systems such as solar panel systems, solar water heaters and air source heat pumps. The scheme generates the creation of small-scale technology certificates which Renewable Energy Target liable entities have a legal obligation to buy and surrender to the CER.

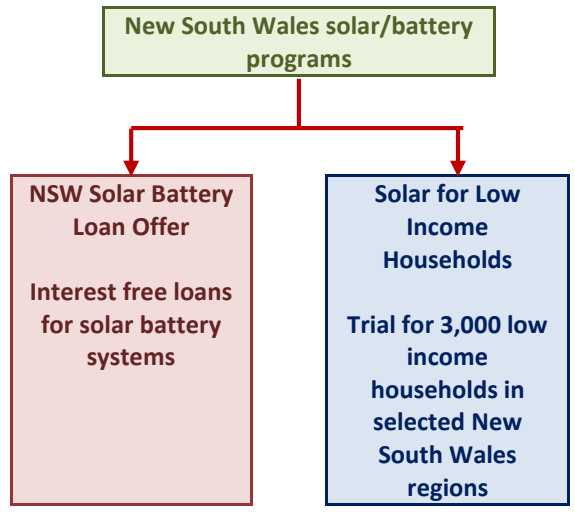
Small-scale technology certificates are provided up front for the system's expected power generation over a 15 year period. Typically purchasers surrender their certificates to an installer or agent, lowering the purchase price of PV systems.

Aside from initial FIT schemes, such as the SBS in New South Wales, the Renewable Energy Target and falls in the capital costs of PV systems have been the major drivers of PV installations in Australia since 2010.

As indicated below, solar installations in New South Wales have been experiencing a strong resurgence since 2017-18. The NSW Government has been offering limited incentives to encourage the take-up of PV and solar technologies by households.

Figure 5.1 shows NSW Government programs currently designed to encourage solar/battery uptake.

Figure 5.1: NSW Government programs designed to increase PV and battery take-up



Source: NSW Government, Energysaver.nsw.gov.au.

The Solar Battery Loan offer provides an interest free loan of up to $14,000 for a solar battery system and up to $9,000 for a battery retrofit system. The offer does not cover solar only installations.

The Solar for Low Income Households is a program to install 3,000 3 kW solar systems across selected regions of New South Wales. These include Central Coast, North Coast, Sydney South, Illawarra-Shoalhaven and South Coast. This program may be extended in the future.

The strong increase in rooftop solar in New South Wales has largely been driven by marketing and payback rates for solar systems. The current feed-in tariff for 2020-21 is 6.0 to 7.3 cents per kWh, although the rate varies between retailers.

NSW Government programs and incentives to install solar and solar/battery systems are likely to increase further in the future. In Victoria a rebate/interest free loan scheme for solar aims to have 650,000 new solar systems installed over a 10 year period. This program runs to 2028 in Victoria. In New South Wales, a panel replacement and inverter upgrade program could also add to small-scale rooftop PV.

5.3 Recent trends in solar installations in New South Wales

Figure 5.2 shows total annual installations of PV systems in New South Wales from 2009-10 to 2020-21. This data is sourced from the Clean Energy Regulator (CER).[3] The CER data represents all PV systems that have had certificates validly created against them. The data covers new installations, upgrades and off-grid PV systems. A 12 month creation period applies to create small-scale technology certificates under the *Renewable Energy Act (2000)*. NIEIR adjusts for this in the figures presented in this section by analysing certificate creation over time and grossing up the CER data to give estimated actuals.

Installations in New South Wales rose sharply in 2010-11 to around 118,000 installations, partly reflecting RET multipliers, the SBS and generators' feed-in-tariffs. Over 2011-12 and 2012-13, installations in New South Wales were around 40,000.

In 2017-18 small-scale solar panel installations rose to over 51,000 units, partly reflecting some downward movement in installation prices, but also a rapid rise in commercial and business installations. Installations have risen very sharply since 2017-18 in New South Wales. Installations more than doubled between 2017-18 and 2020-21 (estimate). Small-scale PV installations were around 65,000 in 2018-19, 93,000 units in 2019-20 and 121,000 units in 2020-21.

Figure 5.2 shows the cumulative installations in New South Wales between 2009-10 and 2020-21. Total small-scale PV installations reached 421,724 by the end of 2017-18 and over 700,000 by 2020-21. This represents around 12 per cent of total residential and business customers in New South Wales.

Figure 5.3 shows total annual installations in New South Wales in terms of MW installed in each year. Installations peaked in 2010-11 at 277 MW before falling to around 140 MW over 2012-13 and 2013-14. In 2017-18 installations jumped to 354 MW and have increased sharply since then, rising to 960 MW in 2020-21 (estimate).

Cumulative installations are shown in Figure 5.4, indicating that by 2017-18, 1,581 MW of small-scale PV were installed in New South Wales and 3,744 MW by 2020-21 (estimate).

Figure 5.5 shows the average size of new PV systems installed in each year with the cumulative average overall size of all installed PV systems. The average size has increased substantially, reflecting:

- initially, an increase in the average size of residential installations; and
- a significant increase in business and commercial installations which can be much larger systems.

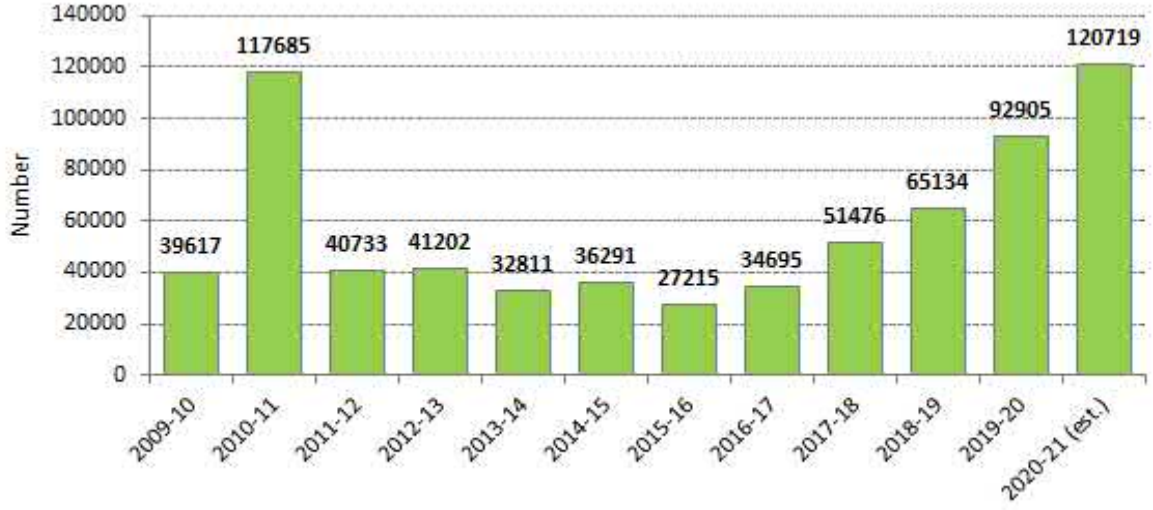
The average size of business installations in New South Wales in 2020-21, as assessed by NIEIR, was around 33 kW with a range from 3 kW to 90 kW. (This is based on the assumption that 93 per cent of installations are residential, averaging 3.6 kW capacity.)

Future State and Federal Government policies to encourage the uptake of small-scale PV systems and battery storage options remain uncertain. It is possible in New South Wales that the uptake could accelerate faster, if subsidy programs are introduced along the lines introduced in 2018 by the Andrew's Labor Government in Victoria. Under this Victorian program, the Government pays $2,225 towards the cost of a solar installation or eligible customers. It also offers an interest free loan to cover the remainder of the capital cost of the solar system.

Current prices for solar systems in Sydney, NSW are shown in Figures 5.7 and 5.8 for alternative sized residential and commercial systems.

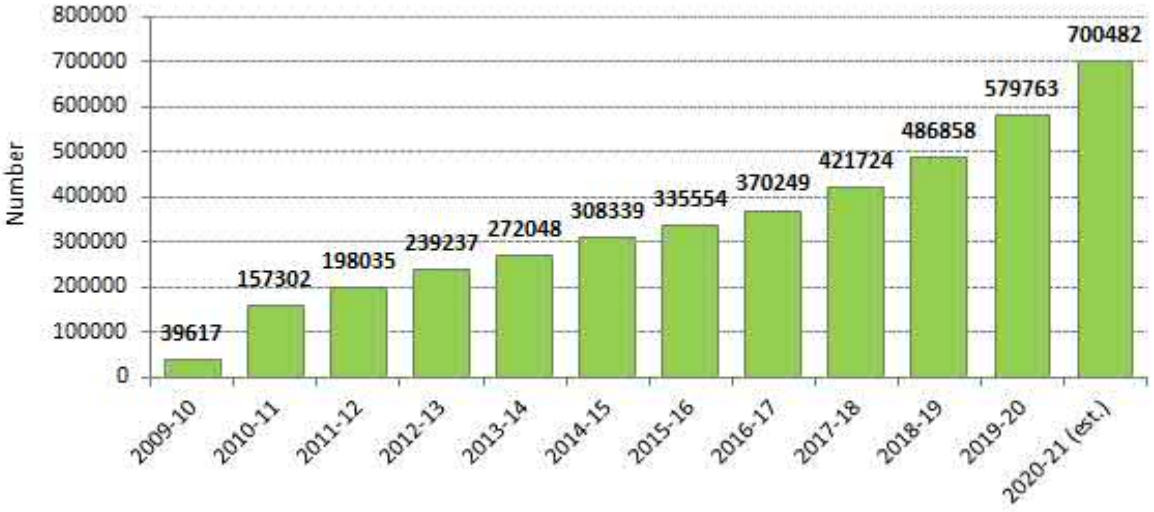
[3] www.cleanenergyregulator.gov.au/RET/Forms-and-resources/Postcode-data-for-small-scale-installations.

Figure 5.2: New South Wales PV installations – Annual number installed (number)



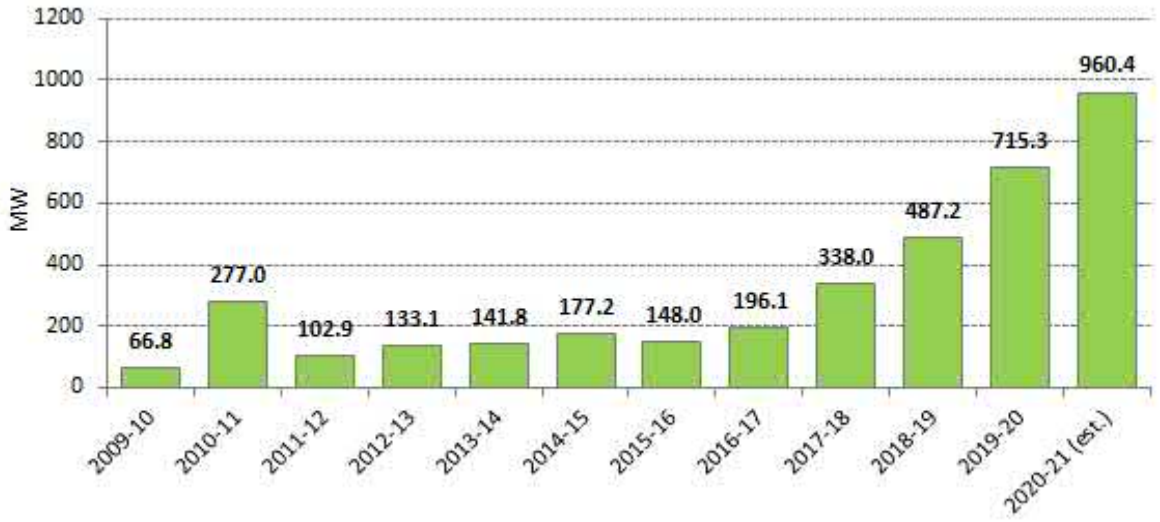
Source: CER and NIEIR.

Figure 5.3: New South Wales PV installations – Cumulative number installed (number)



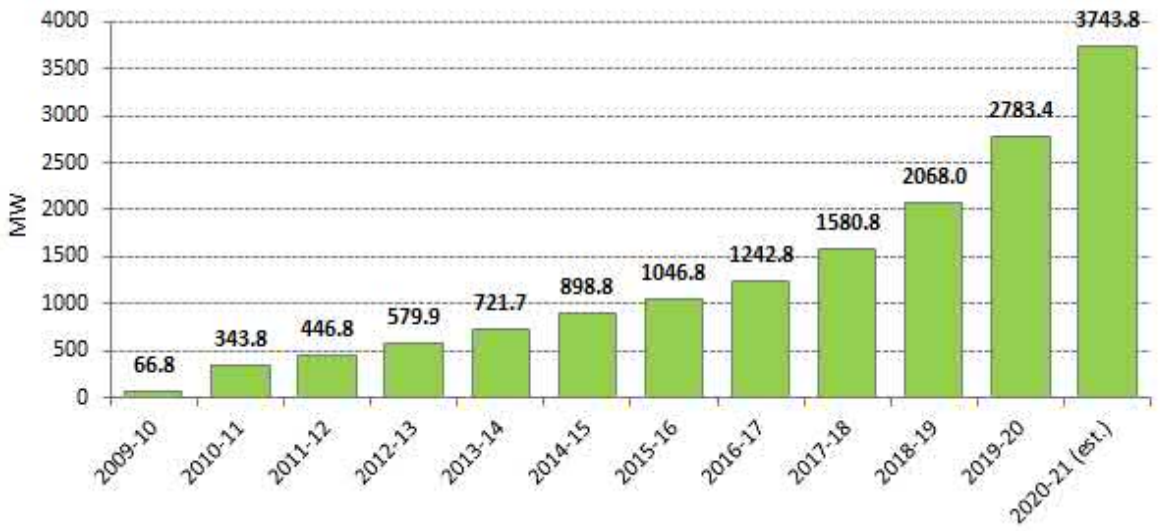
Source: CER and NIEIR.

Figure 5.4: New South Wales PV installations – Annual MW installed (MW)



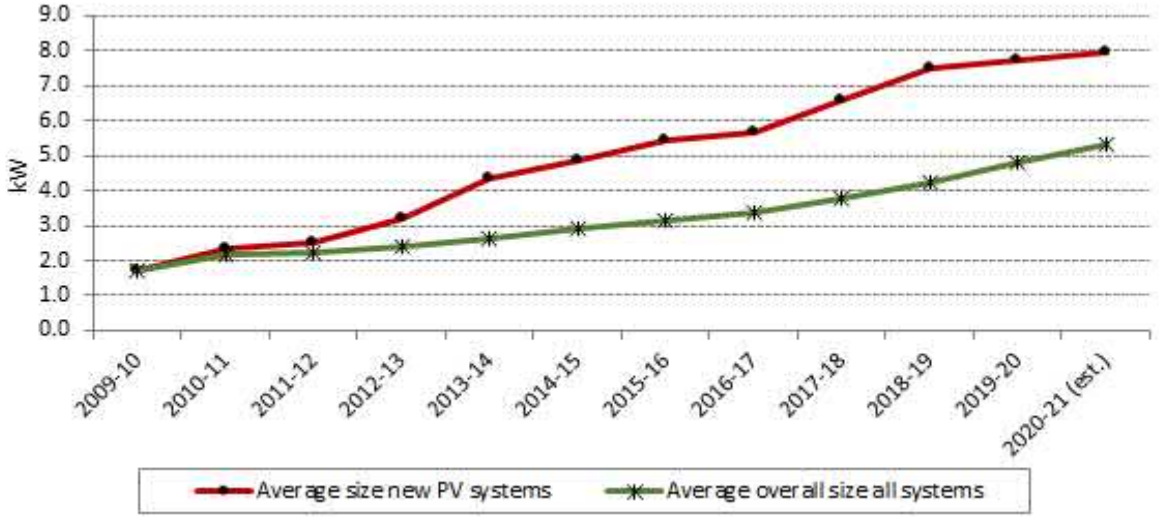
Source: CER and NIEIR.

Figure 5.5: New South Wales PV installations – Cumulative MW installed (MW)



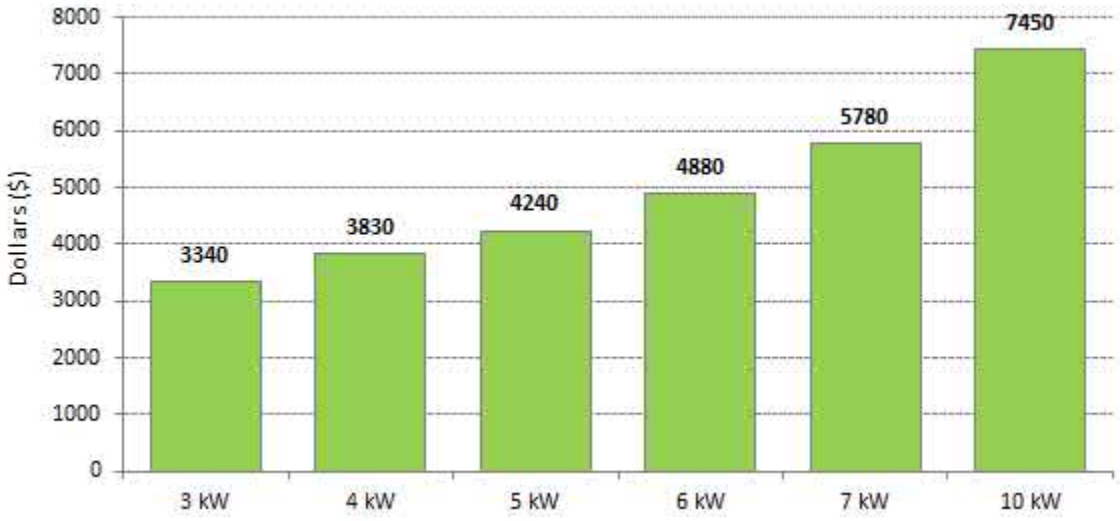
Source: CER and NIEIR.

Figure 5.6: Average size small-scale PV systems – New South Wales



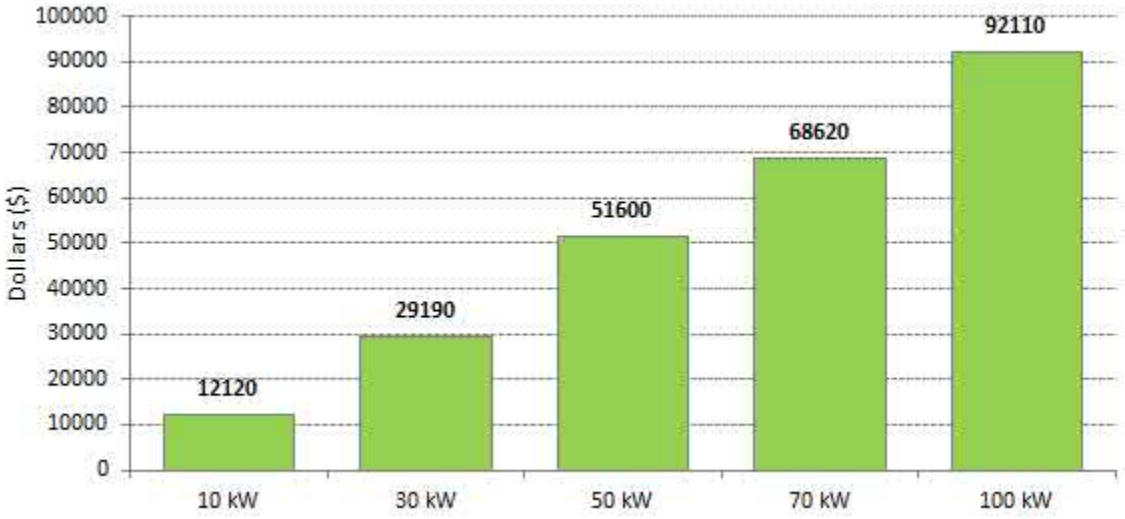
Source: CER and NIEIR.

Figure 5.7: Residential solar panel cost – May 2021



Source: Solar Choice, May 2021 (Sydney, NSW).

Figure 5.8: Commercial solar panel cost – May 2021



Source: Solar Choice, May 2021 (Sydney, NSW).

5.4 Data provided by Endeavour Energy

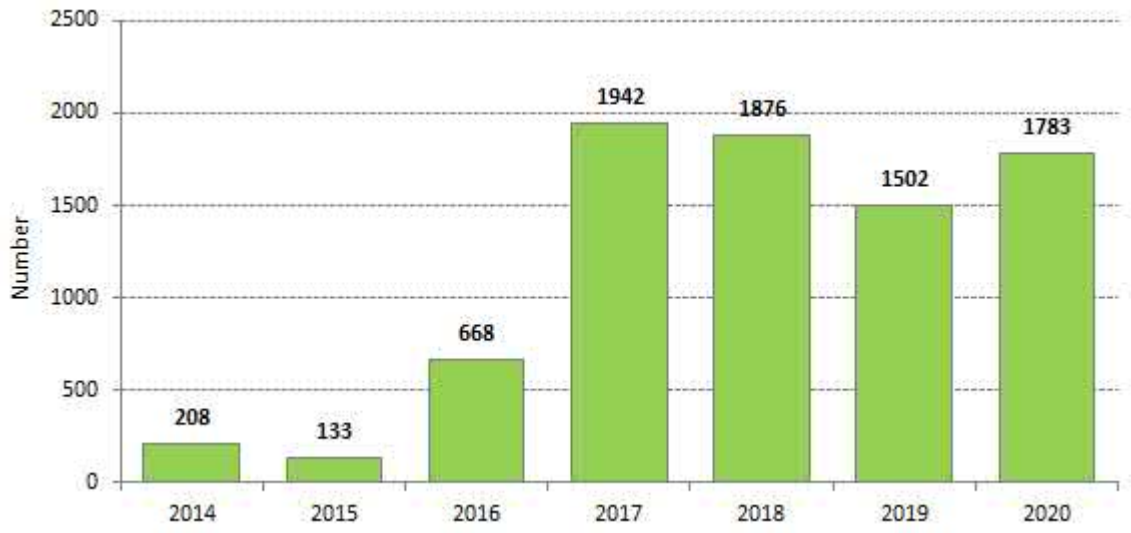
Endeavour Energy provided NIEIR with various data for small-scale solar systems.

Historical data was provided for customers and capacity by Endeavour Energy zone substations up to the end of March 2021. Splits of solar customers by residential, commercial and other were also provided by Endeavour Energy zone substations.

Endeavour Energy also provided monthly customers of PV by tariff to March 2021. This included a breakdown by class (residential/business) and by SBS and non-SBS and gross and net. NIEIR adopted to use the zone substation data for Endeavour Energy's PV forecasts given the level of detail required in this work.

There is very little data available on battery storage in Australia at this time. The CER reports solar plus battery installation but only at the State level. Figure 5.9 shows solar/battery installations in New South Wales since 2014 on a calendar year basis.

Figure 5.9: Installations of solar/battery systems in New South Wales



Source: CER 2021.

5.5 Modelling methodology for PV in New South Wales and Endeavour Energy

NIEIR's regional based PV model is based upon ABS Local Government Areas (LGAs). The battery component of the model was added in 2019.

The PV data in the model is based on data released by the Australian Government's Clean Energy Regulator. The Clean Energy Regulator (CER) has released small-scale solar panel data on the number of units and kilowatts installed capacity by postcode on a monthly basis since December 2009.

The CER data represents all PV systems that have valid certificates created against them. There is a 12 month creation period for registered persons to create small-scale technology certificates under the *Renewable Energy Act 2000*. This implies the data may be revised upwards.

NIEIR uses a mapping of postcodes to LGAs to convert the CER data to an LGA basis. There are some imperfections in this process as some postcodes cross state borders and NIEIR generally excludes unincorporated areas, such as Australian islands. NIEIR aggregates the data from monthly to quarterly.

The CER database includes both residential and non-residential installations under 100 kW.

The PV model contains a number of economic drivers on an LGA basis, including:

- house stock;
- stock of flats;
- income; and
- population.

The key driver of PV installations is a quarterly uptake rate by LGA. This is driven by assessed payback rates by state. The uptake rate is benchmarked on the dwelling stock for each LGA. The cumulative uptake of PV systems is a useful diagnostic check on the model projections.

The state-wide forecast for total PV installations is then used as a constraint for the LGA based projections.

The LGA based PV model includes a number of metrics which are illustrated in Figure 5.10. The metrics for PV include:

- PV installations by LGA (number);
- average PV unit size by LGA;
- PV installations by kW;
- cumulative installations by LGA (number and KW);
- irradiation by LGA;
- generation by LGA;
- own-use and export by LGA;
- battery take-up by LGA (number and kWh); and
- maximum demand impacts by LGA.

NIEIR used Endeavour Energy data on customer splits at the zone substation level.

A comparison of the CER data and the Endeavour Energy zone substation data is provided in Table 5.1.

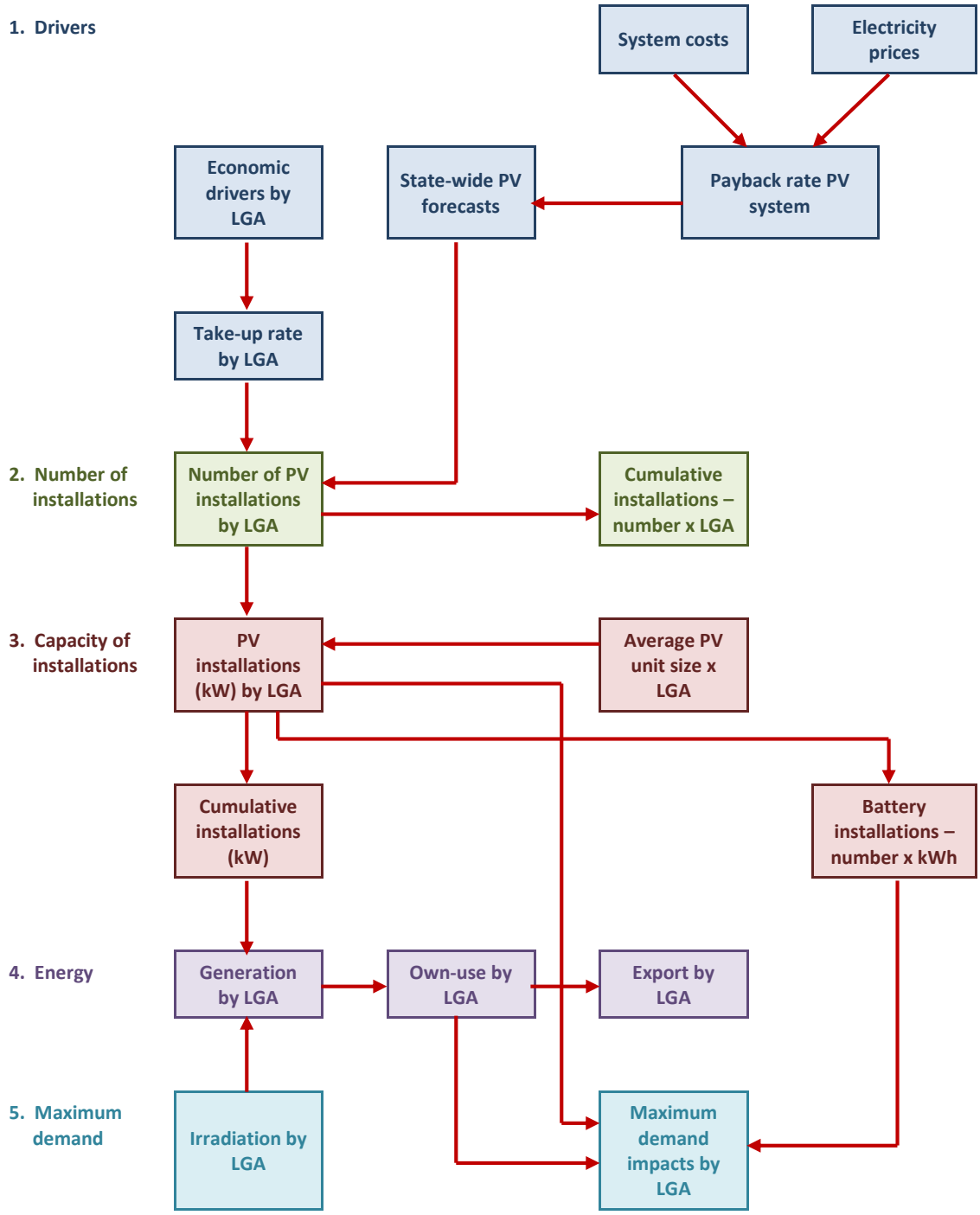
As indicated in Table 5.1, there are some differences between the CER data on PV and the Endeavour Energy data on PV systems. In part this reflects the methodologies underlying each source of data. Overall, and compared to the 2018 report, they align a lot closer.

Table 5.1 Comparison of CER and Endeavour Energy PV data – 2009-10 to 2020-21

	Clean Energy Regulator[1]			Endeavour Energy zone substation data[2]		
	Cumulative customers (no.)	Cumulative capacity (MW)	Average capacity (kW)	Cumulative customers (no.)	Cumulative capacity (MW)	Average capacity (kW)
2009-10	10558	17.8	1.7	2780	8.5	3.1
2010-11	46546	94.4	2.0	9404	28.0	3.0
2011-12	62627	130.1	2.1	22501	69.2	3.1
2012-13	74530	165.8	2.2	34511	110.8	3.2
2013-14	83289	201.3	2.4	42748	144.7	3.4
2014-15	93405	248.2	2.7	50687	181.3	3.6
2015-16	100785	287.9	2.9	63462	237.7	3.7
2016-17	109858	340.2	3.1	79596	306.6	3.9
2017-18	122881	430.7	3.5	96592	397.2	4.1
2018-19	142056	580.8	4.1	130907	590.2	4.5
2019-20	172493	821.8	4.8	172896	842.1	4.9
2020-21	218638	1194.3	5.5	206570	1076.0	5.2

Sources: (1) CER data base and NIEIR.
(2) Endeavour Energy Solar capacity and solar customers.xls ZSS data.

Figure 5.10: A schematic of NIEIR's quarterly PV and battery model



5.6 Modelling results for New South Wales and Endeavour Energy

Table 5.2 shows projections of New South Wales and Endeavour Energy PV installations to 2031-32. The New South Wales projections are prepared using the CER database while the Endeavour Energy projections were prepared using Endeavour Energy's data. The data in Table 5.2 are not comparable given the different sources of data underlying the projections.

Table 5.3 shows projections of cumulative customers by New South Wales LGA to 2031-32. These projections are used to drive the zone substation forecasts for Endeavour Energy using the LGA to zone substation mapping presented in Section 2 of this report.

Table 5.4 shows the annual and cumulative installations for Endeavour Energy to 2031-32 in terms of numbers, kW installed and average system size.

Table 5.2 New South Wales and Endeavour Energy PV installations – cumulative

	New South Wales			Endeavour Energy		
	Installations (no.)	Installations (kW)	Average size (kW)	Installations (no.)	Installations (kW)	Average size (kW)
2009-10	39617	66.8	1.7	2780	8.5	3.1
2010-11	157302	343.8	2.2	9404	28.0	3.0
2011-12	198035	446.8	2.3	22501	69.2	3.1
2012-13	239237	579.9	2.4	34511	110.8	3.2
2013-14	272048	721.7	2.7	42748	144.7	3.4
2014-15	308339	898.8	2.9	50687	181.3	3.6
2015-16	335554	1046.8	3.1	63462	237.7	3.7
2016-17	370249	1242.8	3.4	79596	306.6	3.9
2017-18	421724	1580.8	3.7	96592	397.2	4.1
2018-19	486858	2068.0	4.2	130907	590.2	4.5
2019-20	579763	2783.4	4.8	172896	842.1	4.9
2020-21	700482	3743.8	5.3	206570	1076.0	5.2
2021-22	791867	4374.0	5.5	239211	1292.3	5.4
2022-23	869086	4924.4	5.7	266957	1477.2	5.5
2023-24	940438	5461.9	5.8	292747	1650.2	5.6
2024-25	1010219	5999.4	5.9	318122	1821.6	5.7
2025-26	1074069	6460.9	6.0	341480	1979.7	5.8
2026-27	1138572	6913.9	6.1	365221	2140.9	5.9
2027-28	1202688	7361.0	6.1	388965	2302.7	5.9
2028-29	1267574	7811.2	6.2	413141	2468.1	6.0
2029-30	1335379	8285.6	6.2	438564	2642.9	6.0
2030-31	1409015	8799.1	6.2	466345	2834.9	6.1
2031-32	1484272	9321.2	6.3	494917	3033.3	6.1

Source: CER, NIEIR and Endeavour Energy.

Table 5.3	Cumulative PV installations by New South Wales LGAs in the Endeavour Energy region (number)											
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32
Blacktown	36552	41775	46220	50357	54432	58185	62003	65824	69715	73809	78282	82882
Blue Mountains	9208	9677	10071	10433	10785	11105	11427	11744	12064	12395	12753	13116
Camden	9946	11892	13613	15277	16979	18609	20330	22120	24014	26084	28434	30944
Campbelltown	17667	20225	22385	24379	26327	28106	29901	31683	33483	35360	37396	39471
Bankstown	10400	11617	12647	13599	14530	15382	16243	17098	17964	18869	19851	20855
Canterbury	5161	5789	6321	6814	7297	7740	8189	8635	9088	9561	10077	10604
Auburn	3143	3518	3845	4156	4470	4765	5072	5386	5714	6066	6460	6874
Holroyd	5819	6500	7075	7606	8126	8601	9081	9558	10040	10543	11089	11646
Fairfield	13817	15189	16341	17399	18427	19362	20300	21227	22158	23125	24168	25226
Goulburn Mulwaree	3465	3889	4249	4581	4906	5204	5505	5804	6107	6424	6768	7120
Hawksbury	7444	8597	9567	10460	11329	12121	12917	13705	14498	15323	16215	17121
Hornsby	11413	13289	14876	16342	17776	19088	20414	21731	23063	24455	25965	27508
Kiama	2924	3342	3696	4025	4347	4642	4941	5239	5542	5859	6203	6557
Lithgow	2340	2679	2965	3227	3482	3714	3948	4178	4410	4651	4911	5175
Liverpool	18696	21509	23912	26157	28376	30429	32524	34629	36781	39052	41544	44117
Mid Western Regional	3557	4036	4438	4807	5166	5492	5819	6142	6467	6804	7168	7537
Oberon	648	709	761	807	852	893	934	974	1013	1055	1099	1143
Parramatta	8807	9766	10587	11356	12119	12826	13550	14279	15027	15818	16688	17589
Penrith	20572	23738	26425	28919	31368	33619	35902	38181	40495	42923	45569	48283
Ryde	5009	5677	6246	6777	7301	7785	8278	8773	9278	9811	10394	10995
Shellharbour	7836	9097	10164	11151	12118	13004	13899	14790	15692	16635	17660	18707
Shoalhaven	15053	16931	18515	19976	21402	22705	24018	25320	26635	28006	29491	31004
The Hills Shire	19523	23022	26012	28808	31575	34135	36750	39379	42070	44912	48032	51255
Wingecarribee	6424	7281	8004	8672	9323	9918	10518	11113	11714	12340	13019	13711
Wondondilly	7054	8273	9306	10265	11206	12070	12946	13820	14707	15637	16651	17689
Wollongong	17522	20331	22693	24863	26974	28895	30825	32732	34650	36643	38793	40978

Table 5.4	Total installations Endeavour Energy – Annual and cumulative					
	Annual			Cumulative		
	Annual installations (no.)	Annual installations (kW)	Average size (kW)	Cumulative installations (no.)	Cumulative installations (kW)	Average size (kW)
2009-10	1992	5.8	2.9	2780	8.5	3.1
2010-11	6624	19.5	2.9	9404	28.0	3.0
2011-12	13098	41.2	3.1	22501	69.2	3.1
2012-13	12010	41.6	3.5	34511	110.8	3.2
2013-14	8237	33.9	4.1	42748	144.7	3.4
2014-15	7940	36.6	4.6	50687	181.3	3.6
2015-16	12775	56.5	4.4	63462	237.7	3.7
2016-17	16135	68.8	4.3	79596	306.6	3.9
2017-18	16996	90.6	5.3	96592	397.2	4.1
2018-19	34315	193.0	5.6	130907	590.2	4.5
2019-20	41990	251.8	6.0	172896	842.1	4.9
2020-21	33674	233.0	6.9	206570	1076.0	5.2
2021-22	32641	216.3	6.6	239211	1292.3	5.4
2022-23	27746	184.9	6.7	266957	1477.2	5.5
2023-24	25790	173.0	6.7	292747	1650.2	5.6
2024-25	25375	171.4	6.8	318122	1821.6	5.7
2025-26	23358	158.1	6.8	341480	1979.7	5.8
2026-27	23741	161.2	6.8	365221	2140.9	5.9
2027-28	23743	161.7	6.8	388965	2302.7	5.9
2028-29	24177	165.5	6.8	413141	2468.1	6.0
2029-30	25422	174.8	6.9	438564	2642.9	6.0
2030-31	27782	192.0	6.9	466345	2834.9	6.1
2031-32	28572	198.4	6.9	494917	3033.3	6.1

Figure 5.11 and Figure 5.12 show total annual PV installations to 2031-32 in terms of number and MW installed. Figure 5.13 shows total cumulative PV installations for Endeavour Energy to 2027-28 in terms of MW installed on a cumulative basis.

Forecasts of small-scale PV by zone substation for Endeavour Energy are presented in Tables 5.5 to 5.8.

Table 5.5 shows cumulative customers by zone substation to 2031-32. Table 5.6 shows cumulative capacity in terms of kWs installed by zone substation to 2031-32. Tables 5.7 and 5.8 show generation and in-house use by zone substation for Endeavour Energy. In-house usage is the sum of in-house use by standalone PV systems plus PV and battery storage systems.

Appendix A provides forecast of PV on a class basis – residential, commercial and industrial. It also provides a split of PV systems into standalone PV systems with no battery storage and PV systems with battery storage.

Figure 5.11: Endeavour Energy total annual PV installations (number)

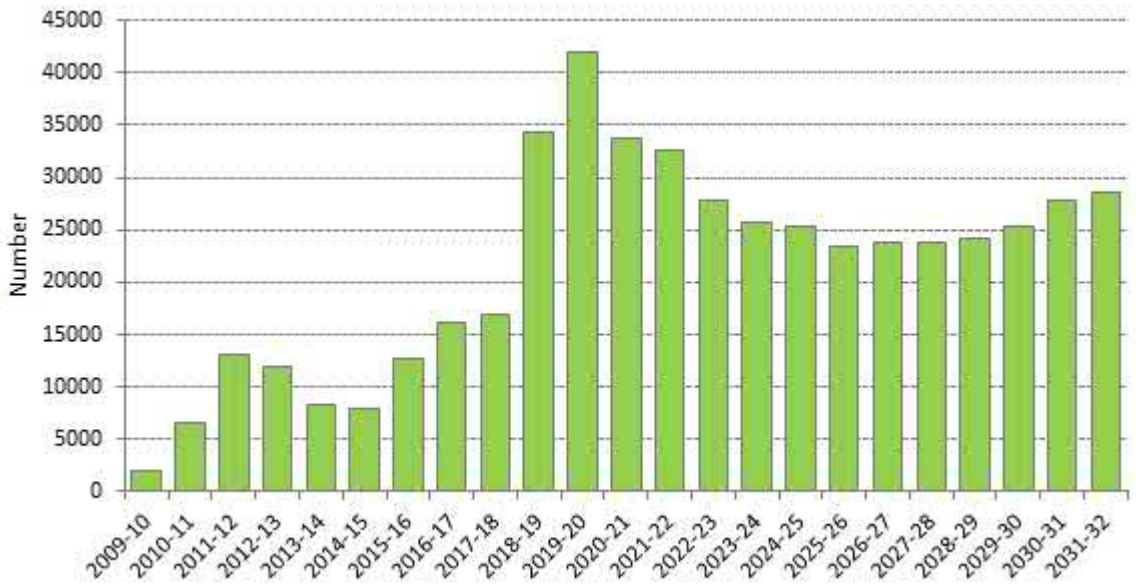


Figure 5.12: Endeavour Energy total annual PV installations (MW)

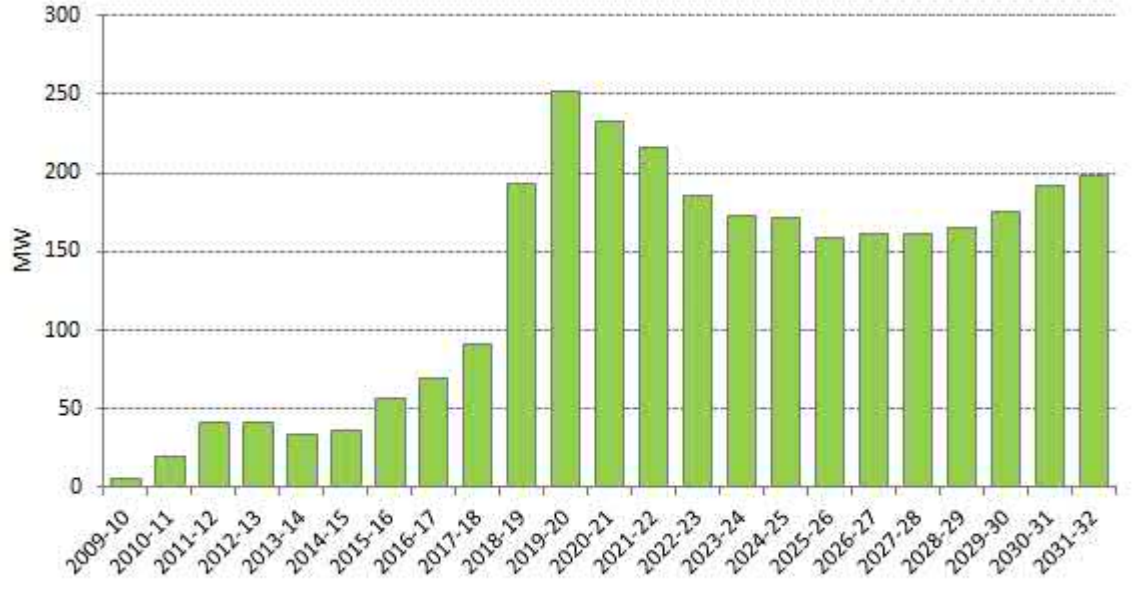


Figure 5.13: Endeavour Energy total cumulative PV installations (MW)

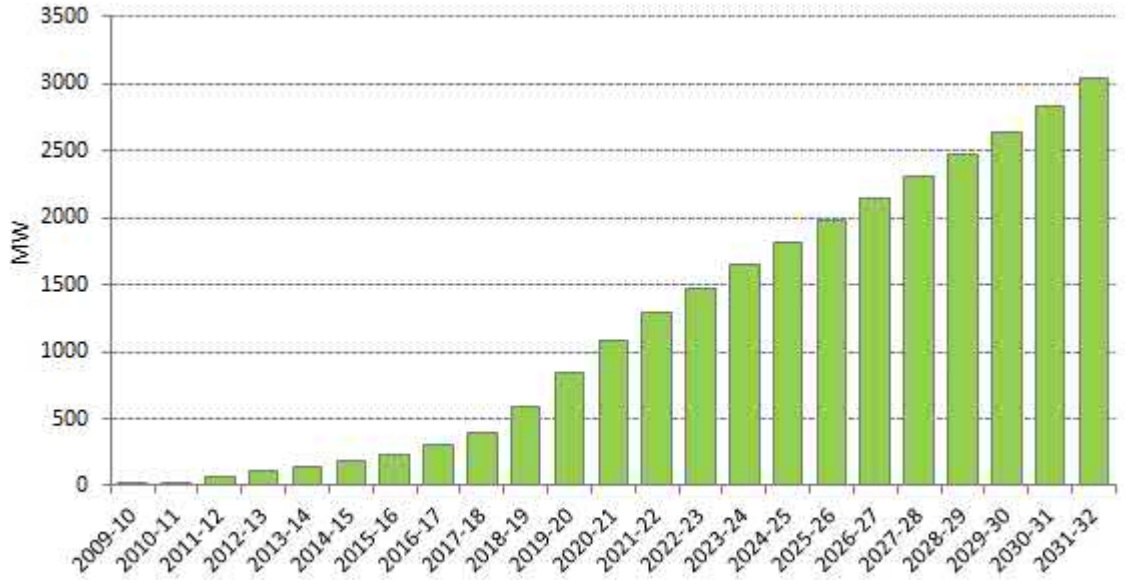


Figure 5.14: Average PV system size – new and system average – Endeavour Energy (kW)

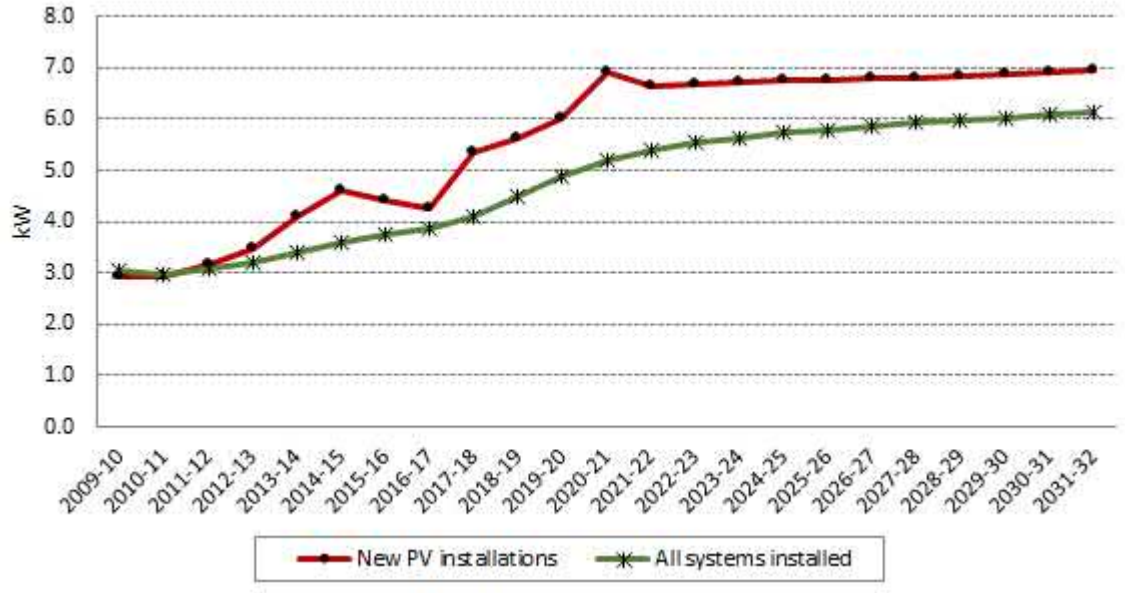


Table 5.5 Cumulative customers by zone substation – Endeavour Energy (no.)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	2159	2412	2629	2832	3033	3219	3409	3601	3797	4005	4234	4471
ALBION PARK	2968	3318	3614	3887	4153	4396	4640	4883	5128	5383	5660	5941
AMBARVALE	2008	2275	2501	2711	2917	3106	3299	3490	3685	3890	4113	4342
ANZAC VILLAGE	1613	1830	2016	2190	2362	2520	2682	2845	3012	3187	3380	3579
APPIN	465	588	692	788	883	969	1056	1142	1230	1321	1420	1522
ARNDELL PARK	864	991	1100	1201	1300	1392	1485	1578	1673	1773	1882	1994
BAULKHAM HILLS 11KV	1779	2008	2205	2388	2569	2736	2907	3078	3253	3438	3641	3850
BELLA VISTA	2702	3063	3371	3659	3942	4204	4471	4739	5012	5300	5616	5941
BERRY	968	1110	1231	1342	1451	1550	1650	1750	1851	1956	2070	2186
BLACKHEATH	682	745	797	846	893	936	979	1021	1064	1108	1156	1205
BLACKMANS FLAT	252	351	434	511	586	654	723	791	860	932	1009	1088
BLAXLAND	1858	1953	2032	2106	2177	2242	2307	2371	2436	2503	2575	2649
BOLONG	188	227	260	290	319	346	374	401	428	456	487	518
BOMADERRY	2028	2257	2450	2628	2801	2960	3120	3278	3439	3606	3786	3971
BONNYRIGG	2260	2567	2829	3071	3309	3528	3750	3971	4196	4432	4689	4953
BOSSLEY PARK	1722	1858	1972	2077	2178	2271	2364	2456	2548	2643	2747	2851
BOW BOWING	904	1047	1168	1280	1389	1489	1590	1690	1791	1896	2010	2127
BOWRAL	1344	1609	1833	2040	2241	2426	2612	2796	2983	3177	3388	3602
BRINGELLY	367	531	674	809	944	1070	1201	1335	1473	1622	1787	1960
BULLI	1210	1570	1875	2158	2436	2691	2950	3208	3471	3747	4049	4359
BYLONG	16	26	34	42	50	56	63	70	77	84	92	99
CABRAMATTA	686	817	929	1032	1134	1227	1321	1415	1511	1611	1721	1833
CAMBRIDGE PARK	2319	2636	2906	3156	3402	3628	3857	4086	4319	4563	4828	5101
CAMPBELLTOWN	1481	1776	2029	2267	2503	2722	2947	3175	3410	3659	3935	4223
CANLEY VALE	1897	2148	2359	2555	2746	2921	3097	3272	3449	3634	3834	4038
CARRAMAR	600	740	858	967	1072	1168	1265	1360	1456	1555	1662	1771
CASTLE HILL	673	1107	1474	1814	2146	2450	2758	3064	3373	3697	4048	4407
CASULA	2039	2424	2750	3053	3349	3622	3897	4172	4451	4743	5061	5387
CATTAI	524	652	760	860	957	1046	1136	1226	1316	1410	1513	1617
CAWDOR	1154	1423	1656	1877	2100	2308	2525	2746	2976	3224	3500	3791
CHERITON AVENUE	1296	1597	1855	2098	2340	2565	2795	3029	3269	3524	3805	4098
CHIPPING NORTON	1029	1147	1249	1344	1438	1526	1616	1707	1801	1900	2010	2124
CLAREMONT MEADOWS	1318	1622	1882	2125	2366	2589	2817	3046	3282	3530	3804	4087
CORRIMAL	1456	1720	1942	2145	2344	2524	2705	2884	3064	3251	3453	3659
CRANEBROOK	1161	1392	1589	1771	1949	2113	2279	2445	2613	2789	2980	3176
CULBURRA	1072	1240	1382	1513	1640	1757	1875	1991	2109	2232	2365	2501
DAPTO	3580	3960	4281	4576	4864	5126	5391	5653	5916	6191	6488	6791
DARKES FOREST	7	44	75	104	132	157	183	209	235	262	291	321
DOONSIDE	4159	4792	5330	5832	6325	6780	7243	7706	8178	8674	9216	9774
DUNDAS	1612	1966	2266	2546	2820	3072	3328	3584	3844	4116	4414	4719
EAST RICHMOND	803	965	1102	1228	1352	1465	1578	1692	1806	1925	2054	2186
EASTERN CREEK	90	105	118	131	143	154	166	177	189	201	215	229
EDMONDSON PARK	566	720	850	971	1090	1199	1309	1419	1531	1648	1775	1905
EMU PLAINS	1500	1627	1735	1835	1932	2020	2110	2198	2288	2381	2482	2585
FAIRFIELD	908	999	1076	1147	1216	1279	1342	1405	1468	1534	1604	1677
FIGTREE	2016	2329	2593	2836	3071	3286	3501	3714	3929	4151	4392	4636
GERRINGONG	715	782	839	891	943	990	1037	1085	1133	1183	1237	1293
GLENMORE PARK	2600	2833	3031	3215	3395	3561	3729	3897	4067	4246	4441	4641
GLENORIE	297	357	408	456	504	547	592	637	682	730	783	838
GLOSSODIA	748	890	1010	1120	1227	1325	1423	1520	1618	1720	1831	1943
GRANVILLE	775	926	1055	1176	1296	1406	1519	1632	1748	1870	2004	2143
GREYSTANES	1042	1172	1283	1385	1487	1580	1675	1770	1867	1969	2081	2196
HARTLEY VALE	39	44	48	53	57	60	64	68	72	75	79	84
HAZELBROOK	1149	1221	1281	1336	1389	1438	1487	1536	1584	1635	1689	1745
HELENSBURGH	595	684	759	828	895	956	1018	1078	1140	1203	1271	1341

Table 5.5 Cumulative customers by zone substation – Endeavour Energy (no.) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	3192	3580	3913	4222	4529	4812	5100	5390	5687	5999	6342	6696
HOLROYD	1901	2305	2649	2971	3288	3580	3879	4178	4483	4806	5158	5522
HOMEPRIDE	625	897	1130	1348	1563	1762	1964	2168	2376	2596	2837	3086
HORSLEY PARK	250	280	305	328	350	371	392	413	434	456	480	505
HUNTINGWOOD	317	356	389	419	449	476	504	531	559	588	619	652
HUSKISSON	2089	2382	2630	2858	3082	3285	3491	3694	3900	4114	4347	4583
ILFORD HALL	47	63	78	91	104	115	127	138	150	162	175	188
INNER HARBOUR	16	16	17	17	17	17	17	18	18	18	18	18
JAMBEROO	268	319	362	402	442	478	514	550	587	626	667	710
JASPER RD	1807	2020	2202	2372	2540	2696	2855	3015	3179	3351	3541	3737
JORDAN SPRINGS	1318	1491	1637	1773	1906	2028	2152	2276	2401	2532	2674	2820
KANDOS	327	514	671	816	956	1083	1211	1338	1465	1597	1739	1883
KANGAROO VALLEY	215	263	304	342	379	412	446	480	514	549	588	627
KATOOMBA	1222	1324	1410	1489	1566	1636	1707	1777	1848	1921	2001	2082
KELLYVILLE	1190	1349	1486	1613	1740	1856	1976	2095	2218	2347	2489	2635
KEMBLA GRANGE	479	566	639	707	773	834	896	957	1019	1084	1155	1228
KEMPS CREEK	338	420	490	555	620	679	739	800	861	926	997	1070
KENNY STREET	98	105	111	116	122	126	131	136	141	146	151	157
KENTHURST	998	1240	1447	1641	1832	2008	2189	2370	2554	2750	2964	3184
KENTLYN	2976	3391	3742	4066	4384	4676	4970	5263	5559	5869	6205	6549
KIAMA	1610	1821	2001	2167	2330	2479	2631	2782	2935	3096	3270	3449
KINGSWOOD	1971	2394	2754	3088	3416	3717	4023	4328	4638	4963	5317	5681
KURRAJONG	910	1087	1237	1375	1509	1632	1755	1877	2000	2128	2267	2408
LEABONS LANE	1102	1340	1543	1732	1919	2090	2265	2439	2617	2804	3009	3219
LENNOX	290	404	501	592	682	765	850	935	1022	1114	1215	1319
LITHGOW	1372	1593	1780	1951	2118	2270	2422	2573	2724	2881	3051	3224
LIVERPOOL 11KV	1569	1927	2234	2519	2802	3063	3329	3596	3869	4157	4473	4799
LUDDENHAM	266	397	510	617	724	823	926	1030	1138	1254	1382	1516
MACQUARIE FIELDS	2619	3096	3499	3871	4235	4567	4902	5235	5571	5922	6302	6690
MALDON	1411	1745	2029	2293	2552	2791	3033	3275	3522	3781	4064	4354
MAMRE	2453	2734	2973	3196	3414	3615	3819	4023	4230	4448	4686	4930
MARAYONG	1075	1310	1511	1697	1881	2050	2222	2395	2570	2755	2956	3164
MARSDEN PARK	1303	1426	1531	1628	1723	1810	1898	1986	2075	2168	2269	2373
MEADOW FLAT	100	116	130	143	155	167	178	189	201	212	225	238
MINTO	4184	4583	4920	5232	5536	5813	6094	6372	6653	6946	7264	7588
MITTAGONG	1665	1878	2059	2228	2394	2546	2701	2856	3014	3179	3360	3546
MOOREBANK	651	772	875	972	1067	1155	1245	1335	1427	1524	1630	1740
MOSS VALE	1432	1666	1864	2046	2224	2387	2551	2714	2878	3049	3235	3425
MOUNT OUSLEY	991	1174	1328	1470	1607	1733	1858	1983	2108	2238	2378	2520
MUNGERIE PARK	5675	6390	7000	7568	8128	8645	9170	9697	10234	10799	11418	12054
NARELLAN	3996	4389	4735	5066	5402	5722	6057	6403	6767	7161	7607	8080
NEPEAN 11KV	2828	3247	3615	3968	4328	4669	5028	5399	5789	6213	6692	7201
NEWTON	1178	1286	1378	1463	1548	1625	1704	1783	1864	1949	2041	2137
NORTH EASTERN CREEK	68	79	88	97	106	114	122	130	139	148	157	167
NORTH LEPPINGTON	175	269	350	426	501	571	642	714	788	866	952	1042
NORTH PARRAMATTA	700	830	943	1048	1152	1248	1347	1447	1549	1657	1776	1899
NORTH RICHMOND	724	858	972	1076	1178	1271	1365	1458	1552	1650	1756	1865
NORTH ROCKS	900	1035	1151	1260	1367	1466	1568	1670	1775	1885	2006	2132
NORTH WARRAGAMBA	706	906	1075	1233	1388	1531	1677	1822	1970	2126	2296	2471
NORTH WOLLONGONG	357	460	546	626	703	774	845	915	985	1058	1137	1217
NORTHMEAD	892	1054	1193	1323	1452	1571	1692	1815	1940	2072	2217	2367
NOWRA	1510	1776	2001	2208	2410	2595	2782	2967	3154	3349	3560	3775
OAKDALE	168	252	323	390	455	516	577	638	701	767	838	912
ORAN PARK	2049	2576	3040	3485	3938	4368	4820	5287	5778	6311	6914	7554
PARKLEA	6330	6900	7387	7841	8291	8706	9131	9557	9994	10454	10961	11483
PENRITH 11KV	611	776	916	1047	1175	1292	1412	1531	1652	1779	1917	2059
PLUMPTON	2722	3120	3459	3775	4085	4371	4662	4953	5250	5562	5903	6253

Table 5.5 Cumulative customers by zone substation – Endeavour Energy (no.) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	409	517	608	692	775	849	925	999	1075	1153	1238	1325
PORT KEMBLA	930	1200	1427	1637	1842	2029	2218	2405	2594	2790	3003	3220
PORTLAND	356	394	426	456	485	511	537	563	590	617	646	676
PRESTONS	2716	2991	3228	3451	3672	3878	4089	4303	4524	4758	5016	5285
PROSPECT	1232	1316	1388	1455	1522	1583	1646	1709	1774	1842	1917	1994
QUAKERS HILL	3142	3606	4001	4369	4732	5065	5405	5745	6091	6456	6854	7264
QUARRIES	653	745	824	898	971	1038	1106	1174	1244	1317	1398	1480
RINGWOOD	733	818	890	957	1022	1081	1141	1201	1261	1323	1391	1460
RIVERSTONE	1703	1931	2124	2304	2481	2643	2807	2972	3138	3313	3504	3700
ROBERTSON	398	527	636	738	839	932	1026	1121	1217	1318	1429	1542
ROOTY HILL	2755	3134	3457	3758	4054	4326	4604	4881	5164	5461	5786	6120
ROSEHILL	177	242	297	349	401	448	497	545	595	648	706	766
RUSSELL VALE	1295	1548	1761	1957	2148	2322	2496	2668	2841	3021	3215	3413
RYDALMERE	1275	1547	1779	1997	2211	2410	2613	2816	3024	3244	3485	3734
SCHOFIELDS	2780	3171	3503	3813	4118	4399	4685	4971	5262	5568	5903	6248
SEVEN HILLS	1056	1196	1315	1426	1535	1636	1738	1841	1946	2056	2176	2300
SHELLHARBOUR	2524	2943	3298	3627	3949	4245	4544	4841	5143	5458	5802	6153
SHERWOOD	1137	1293	1426	1550	1671	1783	1896	2009	2124	2244	2376	2511
SMITHFIELD	2190	2412	2599	2771	2938	3089	3242	3392	3544	3701	3870	4042
SOUTH GRANVILLE	700	876	1025	1164	1300	1426	1553	1681	1811	1947	2096	2249
SOUTH LEPPINGTON	1487	1750	1973	2180	2384	2572	2763	2954	3149	3354	3578	3808
SOUTH MARSDEN PARK	345	475	588	694	800	899	1001	1105	1212	1327	1455	1588
SOUTH NOWRA	419	480	531	579	625	667	710	752	795	839	888	937
SOUTH WINDSOR	1592	1839	2049	2243	2432	2606	2782	2957	3134	3319	3520	3725
SOUTH WOLLONGONG	304	374	432	486	539	587	635	682	730	779	833	887
SPRINGWOOD	2138	2269	2379	2480	2578	2668	2758	2847	2936	3029	3129	3230
ST MARYS	1712	2069	2372	2654	2930	3185	3444	3702	3964	4240	4541	4849
SUSSEX INLET	673	852	1004	1145	1283	1410	1538	1667	1797	1933	2081	2233
TAHMOOR	1507	1875	2189	2480	2766	3029	3296	3563	3835	4120	4431	4750
THE OAKS	450	547	631	711	791	866	943	1022	1105	1193	1292	1395
TOMERONG	1192	1284	1363	1435	1506	1570	1635	1700	1765	1833	1906	1981
ULLADULLA	2732	3105	3420	3711	3994	4253	4514	4773	5034	5306	5601	5901
UNANDERRA	463	577	673	762	848	927	1005	1083	1161	1243	1330	1419
WARILLA	1847	2181	2464	2726	2982	3216	3454	3690	3928	4178	4449	4726
WENTWORTH FALLS	751	823	884	941	997	1048	1099	1151	1203	1257	1317	1377
WERRINGTON	1442	1780	2068	2336	2599	2841	3086	3332	3581	3843	4129	4422
WEST CASTLE HILL	1321	1547	1740	1920	2099	2264	2432	2601	2775	2958	3158	3366
WEST LIVERPOOL 11KV	1701	1991	2239	2470	2698	2908	3122	3337	3557	3788	4041	4302
WEST PARRAMATTA	143	178	207	235	262	287	313	339	366	394	425	457
WEST PENNANT HILLS	1549	1755	1931	2096	2259	2410	2564	2719	2877	3044	3228	3417
WEST WETHERILL PARK 11KV	177	179	181	183	185	187	189	191	193	195	197	200
WEST WOLLONGONG	738	909	1052	1184	1313	1429	1547	1663	1779	1900	2031	2164
WESTMEAD	118	139	158	175	192	208	224	240	257	274	294	314
WETHERILL PARK	306	318	328	338	347	355	363	372	380	389	398	408
WHALAN	1468	1613	1736	1851	1965	2069	2175	2281	2389	2503	2628	2755
WILTON	367	416	459	498	537	572	608	644	680	718	760	802
WINDSOR	720	875	1005	1125	1243	1350	1458	1566	1674	1787	1909	2034
WISEMANS	188	275	350	418	485	546	607	668	730	794	863	934
WOMBARRA	673	774	859	937	1013	1082	1151	1220	1289	1361	1438	1517
WOODPARK	145	182	213	242	271	298	325	352	379	408	440	473
YATTE YATTAH	369	529	665	792	917	1032	1149	1265	1384	1509	1646	1786
YENNORA	927	1106	1257	1396	1531	1654	1778	1900	2023	2151	2289	2429
TOTAL	**206570**	**239211**	**266957**	**292747**	**318122**	**341480**	**365221**	**388965**	**413141**	**438564**	**466345**	**494917**

Table 5.6 Cumulative capacity by zone substation – Endeavour Energy (kW)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
ABBOTSBURY	10601	12063	13325	14517	15708	16818	17958	19112	20300	21565	22965	24422
ALBION PARK	16223	18281	20031	21657	23256	24646	26053	27454	28855	30321	31916	33548
AMBARVALE	8904	10535	11933	13234	14524	15715	16926	18141	19381	20689	22121	23598
ANZAC VILLAGE	7835	9078	10150	11161	12169	13106	14067	15036	16032	17088	18252	19459
APPIN	2662	3432	4088	4700	5303	5830	6365	6899	7441	8011	8631	9267
ARNDELL PARK	4127	4993	5738	6437	7132	7776	8433	9095	9772	10487	11273	12085
BAULKHAM HILLS 11KV	8278	9787	11088	12313	13535	14670	15834	17008	18213	19491	20899	22359
BELLA VISTA	14519	17077	19277	21346	23404	25313	27266	29233	31250	33383	35730	38159
BERRY	5178	6206	7049	7835	8609	9311	10023	10733	11453	12209	13032	13875
BLACKHEATH	2847	3205	3509	3791	4067	4320	4575	4828	5083	5350	5639	5934
BLACKMANS FLAT	1262	1926	2491	3017	3535	4009	4490	4968	5453	5960	6512	7077
BLAXLAND	8583	9276	9864	10409	10943	11412	11886	12356	12831	13326	13863	14410
BOLONG	910	1166	1384	1587	1786	1970	2155	2340	2527	2724	2937	3156
BOMADERRY	10192	11752	13077	14310	15522	16633	17757	18877	20012	21199	22491	23812
BONNYRIGG	9837	11595	13100	14509	15896	17175	18479	19786	21119	22525	24063	25649
BOSSLEY PARK	8948	9919	10741	11501	12245	12924	13608	14286	14971	15683	16455	17241
BOW BOWING	4500	5234	5858	6438	7008	7531	8060	8586	9120	9679	10287	10909
BOWRAL	6970	9001	10729	12337	13920	15334	16765	18192	19639	21155	22804	24493
BRINGELLY	2628	3777	4778	5733	6696	7603	8545	9508	10512	11592	12799	14071
BULLI	5755	7926	9783	11521	13243	14832	16406	17986	19599	21301	23167	25094
BYLONG	74	112	144	174	203	230	257	284	312	340	371	402
CABRAMATTA	3143	4112	4942	5719	6489	7200	7924	8650	9390	10170	11024	11904
CAMBRIDGE PARK	12295	14185	15801	17312	18808	20189	21594	23002	24439	25951	27606	29310
CAMPBELLTOWN	7287	9297	11036	12682	14331	15872	17460	19073	20742	22523	24502	26571
CANLEY VALE	8079	9661	11008	12263	13501	14638	15790	16939	18106	19330	20664	22031
CARRAMAR	2752	3652	4415	5123	5818	6453	7094	7730	8373	9043	9770	10511
CASTLE HILL	3645	6630	9177	11553	13900	16057	18248	20435	22660	24995	27543	30158
CASULA	10134	12323	14194	15944	17675	19271	20894	22520	24176	25919	27825	29786
CATTAI	3911	5110	6131	7083	8020	8881	9754	10625	11508	12435	13444	14478
CAWDOR	6303	8253	9960	11592	13247	14808	16436	18106	19852	21736	23850	26082
CHERITON AVENUE	6946	9048	10867	12589	14312	15922	17581	19264	21003	22857	24912	27057
CHIPPING NORTON	5274	6030	6684	7302	7922	8501	9097	9702	10326	10991	11729	12498
CLAREMONT MEADOWS	7338	9880	12074	14146	16217	18143	20123	22126	24187	26380	28804	31325
CORRIMAL	7136	8710	10044	11280	12492	13599	14715	15823	16942	18108	19373	20662
CRANEBROOK	6720	8368	9776	11093	12395	13595	14816	16039	17284	18594	20027	21500
CULBURRA	4601	5733	6698	7597	8483	9296	10119	10940	11773	12645	13595	14568
DAPTO	17987	20418	22485	24405	26293	28023	29772	31512	33274	35117	37119	39166
DARKES FOREST	77	240	379	508	635	752	870	987	1107	1232	1368	1507
DOONSIDE	17442	20820	23723	26450	29161	31670	34235	36813	39452	42241	45303	48467
DUNDAS	7280	9480	11364	13130	14882	16499	18148	19803	21492	23274	25226	27238
EAST RICHMOND	4607	5317	5919	6478	7028	7531	8041	8549	9063	9601	10186	10785
EASTERN CREEK	574	614	647	678	709	738	767	796	826	857	892	927
EDMONDSON PARK	3959	4973	5840	6651	7455	8195	8949	9703	10472	11282	12167	13078
EMU PLAINS	7478	8296	8992	9639	10277	10862	11455	12045	12643	13270	13952	14651
FAIRFIELD	4223	4728	5157	5555	5945	6302	6663	7022	7384	7763	8174	8594
FIGTREE	10304	12094	13610	15014	16390	17647	18915	20172	21442	22766	24200	25663
GERRINGONG	3409	3722	3990	4239	4486	4712	4942	5172	5406	5652	5919	6194
GLENMORE PARK	14712	16436	17913	19295	20666	21931	23220	24512	25830	27220	28742	30309
GLENORIE	2272	2752	3166	3554	3941	4300	4668	5038	5417	5819	6262	6720
GLOSSODIA	4783	6094	7208	8243	9260	10192	11134	12071	13019	14010	15086	16186
GRANVILLE	3581	4629	5532	6383	7231	8019	8828	9643	10481	11370	12349	13366
GREYSTANES	4552	5227	5807	6351	6893	7395	7907	8423	8951	9510	10124	10758
HARTLEY VALE	168	190	209	226	243	259	274	290	306	322	340	358
HAZELBROOK	4702	5132	5496	5834	6166	6469	6774	7077	7384	7704	8050	8403
HELENSBURGH	2949	3481	3933	4351	4762	5137	5515	5890	6270	6665	7094	7532

Table 5.6 Cumulative capacity by zone substation – Endeavour Energy (kW) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
HINCHINBROOK	16984	19312	21316	23202	25079	26821	28606	30404	32250	34205	36357	38587
HOLROYD	9870	12612	14970	17188	19396	21443	23539	25651	27816	30109	32633	35246
HOMEPRIDE	2570	3719	4705	5630	6549	7400	8270	9147	10044	10994	12038	13118
HORSLEY PARK	2317	2456	2574	2684	2793	2893	2994	3095	3197	3305	3422	3542
HUNTINGWOOD	1648	1939	2186	2416	2642	2857	3075	3292	3512	3743	3994	4251
HUSKISSON	10381	12389	13991	15478	16939	18278	19632	20979	22343	23770	25321	26907
ILFORD HALL	267	391	496	593	688	775	862	949	1036	1128	1226	1327
INNER HARBOUR	38	40	42	43	44	45	46	48	49	50	51	52
JAMBEROO	1542	1920	2244	2546	2845	3116	3391	3666	3946	4240	4561	4892
JASPER RD	8160	9306	10294	11226	12156	13020	13908	14804	15724	16702	17779	18897
JORDAN SPRINGS	7598	8665	9578	10432	11277	12056	12848	13641	14449	15299	16228	17184
KANDOS	1581	2851	3928	4927	5906	6800	7702	8597	9501	10443	11464	12505
KANGAROO VALLEY	1036	1295	1515	1720	1922	2102	2284	2466	2650	2843	3053	3268
KATOOMBA	5218	5835	6359	6846	7324	7762	8205	8645	9091	9557	10064	10582
KELLYVILLE	6280	7388	8345	9248	10149	10987	11847	12715	13607	14553	15597	16680
KEMBLA GRANGE	3009	3629	4158	4652	5142	5592	6050	6508	6976	7468	8006	8560
KEMPS CREEK	2530	3077	3542	3975	4401	4796	5199	5603	6018	6455	6936	7432
KENNY STREET	597	620	640	658	676	692	709	725	741	758	776	794
KENTHURST	7973	10490	12579	14545	16504	18321	20184	22061	23988	26029	28276	30605
KENTLYN	14335	17113	19357	21449	23512	25409	27334	29256	31210	33260	35496	37791
KIAMA	7892	9205	10328	11377	12415	13372	14346	15320	16313	17357	18499	19673
KINGSWOOD	10078	13227	15918	18432	20917	23209	25541	27876	30256	32761	35500	38319
KURRAJONG	5419	6881	8124	9279	10416	11458	12511	13559	14621	15731	16938	18172
LEABONS LANE	4762	6160	7361	8490	9612	10652	11714	12782	13876	15031	16300	17611
LENNOX	1300	2152	2756	3322	3881	4399	4927	5459	6003	6577	7208	7860
LITHGOW	7029	8427	9611	10709	11787	12771	13764	14750	15745	16784	17909	19058
LIVERPOOL 11KV	8091	8918	9623	10280	10927	11525	12134	12745	13368	14025	14745	15486
LUDDENHAM	2057	3272	4328	5325	6320	7254	8223	9211	10238	11340	12570	13862
MACQUARIE FIELDS	12899	15845	18350	20569	22754	24757	26786	28807	30857	33004	35340	37731
MALDON	8576	11722	14417	16807	19177	21367	23600	25842	28133	30549	33199	35933
MAMRE	12070	13910	15489	16968	18436	19777	21144	22516	23918	25397	27018	28691
MARAYONG	5084	6892	8443	9898	11259	12518	13804	15096	16418	17814	19346	20927
MARSDEN PARK	9466	10233	10882	11484	12073	12616	13168	13721	14284	14876	15524	16190
MEADOW FLAT	536	668	779	883	980	1069	1158	1247	1337	1431	1532	1635
MINTO	19950	22386	24460	26391	28293	30039	31807	33570	35359	37233	39273	41363
MITTAGONG	8397	9925	11234	12461	13678	14786	15916	17050	18209	19431	20771	22154
MOOREBANK	3730	4786	5695	6548	7398	8186	8992	9805	10638	11521	12492	13497
MOSS VALE	8129	9868	11347	12721	14073	15312	16566	17815	19081	20406	21847	23322
MOUNT OUSLEY	4986	6275	7368	8380	9373	10280	11195	12103	13020	13977	15014	16071
MUNGERIE PARK	35129	39743	43706	47427	51124	54548	58049	61569	65173	68983	73168	77495
NARELLAN	23161	26018	28542	30981	33475	35853	38357	40953	43691	46675	50055	53657
NEPEAN 11KV	17085	20530	23581	26536	29565	32381	35352	38436	41695	45253	49288	53596
NEWTON	6618	7428	8124	8776	9425	10025	10638	11254	11884	12549	13280	14034
NORTH EASTERN CREEK	404	442	475	505	535	563	592	620	649	680	713	748
NORTH LEPPINGTON	1124	1890	2553	3180	3794	4367	4957	5553	6169	6824	7549	8304
NORTH PARRAMATTA	3849	4798	5618	6393	7168	7908	8669	9438	10231	11073	12003	12970
NORTH RICHMOND	4662	5921	6992	7987	8967	9865	10774	11678	12596	13556	14600	15668
NORTH ROCKS	4067	4885	5591	6258	6925	7546	8183	8827	9490	10194	10971	11778
NORTH WARRAGAMBA	4505	6262	7771	9187	10593	11883	13201	14525	15880	17312	18884	20508
NORTH WOLLONGONG	2145	3077	3863	4588	5192	5742	6296	6845	7398	7973	8596	9230
NORTHMEAD	4091	5107	5983	6810	7636	8404	9192	9988	10807	11675	12634	13629
NOWRA	7334	9230	10844	12346	13825	15182	16557	17927	19316	20771	22355	23976
OAKDALE	893	1422	1875	2300	2722	3112	3511	3911	4321	4753	5228	5719
ORAN PARK	13483	18102	22198	26170	30246	34142	38253	42522	47035	51962	57552	63521
PARKLEA	34900	38613	41811	44823	47825	50613	53368	56149	59006	62037	65379	68848
PENRITH 11KV	2899	4324	5537	6667	7781	8807	9715	10623	11548	12520	13581	14672
PLUMPTON	12004	14159	16009	17745	19470	21066	22696	24334	26010	27780	29723	31730

Table 5.6 Cumulative capacity by zone substation – Endeavour Energy (kW) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	1881	2505	3033	3522	4002	4442	4885	5326	5773	6239	6745	7262
PORT KEMBLA	4572	6168	7525	8786	10027	11165	12317	13463	14625	15841	17163	18516
PORTLAND	1932	2254	2527	2781	3029	3256	3485	3713	3942	4182	4442	4706
PRESTONS	14190	16088	17733	19293	20858	22340	23870	25424	27030	28745	30649	32637
PROSPECT	5786	6347	6830	7286	7741	8169	8608	9051	9506	9990	10523	11076
QUAKERS HILL	15368	18106	20458	22667	24863	26895	28972	31061	33199	35457	37938	40501
QUARRIES	2966	3472	3907	4316	4722	5098	5483	5870	6266	6685	7146	7622
RINGWOOD	3751	4411	4973	5496	6011	6483	6962	7438	7922	8428	8979	9543
RIVERSTONE	11191	12395	13421	14378	15321	16189	17071	17954	18852	19797	20828	21889
ROBERTSON	2375	3112	3745	4339	4930	5477	6037	6599	7174	7782	8450	9140
ROOTY HILL	14146	16628	18759	20758	22744	24582	26459	28345	30275	32313	34550	36859
ROSEHILL	769	1074	1336	1582	1828	2055	2289	2524	2766	3021	3303	3595
RUSSELL VALE	6230	7898	9313	10623	11908	13083	14267	15443	16630	17869	19211	20580
RYDALMERE	6589	8174	9540	10826	12109	13300	14521	15753	17018	18359	19837	21369
SCHOFIELDS	17795	21096	23931	26594	29241	31690	34193	36709	39284	42004	44992	48078
SEVEN HILLS	5457	5958	6387	6789	7188	7556	7932	8309	8695	9103	9549	10010
SHELLHARBOUR	12453	15245	17629	19852	22048	24069	26121	28173	30260	32453	34847	37305
SHERWOOD	5536	6632	7568	8442	9306	10102	10913	11725	12553	13426	14381	15365
SMITHFIELD	10763	12216	13447	14588	15707	16756	17813	18862	19922	21026	22222	23442
SOUTH GRANVILLE	3338	4366	5249	6076	6899	7659	8435	9215	10012	10854	11779	12733
SOUTH LEPPINGTON	9906	12261	14279	16171	18049	19785	21557	23338	25161	27086	29201	31387
SOUTH MARSDEN PARK	2440	3772	4921	6005	7089	8106	9161	10237	11355	12555	13894	15300
SOUTH NOWRA	2604	2979	3297	3592	3882	4148	4417	4684	4955	5238	5546	5861
SOUTH WINDSOR	10010	12232	14111	15849	17551	19116	20705	22292	23905	25599	27447	29345
SOUTH WOLLONGONG	1720	2195	2597	2967	3329	3659	3990	4319	4650	4995	5368	5747
SPRINGWOOD	9612	10499	11252	11950	12635	13261	13892	14519	15153	15813	16530	17260
ST MARYS	7872	10087	11983	13758	15516	17140	18794	20453	22146	23930	25885	27898
SUSSEX INLET	2943	3798	4529	5213	5891	6504	7129	7754	8392	9064	9798	10554
TAHMOOR	8001	11064	13689	16149	18588	20841	23139	25445	27800	30285	33008	35818
THE OAKS	2764	3563	4262	4930	5607	6246	6910	7592	8303	9071	9931	10838
TOMERONG	5583	6103	6546	6959	7365	7738	8118	8497	8882	9284	9722	10171
ULLADULLA	12705	14809	16597	18259	19893	21390	22905	24413	25941	27539	29277	31055
UNANDERRA	2883	3396	3830	4233	4627	4987	5350	5711	6075	6454	6865	7284
WARILLA	8488	10596	12394	13972	15531	16964	18419	19873	21352	22904	24598	26337
WENTWORTH FALLS	3194	3648	4036	4398	4755	5063	5376	5689	6008	6342	6708	7084
WERRINGTON	7592	9643	11396	13034	14655	16150	17673	18961	20277	21663	23180	24744
WEST CASTLE HILL	7107	8577	9846	11043	12237	13347	14486	15635	16816	18070	19451	20885
WEST LIVERPOOL 11KV	7744	9695	11369	12941	14501	15947	17425	18913	20436	22047	23817	25647
WEST PARRAMATTA	545	687	808	922	1034	1161	1292	1423	1558	1700	1856	2018
WEST PENNANT HILLS	7982	9321	10475	11564	12650	13659	14695	15740	16814	17953	19210	20512
WEST WETHERILL PARK 11KV	1706	1745	1778	1808	1832	1854	1877	1899	1922	1946	1972	1999
WEST WOLLONGONG	3534	4487	5295	6046	6783	7463	8149	8830	9518	10237	11016	11812
WESTMEAD	314	428	526	601	677	747	819	891	966	1045	1132	1222
WETHERILL PARK	2030	2169	2286	2393	2498	2594	2691	2787	2884	2985	3094	3206
WHALAN	7139	8058	8847	9588	10323	11004	11699	12397	13111	13865	14693	15548
WILTON	2054	2404	2704	2984	3249	3493	3741	3990	4244	4511	4803	5104
WINDSOR	4914	6057	7021	7910	8778	9453	10136	10816	11506	12228	13014	13819
WISEMANS	1093	1502	1848	2169	2484	2739	2997	3253	3513	3785	4080	4381
WOMBARRA	3063	3679	4200	4684	5159	5593	6031	6466	6905	7364	7861	8368
WOODPARK	1129	1294	1433	1561	1685	1800	1918	2035	2155	2282	2421	2564
YATTE YATTAH	1670	2192	2641	3062	3480	3867	4262	4659	5065	5493	5964	6450
YENNORA	4426	5487	6388	7224	8045	8796	9554	10307	11068	11863	12725	13605
TOTAL	**1076042**	**1292300**	**1477217**	**1650186**	**1821582**	**1979715**	**2140913**	**2302653**	**2468113**	**2642929**	**2834892**	**3033276**

Table 5.7 Total generation by zone substation – Endeavour Energy (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	13.6	15.5	17.1	18.7	20.2	21.6	23.1	24.6	26.1	27.7	29.5	31.4
ALBION PARK	20.7	23.3	25.6	27.6	29.7	31.5	33.3	35.1	36.8	38.7	40.7	42.8
AMBARVALE	11.4	13.5	15.3	17.0	18.6	20.2	21.7	23.3	24.9	26.6	28.4	30.3
ANZAC VILLAGE	10.1	11.7	13.0	14.3	15.6	16.8	18.1	19.3	20.6	22.0	23.5	25.0
APPIN	3.4	4.4	5.2	6.0	6.8	7.5	8.2	8.9	9.6	10.3	11.1	11.9
ARNDELL PARK	5.3	6.4	7.3	8.2	9.1	9.9	10.8	11.6	12.5	13.4	14.4	15.4
BAULKHAM HILLS 11KV	10.6	12.5	14.2	15.7	17.3	18.8	20.2	21.7	23.3	24.9	26.7	28.6
BELLA VISTA	18.6	21.8	24.6	27.3	29.9	32.4	34.9	37.4	39.9	42.7	45.7	48.8
BERRY	6.6	7.9	9.0	10.0	11.0	11.9	12.8	13.7	14.6	15.6	16.6	17.7
BLACKHEATH	3.7	4.1	4.5	4.9	5.3	5.6	5.9	6.2	6.6	6.9	7.3	7.7
BLACKMANS FLAT	1.6	2.5	3.2	3.9	4.6	5.2	5.8	6.4	7.0	7.7	8.4	9.1
BLAXLAND	10.8	11.7	12.5	13.1	13.8	14.4	15.0	15.6	16.2	16.8	17.5	18.2
BOLONG	1.2	1.5	1.8	2.0	2.3	2.5	2.8	3.0	3.2	3.5	3.8	4.0
BOMADERRY	13.0	15.0	16.7	18.3	19.8	21.2	22.7	24.1	25.5	27.1	28.7	30.4
BONNYRIGG	12.6	14.9	16.8	18.6	20.4	22.1	23.7	25.4	27.1	28.9	30.9	33.0
BOSSLEY PARK	11.4	12.7	13.7	14.7	15.7	16.5	17.4	18.3	19.1	20.0	21.0	22.0
BOW BOWING	5.8	6.7	7.5	8.3	9.0	9.7	10.4	11.0	11.7	12.4	13.2	14.0
BOWRAL	8.9	11.5	13.7	15.7	17.7	19.6	21.4	23.2	25.0	27.0	29.1	31.2
BRINGELLY	3.4	4.8	6.1	7.3	8.6	9.7	10.9	12.2	13.4	14.8	16.4	18.0
BULLI	7.2	9.9	12.2	14.4	16.6	18.5	20.5	22.5	24.5	26.6	29.0	31.4
BYLONG	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6
CABRAMATTA	4.0	5.3	6.3	7.3	8.3	9.2	10.1	11.1	12.0	13.0	14.1	15.2
CAMBRIDGE PARK	15.5	17.9	20.0	21.9	23.7	25.5	27.3	29.0	30.9	32.8	34.9	37.0
CAMPBELLTOWN	9.4	11.9	14.2	16.3	18.4	20.4	22.4	24.5	26.6	28.9	31.5	34.1
CANLEY VALE	10.4	12.4	14.1	15.8	17.3	18.8	20.3	21.8	23.3	24.8	26.5	28.3
CARRAMAR	3.5	4.7	5.6	6.5	7.4	8.2	9.1	9.9	10.7	11.6	12.5	13.4
CASTLE HILL	4.7	8.5	11.7	14.8	17.8	20.5	23.3	26.1	29.0	31.9	35.2	38.5
CASULA	13.0	15.8	18.2	20.5	22.7	24.8	26.8	28.9	31.1	33.3	35.7	38.3
CATTAI	5.0	6.6	7.9	9.1	10.3	11.4	12.5	13.6	14.8	16.0	17.3	18.6
CAWDOR	8.1	10.6	12.8	14.9	17.0	19.0	21.1	23.3	25.5	27.9	30.6	33.5
CHERITON AVENUE	8.9	11.6	13.9	16.1	18.3	20.4	22.5	24.6	26.8	29.2	31.8	34.6
CHIPPING NORTON	6.8	7.7	8.6	9.4	10.2	10.9	11.7	12.5	13.3	14.1	15.1	16.1
CLAREMONT MEADOWS	9.4	12.6	15.4	18.1	20.7	23.2	25.7	28.3	30.9	33.7	36.8	40.0
CORRIMAL	8.9	10.9	12.6	14.1	15.6	17.0	18.4	19.8	21.2	22.6	24.2	25.8
CRANEBROOK	8.5	10.6	12.3	14.0	15.7	17.2	18.7	20.3	21.8	23.5	25.3	27.1
CULBURRA	5.9	7.3	8.6	9.7	10.8	11.9	12.9	14.0	15.0	16.1	17.4	18.6
DAPTO	22.2	25.2	27.8	30.1	32.5	34.6	36.8	38.9	41.1	43.4	45.8	48.4
DARKES FOREST	0.1	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	1.5	1.7	1.9
DOONSIDE	22.3	26.6	30.3	33.8	37.3	40.5	43.8	47.1	50.4	54.0	57.9	61.9
DUNDAS	9.3	12.1	14.5	16.8	19.0	21.1	23.2	25.3	27.5	29.7	32.2	34.8
EAST RICHMOND	5.9	6.8	7.6	8.3	9.0	9.7	10.3	11.0	11.6	12.3	13.1	13.8
EASTERN CREEK	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.2
EDMONDSON PARK	5.1	6.4	7.5	8.5	9.6	10.5	11.5	12.5	13.5	14.5	15.6	16.8
EMU PLAINS	9.4	10.5	11.4	12.2	13.0	13.7	14.5	15.2	16.0	16.8	17.6	18.5
FAIRFIELD	5.4	6.0	6.6	7.1	7.6	8.1	8.5	9.0	9.4	9.9	10.4	11.0
FIGTREE	12.7	14.9	16.8	18.5	20.2	21.8	23.4	24.9	26.5	28.1	29.9	31.7
GERRINGONG	4.4	4.8	5.1	5.4	5.7	6.0	6.3	6.6	6.9	7.2	7.6	7.9
GLENMORE PARK	18.6	20.8	22.6	24.4	26.1	27.7	29.3	30.9	32.6	34.4	36.3	38.3
GLENORIE	2.9	3.5	4.1	4.6	5.1	5.5	6.0	6.5	7.0	7.5	8.0	8.6
GLOSSODIA	6.1	7.8	9.3	10.6	11.9	13.1	14.3	15.5	16.7	18.0	19.4	20.8
GRANVILLE	4.6	5.9	7.1	8.2	9.2	10.2	11.3	12.3	13.4	14.5	15.8	17.1
GREYSTANES	5.8	6.7	7.4	8.1	8.8	9.5	10.1	10.8	11.4	12.2	12.9	13.8
HARTLEY VALE	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5
HAZELBROOK	6.1	6.6	7.1	7.5	8.0	8.4	8.7	9.1	9.5	9.9	10.4	10.9
HELENSBURGH	3.7	4.4	4.9	5.4	6.0	6.4	6.9	7.4	7.8	8.3	8.9	9.4

Table 5.7 Total generation by zone substation – Endeavour Energy (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	21.8	24.8	27.4	29.8	32.2	34.5	36.8	39.1	41.4	43.9	46.7	49.6
HOLROYD	12.6	16.1	19.1	22.0	24.8	27.4	30.1	32.8	35.6	38.5	41.7	45.0
HOMEPRIDE	3.3	4.8	6.0	7.2	8.4	9.5	10.6	11.8	12.9	14.1	15.5	16.9
HORSLEY PARK	3.0	3.1	3.3	3.4	3.6	3.7	3.8	4.0	4.1	4.2	4.4	4.5
HUNTINGWOOD	2.1	2.5	2.8	3.1	3.4	3.7	3.9	4.2	4.5	4.8	5.1	5.4
HUSKISSON	13.3	15.8	17.9	19.8	21.6	23.3	25.1	26.8	28.5	30.3	32.3	34.4
ILFORD HALL	0.4	0.6	0.7	0.9	1.0	1.1	1.2	1.4	1.5	1.6	1.8	1.9
INNER HARBOUR	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
JAMBEROO	2.0	2.5	2.9	3.3	3.6	4.0	4.3	4.7	5.0	5.4	5.8	6.2
JASPER RD	10.4	11.9	13.2	14.3	15.5	16.6	17.8	18.9	20.1	21.3	22.7	24.2
JORDAN SPRINGS	9.6	10.9	12.1	13.2	14.2	15.2	16.2	17.2	18.2	19.3	20.5	21.7
KANDOS	2.3	4.1	5.6	7.1	8.5	9.8	11.1	12.3	13.6	15.0	16.5	18.0
KANGAROO VALLEY	1.3	1.7	1.9	2.2	2.5	2.7	2.9	3.1	3.4	3.6	3.9	4.2
KATOOMBA	6.7	7.5	8.2	8.8	9.5	10.0	10.6	11.2	11.7	12.3	13.0	13.7
KELLYVILLE	8.0	9.4	10.7	11.8	13.0	14.0	15.1	16.3	17.4	18.6	19.9	21.3
KEMBLA GRANGE	3.7	4.5	5.1	5.7	6.4	6.9	7.5	8.0	8.6	9.2	9.9	10.6
KEMPS CREEK	3.3	4.0	4.6	5.1	5.7	6.2	6.7	7.2	7.7	8.3	8.9	9.5
KENNY STREET	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.0
KENTHURST	10.2	13.4	16.1	18.6	21.1	23.4	25.8	28.2	30.7	33.3	36.1	39.1
KENTLYN	18.4	22.0	24.8	27.5	30.2	32.6	35.1	37.6	40.1	42.7	45.6	48.5
KIAMA	10.1	11.8	13.2	14.5	15.9	17.1	18.3	19.6	20.8	22.2	23.6	25.1
KINGSWOOD	12.7	16.7	20.1	23.3	26.4	29.3	32.2	35.2	38.2	41.4	44.8	48.4
KURRAJONG	7.0	8.8	10.4	11.9	13.4	14.7	16.1	17.4	18.8	20.2	21.7	23.3
LEABONS LANE	6.1	7.9	9.4	10.9	12.3	13.6	15.0	16.3	17.7	19.2	20.8	22.5
LENNOX	1.7	2.8	3.5	4.2	5.0	5.6	6.3	7.0	7.7	8.4	9.2	10.0
LITHGOW	9.1	10.9	12.4	13.8	15.2	16.5	17.8	19.0	20.3	21.7	23.1	24.6
LIVERPOOL 11KV	10.4	11.5	12.4	13.2	14.0	14.8	15.6	16.4	17.2	18.0	18.9	19.9
LUDDENHAM	2.6	4.1	5.5	6.7	8.0	9.2	10.4	11.6	12.9	14.3	15.9	17.5
MACQUARIE FIELDS	16.6	20.4	23.6	26.4	29.2	31.8	34.4	37.0	39.6	42.4	45.4	48.5
MALDON	11.0	15.1	18.5	21.6	24.6	27.5	30.3	33.2	36.1	39.2	42.7	46.2
MAMRE	15.4	17.8	19.8	21.7	23.6	25.3	27.0	28.8	30.6	32.5	34.5	36.7
MARAYONG	6.5	8.8	10.8	12.7	14.4	16.0	17.6	19.3	21.0	22.8	24.7	26.7
MARSDEN PARK	12.1	13.1	13.9	14.7	15.4	16.1	16.8	17.5	18.3	19.0	19.8	20.7
MEADOW FLAT	0.7	0.9	1.0	1.1	1.3	1.4	1.5	1.6	1.7	1.8	2.0	2.1
MINTO	25.6	28.8	31.4	33.9	36.4	38.6	40.9	43.1	45.4	47.8	50.5	53.1
MITTAGONG	10.7	12.7	14.3	15.9	17.4	18.9	20.3	21.7	23.2	24.8	26.5	28.2
MOOREBANK	4.8	6.1	7.3	8.4	9.5	10.5	11.6	12.6	13.7	14.8	16.0	17.3
MOSS VALE	10.4	12.6	14.5	16.2	17.9	19.5	21.1	22.7	24.3	26.0	27.9	29.7
MOUNT OUSLEY	6.2	7.8	9.2	10.5	11.7	12.9	14.0	15.1	16.3	17.5	18.8	20.1
MUNGERIE PARK	44.9	50.8	55.9	60.6	65.3	69.7	74.2	78.7	83.3	88.2	93.5	99.0
NARELLAN	29.8	33.4	36.7	39.8	43.0	46.1	49.3	52.6	56.1	60.0	64.3	68.9
NEPEAN 11KV	22.0	26.4	30.3	34.1	38.0	41.6	45.4	49.4	53.6	58.1	63.3	68.9
NEWTON	8.5	9.5	10.4	11.2	12.0	12.8	13.6	14.4	15.2	16.0	17.0	17.9
NORTH EASTERN CREEK	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	0.9	1.0
NORTH LEPPINGTON	1.4	2.4	3.3	4.1	4.8	5.6	6.3	7.1	7.9	8.7	9.6	10.6
NORTH PARRAMATTA	4.9	6.1	7.2	8.2	9.2	10.1	11.1	12.1	13.1	14.2	15.3	16.6
NORTH RICHMOND	6.0	7.6	9.0	10.3	11.5	12.7	13.8	15.0	16.2	17.4	18.7	20.1
NORTH ROCKS	5.2	6.2	7.1	8.0	8.9	9.6	10.5	11.3	12.1	13.0	14.0	15.1
NORTH WARRAGAMBA	5.7	7.9	9.8	11.6	13.4	15.0	16.7	18.3	20.1	21.9	23.8	25.9
NORTH WOLLONGONG	2.6	3.8	4.8	5.7	6.4	7.1	7.8	8.5	9.1	9.8	10.6	11.4
NORTHMEAD	5.2	6.5	7.6	8.7	9.8	10.7	11.7	12.8	13.8	14.9	16.1	17.4
NOWRA	9.4	11.8	13.8	15.8	17.7	19.4	21.1	22.9	24.7	26.5	28.5	30.6
OAKDALE	1.1	1.8	2.4	3.0	3.5	4.0	4.5	5.0	5.6	6.1	6.7	7.3
ORAN PARK	17.3	23.2	28.5	33.6	38.8	43.8	49.1	54.6	60.4	66.7	73.9	81.5
PARKLEA	44.6	49.4	53.4	57.3	61.1	64.7	68.2	71.8	75.4	79.3	83.6	88.0
PENRITH 11KV	3.7	5.5	7.0	8.4	9.8	11.1	12.3	13.4	14.6	15.8	17.1	18.5
PLUMPTON	15.3	18.1	20.5	22.7	24.9	26.9	29.0	31.1	33.2	35.5	38.0	40.6

Table 5.7 Total generation by zone substation – Endeavour Energy (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	2.4	3.2	3.9	4.5	5.1	5.7	6.2	6.8	7.4	8.0	8.6	9.3
PORT KEMBLA	5.6	7.6	9.3	10.9	12.4	13.8	15.2	16.6	18.1	19.6	21.2	22.9
PORTLAND	2.5	2.9	3.3	3.6	3.9	4.2	4.5	4.8	5.1	5.4	5.7	6.1
PRESTONS	18.2	20.7	22.8	24.8	26.8	28.7	30.7	32.7	34.7	36.9	39.4	41.9
PROSPECT	7.4	8.1	8.7	9.3	9.9	10.4	11.0	11.6	12.2	12.8	13.4	14.2
QUAKERS HILL	19.6	23.1	26.1	29.0	31.8	34.4	37.0	39.7	42.4	45.3	48.5	51.8
QUARRIES	3.8	4.4	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.1	9.7
RINGWOOD	4.8	5.6	6.3	7.0	7.7	8.3	8.9	9.5	10.1	10.7	11.4	12.2
RIVERSTONE	14.4	15.9	17.2	18.5	19.7	20.8	21.9	23.0	24.2	25.4	26.7	28.1
ROBERTSON	3.0	4.0	4.8	5.5	6.3	7.0	7.7	8.4	9.1	9.9	10.8	11.7
ROOTY HILL	18.1	21.3	24.0	26.5	29.1	31.4	33.8	36.2	38.7	41.3	44.2	47.1
ROSEHILL	1.0	1.4	1.7	2.0	2.3	2.6	2.9	3.2	3.5	3.9	4.2	4.6
RUSSELL VALE	7.8	9.9	11.6	13.3	14.9	16.4	17.8	19.3	20.8	22.3	24.0	25.7
RYDALMERE	8.4	10.4	12.2	13.8	15.5	17.0	18.6	20.1	21.8	23.5	25.4	27.3
SCHOFIELDS	22.7	27.0	30.6	34.0	37.4	40.5	43.7	46.9	50.2	53.7	57.5	61.5
SEVEN HILLS	7.0	7.6	8.2	8.7	9.2	9.7	10.1	10.6	11.1	11.6	12.2	12.8
SHELLHARBOUR	15.9	19.5	22.5	25.3	28.1	30.7	33.4	36.0	38.6	41.4	44.5	47.6
SHERWOOD	7.1	8.5	9.7	10.8	11.9	12.9	13.9	15.0	16.0	17.2	18.4	19.6
SMITHFIELD	13.8	15.6	17.2	18.6	20.1	21.4	22.8	24.1	25.5	26.9	28.4	30.0
SOUTH GRANVILLE	4.3	5.6	6.7	7.8	8.8	9.8	10.8	11.8	12.8	13.9	15.1	16.3
SOUTH LEPPINGTON	12.7	15.7	18.3	20.8	23.2	25.4	27.7	30.0	32.3	34.8	37.5	40.3
SOUTH MARSDEN PARK	3.1	4.8	6.3	7.7	9.1	10.4	11.7	13.1	14.5	16.0	17.8	19.6
SOUTH NOWRA	3.3	3.8	4.2	4.6	5.0	5.3	5.6	6.0	6.3	6.7	7.1	7.5
SOUTH WINDSOR	12.8	15.7	18.1	20.3	22.5	24.5	26.6	28.6	30.7	32.9	35.2	37.7
SOUTH WOLLONGONG	2.1	2.7	3.2	3.7	4.1	4.5	4.9	5.3	5.7	6.2	6.6	7.1
SPRINGWOOD	12.1	13.3	14.2	15.1	16.0	16.7	17.5	18.3	19.1	20.0	20.9	21.8
ST MARYS	10.1	12.9	15.3	17.6	19.8	21.9	24.0	26.1	28.3	30.6	33.1	35.7
SUSSEX INLET	3.8	4.8	5.8	6.7	7.5	8.3	9.1	9.9	10.7	11.6	12.5	13.5
TAHMOOR	10.3	14.2	17.6	20.7	23.9	26.8	29.7	32.7	35.7	38.9	42.4	46.0
THE OAKS	3.6	4.6	5.5	6.3	7.2	8.0	8.9	9.8	10.7	11.7	12.8	13.9
TOMERONG	7.1	7.8	8.4	8.9	9.4	9.9	10.4	10.8	11.3	11.9	12.4	13.0
ULLADULLA	15.7	18.3	20.5	22.6	24.6	26.4	28.3	30.2	32.0	34.0	36.2	38.4
UNANDERRA	3.6	4.2	4.7	5.2	5.7	6.2	6.6	7.1	7.5	8.0	8.5	9.0
WARILLA	10.8	13.5	15.8	17.8	19.8	21.7	23.5	25.4	27.3	29.2	31.4	33.6
WENTWORTH FALLS	4.1	4.7	5.2	5.7	6.1	6.5	6.9	7.3	7.8	8.2	8.7	9.1
WERRINGTON	9.7	12.3	14.6	16.7	18.7	20.6	22.6	24.2	25.9	27.7	29.6	31.6
WEST CASTLE HILL	9.1	11.0	12.6	14.1	15.6	17.1	18.5	20.0	21.5	23.1	24.9	26.7
WEST LIVERPOOL 11KV	9.9	12.5	14.6	16.6	18.6	20.5	22.4	24.3	26.3	28.3	30.6	33.0
WEST PARRAMATTA	0.7	0.9	1.0	1.2	1.3	1.5	1.7	1.8	2.0	2.2	2.4	2.6
WEST PENNANT HILLS	10.2	11.9	13.4	14.8	16.2	17.5	18.8	20.1	21.5	22.9	24.6	26.2
WEST WETHERILL PARK 11KV	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.5	2.6
WEST WOLLONGONG	4.4	5.5	6.5	7.5	8.4	9.2	10.1	10.9	11.8	12.6	13.6	14.6
WESTMEAD	0.4	0.5	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.6
WETHERILL PARK	2.6	2.8	2.9	3.1	3.2	3.3	3.4	3.6	3.7	3.8	4.0	4.1
WHALAN	9.1	10.3	11.3	12.3	13.2	14.1	15.0	15.8	16.8	17.7	18.8	19.9
WILTON	2.6	3.1	3.5	3.8	4.2	4.5	4.8	5.1	5.5	5.8	6.2	6.6
WINDSOR	6.3	7.8	9.0	10.2	11.3	12.1	13.0	13.9	14.8	15.7	16.7	17.7
WISEMANS	1.4	1.9	2.4	2.8	3.2	3.5	3.8	4.2	4.5	4.9	5.2	5.6
WOMBARRA	3.8	4.6	5.3	5.9	6.4	7.0	7.5	8.1	8.6	9.2	9.8	10.5
WOODPARK	1.4	1.7	1.8	2.0	2.2	2.3	2.5	2.6	2.8	2.9	3.1	3.3
YATTE YATTAH	2.1	2.8	3.4	3.9	4.4	4.9	5.4	5.9	6.5	7.0	7.6	8.2
YENNORA	5.7	7.0	8.2	9.2	10.3	11.2	12.2	13.2	14.1	15.2	16.3	17.4
TOTAL	**1373.1**	**1649.2**	**1885.2**	**2106.1**	**2324.9**	**2526.8**	**2732.6**	**2939.2**	**3150.5**	**3373.7**	**3618.8**	**3872.2**

Table 5.8 Total in-house use by zone substation – Endeavour Energy (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	10.3	11.7	12.9	14.1	15.2	16.3	17.5	18.6	19.8	21.1	22.5	24.0
ALBION PARK	15.6	17.6	19.3	20.9	22.4	23.8	25.2	26.6	28.0	29.5	31.1	32.8
AMBARVALE	8.6	10.2	11.5	12.8	14.1	15.3	16.5	17.7	18.9	20.3	21.7	23.2
ANZAC VILLAGE	7.6	8.8	9.8	10.8	11.8	12.7	13.7	14.7	15.7	16.8	17.9	19.2
APPIN	2.6	3.3	4.0	4.6	5.1	5.7	6.2	6.7	7.3	7.9	8.5	9.2
ARNDELL PARK	4.0	4.8	5.5	6.2	6.9	7.5	8.2	8.8	9.5	10.2	11.0	11.9
BAULKHAM HILLS 11KV	8.0	9.4	10.7	11.9	13.1	14.2	15.3	16.5	17.7	19.0	20.5	22.0
BELLA VISTA	14.0	16.4	18.6	20.6	22.6	24.5	26.4	28.4	30.4	32.6	35.0	37.5
BERRY	5.0	6.0	6.8	7.6	8.3	9.0	9.7	10.4	11.1	11.9	12.7	13.6
BLACKHEATH	2.8	3.1	3.4	3.7	4.0	4.2	4.5	4.7	5.0	5.3	5.6	5.9
BLACKMANS FLAT	1.2	1.9	2.4	2.9	3.5	3.9	4.4	4.9	5.4	5.9	6.5	7.1
BLAXLAND	8.2	8.8	9.4	9.9	10.4	10.9	11.3	11.8	12.3	12.8	13.3	13.9
BOLONG	0.9	1.1	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1
BOMADERRY	9.8	11.3	12.6	13.8	15.0	16.1	17.2	18.3	19.5	20.7	22.0	23.4
BONNYRIGG	9.5	11.2	12.7	14.1	15.4	16.7	18.0	19.3	20.7	22.1	23.7	25.3
BOSSLEY PARK	8.6	9.6	10.3	11.1	11.8	12.5	13.2	13.9	14.5	15.3	16.1	16.9
BOW BOWING	4.4	5.1	5.7	6.2	6.8	7.3	7.9	8.4	8.9	9.5	10.1	10.8
BOWRAL	6.7	8.7	10.3	11.9	13.4	14.8	16.2	17.7	19.1	20.7	22.3	24.1
BRINGELLY	2.5	3.6	4.6	5.5	6.5	7.4	8.3	9.3	10.3	11.4	12.6	13.9
BULLI	5.4	7.5	9.2	10.9	12.5	14.1	15.6	17.1	18.7	20.4	22.3	24.2
BYLONG	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4
CABRAMATTA	3.0	4.0	4.8	5.5	6.3	7.0	7.7	8.4	9.2	10.0	10.8	11.7
CAMBRIDGE PARK	11.7	13.5	15.0	16.5	17.9	19.3	20.7	22.1	23.5	25.0	26.7	28.5
CAMPBELLTOWN	7.0	9.0	10.7	12.3	13.9	15.4	17.0	18.7	20.3	22.2	24.2	26.3
CANLEY VALE	7.8	9.4	10.7	11.9	13.1	14.2	15.4	16.5	17.7	19.0	20.3	21.7
CARRAMAR	2.6	3.5	4.3	4.9	5.6	6.3	6.9	7.5	8.2	8.8	9.6	10.3
CASTLE HILL	3.5	6.4	8.9	11.2	13.5	15.6	17.8	20.0	22.2	24.6	27.2	29.9
CASULA	9.8	11.9	13.8	15.5	17.2	18.8	20.4	22.0	23.7	25.5	27.4	29.4
CATTAI	3.8	4.9	5.9	6.9	7.8	8.6	9.5	10.4	11.3	12.2	13.3	14.3
CAWDOR	6.1	8.0	9.7	11.3	12.9	14.4	16.1	17.7	19.5	21.4	23.6	25.9
CHERITON AVENUE	6.7	8.7	10.5	12.2	13.8	15.4	17.1	18.8	20.5	22.4	24.5	26.8
CHIPPING NORTON	5.1	5.8	6.5	7.1	7.7	8.3	8.9	9.5	10.1	10.8	11.5	12.3
CLAREMONT MEADOWS	7.1	9.5	11.6	13.7	15.7	17.6	19.5	21.5	23.6	25.8	28.3	30.9
CORRIMAL	6.7	8.2	9.5	10.6	11.8	12.9	14.0	15.1	16.2	17.3	18.6	19.9
CRANEBROOK	6.4	8.0	9.3	10.6	11.8	13.0	14.2	15.4	16.7	18.0	19.4	20.9
CULBURRA	4.4	5.5	6.5	7.3	8.2	9.0	9.8	10.6	11.5	12.3	13.3	14.3
DAPTO	16.7	19.0	20.9	22.7	24.5	26.2	27.9	29.5	31.3	33.1	35.0	37.1
DARKES FOREST	0.1	0.2	0.4	0.5	0.6	0.7	0.8	0.9	1.1	1.2	1.3	1.5
DOONSIDE	16.8	20.1	22.9	25.5	28.2	30.6	33.2	35.8	38.4	41.2	44.4	47.6
DUNDAS	7.0	9.1	11.0	12.7	14.4	16.0	17.6	19.3	21.0	22.8	24.8	26.8
EAST RICHMOND	4.5	5.1	5.7	6.3	6.8	7.3	7.8	8.3	8.9	9.4	10.0	10.7
EASTERN CREEK	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9
EDMONDSON PARK	3.8	4.8	5.7	6.5	7.2	8.0	8.7	9.5	10.3	11.1	12.0	12.9
EMU PLAINS	7.1	7.9	8.6	9.2	9.8	10.4	10.9	11.5	12.1	12.8	13.4	14.2
FAIRFIELD	4.1	4.6	5.0	5.4	5.7	6.1	6.5	6.8	7.2	7.6	8.0	8.4
FIGTREE	9.6	11.3	12.7	14.0	15.3	16.5	17.7	18.9	20.2	21.5	22.9	24.4
GERRINGONG	3.3	3.6	3.8	4.1	4.3	4.5	4.8	5.0	5.2	5.5	5.8	6.0
GLENMORE PARK	14.0	15.6	17.0	18.4	19.7	20.9	22.2	23.5	24.8	26.2	27.7	29.3
GLENORIE	2.2	2.7	3.1	3.4	3.8	4.2	4.5	4.9	5.3	5.7	6.2	6.6
GLOSSODIA	4.6	5.9	7.0	8.0	9.0	9.9	10.9	11.8	12.8	13.8	14.9	16.0
GRANVILLE	3.4	4.5	5.3	6.2	7.0	7.8	8.6	9.4	10.2	11.1	12.1	13.2
GREYSTANES	4.4	5.0	5.6	6.1	6.7	7.1	7.7	8.2	8.7	9.3	9.9	10.5
HARTLEY VALE	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4
HAZELBROOK	4.6	5.0	5.3	5.7	6.0	6.3	6.6	6.9	7.2	7.6	7.9	8.3
HELENSBURGH	2.8	3.3	3.7	4.1	4.5	4.9	5.2	5.6	6.0	6.4	6.8	7.2

Table 5.8 Total in-house use by zone substation – Endeavour Energy (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	16.4	18.7	20.6	22.5	24.3	26.1	27.9	29.7	31.5	33.5	35.8	38.1
HOLROYD	9.5	12.2	14.4	16.6	18.8	20.8	22.9	25.0	27.2	29.5	32.1	34.7
HOMEPRIDE	2.5	3.6	4.6	5.5	6.4	7.2	8.1	9.0	9.9	10.9	12.0	13.1
HORSLEY PARK	2.2	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.5
HUNTINGWOOD	1.6	1.9	2.1	2.3	2.6	2.8	3.0	3.2	3.4	3.7	3.9	4.2
HUSKISSON	10.0	11.9	13.5	14.9	16.4	17.7	19.0	20.4	21.8	23.2	24.8	26.5
ILFORD HALL	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.4	1.5
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
JAMBEROO	1.5	1.8	2.2	2.5	2.7	3.0	3.3	3.6	3.8	4.1	4.5	4.8
JASPER RD	7.9	9.0	9.9	10.8	11.7	12.6	13.5	14.4	15.3	16.3	17.4	18.5
JORDAN SPRINGS	7.2	8.2	9.1	9.9	10.8	11.5	12.3	13.1	13.9	14.7	15.7	16.6
KANDOS	1.7	3.1	4.3	5.4	6.4	7.4	8.4	9.4	10.4	11.5	12.7	13.9
KANGAROO VALLEY	1.0	1.2	1.5	1.7	1.9	2.0	2.2	2.4	2.6	2.8	3.0	3.2
KATOOMBA	5.1	5.7	6.2	6.7	7.1	7.6	8.0	8.5	8.9	9.4	9.9	10.5
KELLYVILLE	6.0	7.1	8.0	8.9	9.8	10.6	11.5	12.3	13.2	14.2	15.3	16.4
KEMBLA GRANGE	2.8	3.4	3.9	4.3	4.8	5.2	5.7	6.1	6.6	7.0	7.6	8.1
KEMPS CREEK	2.4	3.0	3.4	3.9	4.3	4.7	5.1	5.5	5.9	6.4	6.8	7.4
KENNY STREET	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
KENTHURST	7.7	10.1	12.1	14.0	16.0	17.8	19.6	21.5	23.4	25.5	27.8	30.2
KENTLYN	13.9	16.6	18.7	20.8	22.8	24.7	26.6	28.6	30.5	32.6	34.9	37.3
KIAMA	7.6	8.9	9.9	11.0	12.0	12.9	13.9	14.9	15.9	16.9	18.1	19.3
KINGSWOOD	9.6	12.6	15.2	17.6	20.0	22.2	24.5	26.9	29.3	31.8	34.6	37.5
KURRAJONG	5.2	6.7	7.9	9.0	10.1	11.1	12.2	13.2	14.3	15.4	16.7	17.9
LEABONS LANE	4.6	5.9	7.1	8.2	9.3	10.3	11.4	12.4	13.5	14.7	16.0	17.3
LENNOX	1.3	2.1	2.7	3.2	3.8	4.3	4.8	5.4	5.9	6.5	7.2	7.9
LITHGOW	6.8	8.2	9.4	10.4	11.5	12.5	13.5	14.5	15.5	16.6	17.7	18.9
LIVERPOOL 11KV	7.8	8.6	9.3	10.0	10.6	11.2	11.8	12.5	13.1	13.8	14.6	15.4
LUDDENHAM	2.0	3.1	4.1	5.1	6.0	7.0	7.9	8.9	9.9	11.0	12.2	13.6
MACQUARIE FIELDS	12.5	15.3	17.8	20.0	22.1	24.1	26.1	28.2	30.3	32.5	34.9	37.4
MALDON	8.3	11.4	14.0	16.3	18.7	20.8	23.1	25.3	27.6	30.1	32.8	35.7
MAMRE	11.6	13.4	14.9	16.4	17.8	19.1	20.5	21.9	23.3	24.8	26.4	28.1
MARAYONG	4.9	6.6	8.1	9.6	10.9	12.1	13.4	14.7	16.0	17.5	19.0	20.7
MARSDEN PARK	9.1	9.9	10.5	11.1	11.6	12.2	12.7	13.3	13.8	14.4	15.1	15.8
MEADOW FLAT	0.5	0.6	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.6
MINTO	19.3	21.7	23.7	25.6	27.5	29.2	31.0	32.7	34.5	36.5	38.6	40.7
MITTAGONG	8.1	9.5	10.8	12.0	13.2	14.3	15.4	16.5	17.7	18.9	20.3	21.7
MOOREBANK	3.6	4.6	5.5	6.4	7.2	8.0	8.8	9.6	10.5	11.4	12.4	13.4
MOSS VALE	7.8	9.5	10.9	12.2	13.6	14.8	16.0	17.3	18.6	19.9	21.4	22.9
MOUNT OUSLEY	4.7	5.9	6.9	7.9	8.9	9.7	10.6	11.5	12.4	13.4	14.4	15.5
MUNGERIE PARK	33.8	38.3	42.1	45.7	49.4	52.7	56.2	59.8	63.4	67.3	71.6	76.0
NARELLAN	22.4	25.2	27.6	30.0	32.5	34.9	37.4	40.0	42.8	45.8	49.3	53.1
NEPEAN 11KV	16.5	19.9	22.9	25.7	28.7	31.5	34.5	37.6	40.9	44.5	48.7	53.1
NEWTON	6.4	7.2	7.8	8.5	9.1	9.7	10.3	10.9	11.6	12.2	13.0	13.8
NORTH EASTERN CREEK	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7
NORTH LEPPINGTON	1.1	1.8	2.5	3.1	3.7	4.2	4.8	5.4	6.0	6.7	7.4	8.2
NORTH PARRAMATTA	3.7	4.6	5.4	6.2	6.9	7.7	8.4	9.2	10.0	10.8	11.8	12.8
NORTH RICHMOND	4.5	5.7	6.8	7.7	8.7	9.6	10.5	11.4	12.3	13.3	14.4	15.5
NORTH ROCKS	3.9	4.7	5.4	6.0	6.7	7.3	7.9	8.6	9.2	10.0	10.7	11.6
NORTH WARRAGAMBA	4.3	6.0	7.4	8.8	10.1	11.4	12.7	14.0	15.3	16.8	18.3	20.0
NORTH WOLLONGONG	2.0	2.9	3.6	4.3	4.9	5.4	5.9	6.5	7.0	7.6	8.2	8.9
NORTHMEAD	3.9	4.9	5.8	6.6	7.4	8.1	8.9	9.7	10.5	11.4	12.4	13.4
NOWRA	7.1	8.9	10.4	11.9	13.4	14.7	16.1	17.4	18.8	20.3	21.9	23.6
OAKDALE	0.9	1.4	1.8	2.2	2.7	3.0	3.4	3.8	4.3	4.7	5.2	5.7
ORAN PARK	13.0	17.5	21.5	25.4	29.4	33.2	37.3	41.6	46.2	51.2	56.9	63.0
PARKLEA	33.6	37.2	40.3	43.2	46.2	48.9	51.6	54.4	57.3	60.4	63.8	67.4
PENRITH 11KV	2.8	4.1	5.3	6.4	7.5	8.5	9.4	10.3	11.2	12.2	13.3	14.4
PLUMPTON	11.6	13.6	15.4	17.1	18.8	20.4	22.0	23.6	25.3	27.1	29.1	31.2

Table 5.8 Total in-house use by zone substation – Endeavour Energy (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	1.8	2.4	2.9	3.4	3.9	4.3	4.8	5.2	5.6	6.1	6.7	7.2
PORT KEMBLA	4.3	5.7	7.0	8.2	9.4	10.5	11.6	12.7	13.8	15.0	16.3	17.7
PORTLAND	1.9	2.2	2.5	2.7	3.0	3.2	3.4	3.6	3.9	4.1	4.4	4.7
PRESTONS	13.7	15.6	17.2	18.7	20.2	21.7	23.2	24.8	26.4	28.2	30.1	32.2
PROSPECT	5.6	6.1	6.6	7.0	7.5	7.9	8.3	8.8	9.2	9.7	10.3	10.8
QUAKERS HILL	14.8	17.4	19.7	21.9	24.0	26.0	28.1	30.2	32.3	34.6	37.1	39.8
QUARRIES	2.9	3.3	3.8	4.2	4.6	4.9	5.3	5.7	6.1	6.5	7.0	7.5
RINGWOOD	3.6	4.2	4.8	5.3	5.8	6.3	6.7	7.2	7.7	8.2	8.8	9.4
RIVERSTONE	10.8	12.0	13.0	13.9	14.9	15.7	16.6	17.5	18.4	19.4	20.5	21.6
ROBERTSON	2.3	3.0	3.6	4.2	4.8	5.3	5.8	6.4	7.0	7.6	8.3	9.0
ROOTY HILL	13.6	16.0	18.1	20.0	22.0	23.8	25.7	27.5	29.5	31.6	33.8	36.2
ROSEHILL	0.7	1.0	1.3	1.5	1.8	2.0	2.2	2.5	2.7	3.0	3.3	3.6
RUSSELL VALE	5.9	7.4	8.8	10.0	11.3	12.4	13.5	14.7	15.9	17.1	18.4	19.8
RYDALMERE	6.3	7.9	9.2	10.5	11.7	12.9	14.1	15.3	16.6	18.0	19.5	21.1
SCHOFIELDS	17.1	20.3	23.1	25.7	28.2	30.7	33.1	35.7	38.2	41.0	44.1	47.2
SEVEN HILLS	5.3	5.7	6.2	6.5	6.9	7.3	7.7	8.1	8.5	8.9	9.3	9.8
SHELLHARBOUR	12.0	14.7	17.0	19.1	21.3	23.3	25.3	27.4	29.5	31.7	34.2	36.7
SHERWOOD	5.3	6.4	7.3	8.1	9.0	9.8	10.6	11.4	12.3	13.2	14.1	15.2
SMITHFIELD	10.4	11.8	13.0	14.1	15.2	16.2	17.2	18.3	19.4	20.5	21.7	23.0
SOUTH GRANVILLE	3.2	4.2	5.1	5.9	6.7	7.4	8.2	9.0	9.8	10.6	11.6	12.5
SOUTH LEPPINGTON	9.6	11.9	13.8	15.7	17.5	19.2	21.0	22.8	24.6	26.6	28.8	31.0
SOUTH MARSDEN PARK	2.3	3.6	4.7	5.8	6.9	7.9	8.9	10.0	11.1	12.3	13.7	15.2
SOUTH NOWRA	2.5	2.9	3.2	3.5	3.7	4.0	4.3	4.5	4.8	5.1	5.4	5.8
SOUTH WINDSOR	9.7	11.8	13.7	15.4	17.0	18.6	20.2	21.8	23.4	25.1	27.0	29.0
SOUTH WOLLONGONG	1.6	2.0	2.4	2.8	3.1	3.4	3.8	4.1	4.4	4.7	5.1	5.5
SPRINGWOOD	9.1	10.0	10.7	11.4	12.0	12.6	13.3	13.9	14.5	15.2	15.9	16.6
ST MARYS	7.6	9.7	11.6	13.3	15.0	16.6	18.3	19.9	21.6	23.5	25.5	27.5
SUSSEX INLET	2.8	3.7	4.4	5.0	5.7	6.3	6.9	7.5	8.2	8.9	9.6	10.4
TAHMOOR	7.7	10.7	13.3	15.7	18.1	20.3	22.6	24.9	27.3	29.9	32.6	35.6
THE OAKS	2.7	3.5	4.1	4.8	5.4	6.1	6.7	7.4	8.1	8.9	9.8	10.7
TOMERONG	5.4	5.9	6.3	6.7	7.1	7.5	7.8	8.2	8.6	9.0	9.5	9.9
ULLADULLA	11.8	13.8	15.5	17.0	18.6	20.0	21.5	22.9	24.4	26.0	27.7	29.5
UNANDERRA	2.7	3.2	3.6	3.9	4.3	4.7	5.0	5.4	5.7	6.1	6.5	6.9
WARILLA	8.2	10.2	11.9	13.5	15.0	16.4	17.9	19.3	20.8	22.4	24.1	25.9
WENTWORTH FALLS	3.1	3.5	3.9	4.3	4.6	4.9	5.3	5.6	5.9	6.2	6.6	7.0
WERRINGTON	7.3	9.3	11.0	12.6	14.2	15.7	17.2	18.5	19.8	21.2	22.8	24.4
WEST CASTLE HILL	6.8	8.3	9.5	10.7	11.8	12.9	14.0	15.2	16.4	17.7	19.1	20.5
WEST LIVERPOOL 11KV	7.5	9.4	11.0	12.6	14.1	15.5	17.0	18.5	20.1	21.7	23.6	25.5
WEST PARRAMATTA	0.5	0.7	0.8	0.9	1.0	1.1	1.3	1.4	1.5	1.7	1.8	2.0
WEST PENNANT HILLS	7.7	9.0	10.1	11.2	12.2	13.2	14.2	15.3	16.4	17.5	18.8	20.1
WEST WETHERILL PARK 11KV	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9
WEST WOLLONGONG	3.3	4.2	4.9	5.6	6.3	7.0	7.6	8.3	9.0	9.7	10.4	11.2
WESTMEAD	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.1	1.2
WETHERILL PARK	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1
WHALAN	6.9	7.8	8.5	9.2	10.0	10.6	11.3	12.0	12.8	13.5	14.4	15.2
WILTON	2.0	2.3	2.6	2.9	3.2	3.4	3.6	3.9	4.1	4.4	4.7	5.0
WINDSOR	4.8	5.9	6.8	7.7	8.5	9.2	9.9	10.6	11.3	12.0	12.8	13.6
WISEMANS	1.1	1.5	1.8	2.1	2.4	2.7	2.9	3.2	3.5	3.7	4.0	4.4
WOMBARRA	2.9	3.5	4.0	4.4	4.9	5.3	5.7	6.1	6.6	7.0	7.5	8.0
WOODPARK	1.1	1.2	1.4	1.5	1.6	1.7	1.9	2.0	2.1	2.2	2.4	2.5
YATTE YATTAH	1.6	2.1	2.5	3.0	3.4	3.7	4.1	4.5	4.9	5.4	5.8	6.3
YENNORA	4.3	5.3	6.2	7.0	7.8	8.5	9.3	10.0	10.8	11.6	12.5	13.4
TOTAL	**1034.2**	**1242.8**	**1421.9**	**1590.0**	**1757.8**	**1913.7**	**2073.9**	**2235.7**	**2402.5**	**2580.0**	**2776.3**	**2980.4**

5.7 Battery storage and Endeavour Energy

Battery storage options commenced in Australia in 2016 with the release of the Tesla Powerwall. At this time, however, there were a large number of battery storage alternatives that were principally marketed to off-grid customers. Tesla have subsequently released the Powerwall 2 (13.5 kWh).

Battery only storage options are quite diversified. A sample of storage options available in the Australian market is provided in Table 5.10.

In terms of the most popular systems being sponsored by Energy Retailers include:

- Tesla Powerwall 2 (14 kWh) – Energy Australia and Origin Energy; and
- Tesla Powerwall and LG Chem – AGL Energy $7,900.

Origin Energy (June 2020) quotes the Tesla Powerwall 2 battery (14 kWh) only installation cost at $15,995 (excluding the rebate if applicable). AGL quotes around $12,000 for the Tesla Powerwall (not clear whether this includes additional inverter).

In May 2021 Solar Choice published average battery system costs by storage capacity shown in Table 5.9. As indicated in Table 5.9, battery costs remain prohibitively high for any mass market take-up. Solar Choice indicated that the average home in Sydney would require an 11.6 kWh battery and a 5 kW solar system to power their home in peak demand. Even given this, 20 per cent of their power would still come from the electricity network.

Table 5.9 Average battery system costs – May 2021

Battery storage capacity	Battery cost ($)	Battery cost plus inverter/charger to manage battery bank ($)
3 kWh	4,050	5,460
8 kWh	8,640	10,720
13 kWh	14,690	16,170
18 kWh	16,740	18,180

Source: Solar Choice.

Projections of battery take-up with new solar PV systems on the assumption that battery prices fall, or installations in residences are subsidised in the future.

For the residential sector, new installations of PV and battery as a share of all residential PV installations rises from 2 per cent in 2021 to 12 per cent by 2026, 24 per cent by 2030 and 30 per cent by 2032.

For the commercial sector, new installations of PV and battery, as a share of all commercial PV installations, rises from 3 per cent in 2021 to 20 per cent by 2026, 42 per cent by 2030 and 49 per cent by 2032.

Table 5.11 shows cumulative capacity for solar battery PV systems for Endeavour Energy by zone substation. In-house usage by these systems is shown in Table 5.12 by zone substation.

Battery only customers are unlikely to be very significant, although this depends on battery prices and the differential between peak and off-peak (and shoulder) tariffs. In this projection it is assumed that:

- residential battery only installations rise slowly up to around 0.7 per cent of residential connections by 2028; and
- commercial and industrial battery only installations rise to around 1.3 per cent of commercial and industrial connections by 2028.

Tables 5.13 to 5.16 show battery only installations by zone substation in terms of customer numbers, energy stored, impact on summer peak and impact on winter peak.

Table 5.10 Alternative battery storage options – Australia – Capacity, price and other selected indicators										
Product name	**Battery type**	**Price excluding installation (estimated retail pricing in AUD incl. GST, unless stated otherwise)**	**Nominal storage**	**Usable storage capacity**	**Power**	**Dimensions (WHD)**	**Operating temperature range**	**Warranty**	**Total warranted kWh (1 cycle per day)**	**Cost per total warranted kWh (1 cycle per day)**
Aoboet UHOME NCA	Lithium Ion (Nickel Cobalt Aluminium)	7000	6.8kWh	6.0kWh	3kW	52cm x 67cm x 23cm	-10°C to 45°C	5+5 years	10950	0.64
BYD Battery Box LVS 4 kWh	Lithium-ion (Lithium Iron Phosphate)	4090	4 kWh	3.84 kWh	3.3kW	457 x 640 x 298 mm	-10 °C to +50°C	10 years	11800	$0.35 (+ inverter cost)
Dyness Powerbox	Lithium-ion (Lithium Iron Phosphate)	10000	9.6kWh	9.6kWh	4.8kW	92cm x 55cm x 21cm	-20°C to 50°C	10 years	35040	0.29
GenZ 48V 3kWh	Lithium-ion (Lithium Iron Phosphate)	3300	3kWh (per module)	2.4kWh (per module)	3kW	42cm x 8.8cm x 57cm	0°C to 55°C	10 years	8212.5	$0.42 (+ inverter cost)
Growatt GBLI6531	Lithium ion LiFePO4	4500	6.5 kWh	6 kWh	4.2kW	47.5cm x 76.5cm x 14.5cm	-10°C~+45°C	10 years	21900	0.21
Huawei Luna (5 kWh)	Lithium ion (Lithium ion phosphate)	6000	5 kWh	5 kWh	2.5 kW	670 x 150 x 600 mm	-10℃～ + 55℃	10 years	16450	0.35

Table 5.10 Alternative battery storage options – Australia – Capacity, price and other selected indicators (continued)										
Product name	**Battery type**	**Price excluding installation (estimated retail pricing in AUD incl. GST, unless stated otherwise)**	**Nominal storage**	**Usable storage capacity**	**Power**	**Dimensions (WHD)**	**Operating temperature range**	**Warranty**	**Total warranted kWh (1 cycle per day)**	**Cost per total warranted kWh (1 cycle per day)**
LG Chem RESU HV 10	Lithium-Ion (NMC)	$9,240 (For SA homeowners, $2,990 without backup or $3,990 with backup through AGL's VPP program)	9.8kWh	9.3 kWh	5kW	74 cm x 91 cm x 20 cm	-10°C to 45°C	10 years or 27,400 kWh, whichever comes first	27400	$0.48 (+ inverter cost)
PowerPlus Energy LiFe Premium Series	Lithium-Ion (Lithium Iron Phosphate)	3550	3.3 kWh	2.64kWh	3.3kW	43cm x 8.8cm x 62cm	Charge 0°C to 55°C / Discharge -20°C to 60°C	10 years	9636	$0.37 (+ inverter cost)
Pylontech US2000B	Lithium-ion (Lithium Iron Phosphate)	$1,999	2.4kWh	2.16kWh	2kW continuous per module (stacks with each additional module)	44cm x 9cm x 41cm	0°C to 50°C	7 years product warranty	4500	$0.44 (+ inverter cost)
Redflow Zcell	Flow (Zinc-Bromide)	12600	10 kWh	10 kWh	3kW steady, 5kW peak	50cm x 115 cm x 100cm	10°C to 50 °C	Warranted total energy throughput 36.5MWh or a maximum of 10 years, whichever comes first.	36500	$0.35 (+ inverter cost)

Table 5.10 Alternative battery storage options – Australia – Capacity, price and other selected indicators (continued)										
Product name	**Battery type**	**Price excluding installation (estimated retail pricing in AUD incl. GST, unless stated otherwise)**	**Nominal storage**	**Usable storage capacity**	**Power**	**Dimensions (WHD)**	**Operating temperature range**	**Warranty**	**Total warranted kWh (1 cycle per day)**	**Cost per total warranted kWh (1 cycle per day)**
SimpliPhi PHI3.4 Smart-Tech battery	Lithium-ion (Lithium Iron Phosphate)	4700	3.4kWh	3.4kWh (or 2.75kWh if you are cycling at 80% DoD as per warranty document)	1.5kW steady (48v version) 0.75kW stead (24v version)	34 cm x 35 cm x 20 cm	0° to 49°C	10 years	11177	$0.42 (+ inverter cost)
SolaX Triple Power 4.5	Lithium Ion (NMC)	2800	4.5kWh	4.05kWh	2.5kW	46.4cm x 19.3cm x 58.8cm	-15°C to 55°C	10 years	14782	$0.19 (+ inverter cost)
SunGrow SBR HV 12.8 kWh	Lithium-ion (Lithium Iron Phosphate)	8184	12.8 kWh	12.8 kWh	7.68 kW	62 cm x 67 cm x 33 cm	-30°C to 50°C	10 years	46720	$0.18 (+ inverter cost)
Zenaji Aeon	Lithium Ion (Lithium Titanate)	3000	1.93kWh	1.93kWh	2.4kW	160cm x 15cm x 14cm	-40°C to 60°C	20 years	14089	$0.21 (+ inverter cost)
SolarWatt MyReserve Matrix	Lithium Ion	$2,000 per module + battery converter	2.4kWh	2.4kWh	800W peak (per MyReserve unit) under continuous operation	38.4cm x 20.05cm x 27.7cm (per Myreserve unit)	0°C to 45°C	5 year product warranty, 10 year battery performance warranty	4380	$0.46 (+ battery converter cost)

Table 5.10 Alternative battery storage options – Australia – Capacity, price and other selected indicators (continued)										
Product name	**Battery type**	**Price excluding installation (estimated retail pricing in AUD incl. GST, unless stated otherwise)**	**Nominal storage**	**Usable storage capacity**	**Power**	**Dimensions (WHD)**	**Operating temperature range**	**Warranty**	**Total warranted kWh (1 cycle per day)**	**Cost per total warranted kWh (1 cycle per day)**
Trinabess Powercube	Lithium Ion (Lithium Iron Phosphate)	$9,790 (includes $550 charge for extended Powerbox battery inverter warranty)	9.6kWh	8.64kWh	3kW steady	60cm x 100cm x 21cm	-10°C to 50°C	10 years	22450	$0.31 (+ inverter cost)
Delta BX 6.3AC	Lithium-Ion NMC	$7,000 inc. VPP hardware	6.32kWh	6.17kWh	3kW steady	570 x 840 x 250 mm	-10 ~ 45 ℃	10 years	19800	0.35
Sonnenbatterie Eco 9.43	Lithium-ion (Lithium Iron Phosphate)	16500	15kWh	13.5kWh	3.3kW	67cm x 186cm x 23cm	-5°C to 45 °C	10 years or 10,000 cycles, whichever comes first	49275	0.34
Tesla Powerwall 2	Lithium Ion (NMC)	$13,300 (includes "Telsa Gateway")	14 kWh	13.5 kWh	5kW steady, 7kW peak (10 seconds)	75 cm x 115 cm x 15cm	-20°C to 50°C	10 years	37,800 (assuming most people will want to use 'other applications' such as off peak charging and Reposit)	$0.31 (+ inverter cost)
ABB (Fimer) REACT 2 (4 kWh)	Lithium-ion (Lithium Iron Phosphate)	8341	4 kWh	3.8 kWh	2 kW	740 mm x 490 mm x 229 mm (inverter) 740 mm x 490 mm x 229 mm (battery unit)	-20 +55°C	10 years	13870	0.6

Table 5.10 Alternative battery storage options – Australia – Capacity, price and other selected indicators (continued)										
Product name	**Battery type**	**Price excluding installation (estimated retail pricing in AUD incl. GST, unless stated otherwise)**	**Nominal storage**	**Usable storage capacity**	**Power**	**Dimensions (WHD)**	**Operating temperature range**	**Warranty**	**Total warranted kWh (1 cycle per day)**	**Cost per total warranted kWh (1 cycle per day)**
Alpha-ESS Storion SMILE 5 – 5.5kWh	Lithium-ion (Lithium Iron Phosphate)	9042	5.7 kWh	5.5 kWh	2.8kW nominal output	120cm x 60cm x 25cm	0~40 (0.5C)	5 years product warranty, 10 years performance warranty	10037	0.9
Eguana Evolve	Lithium Ion (NMC)	14500	13kWh	12.2kWh	5 kW steady, 6kW (30 minutes), 8.5kW (3 seconds).	110cm x 78cm x 40cm	-10ºC to 45ºC	10 years	38400	0.37
Hansol AIO 10.8	Lithium Ion	13540	10.8 kWh	9.72 kWh	6.6 kW steady	140 cm x 28 cm x 120 cm	-10°C – 45˚C	5 year full warranty, 10 year battery performance warranty	34300	0.74
Opal Storage	Lithium Ion	12000	13 kWh	11.7 kWh	4.6kW	75cm x 155cm x 41cm	-10°C to 45°C	5 year inverter warranty, 10 year battery performance warranty	40000	0.3
QCells Q.HOME	Lithium Ion (Lithium Iron Phosphate)	16000	12kWh	10.8kWh	4.6kW	46cm x 72cm x 21cm	-10°C to 40°C	10 years	39420	0.41

Table 5.10 Alternative battery storage options – Australia – Capacity, price and other selected indicators (continued)										
Product name	**Battery type**	**Price excluding installation (estimated retail pricing in AUD incl. GST, unless stated otherwise)**	**Nominal storage**	**Usable storage capacity**	**Power**	**Dimensions (WHD)**	**Operating temperature range**	**Warranty**	**Total warranted kWh (1 cycle per day)**	**Cost per total warranted kWh (1 cycle per day)**
Redback SH5000 + BE13200	Lithium Ion (Lithium Iron Phosphate)	18000	13.2kWh	11.9kWh	5kW	51.6cm x 203.8cm x 20cm	0°C-45°C	5 years	Depending on battery type and manufacturer	TBD
RedEarth Sunrise 6.5kWh	Lithium Ion (NMC	9625	6.5kWh	5.2kWh	5kW	104 cm x 97 cm 54 cm	0°C-45°C	10 years	18980	0.51
Senec.HOME V3 Hybrid	Lithium Ion (Lithium Iron Phosphate)	14000	10 kWh	9 kWh	3 kW charge, 3.5 kW discharge	117 cm x 53cm x 40cm	5°C to 40 °C	10 years, can pay to extend to 20	32850	0.43
Soltaro AIO2 5kW / 5kWh	Lithium Ion (Lithium Iron Phosphate)	6990	5kWh	4.5kWh	5kW	75cm x 155cm x 41cm	-20°C to 55°C	5 + 5 years	8212	0.85
VARTA Pulse 6	Lithium-Ion (lithium-mananese-cobalt-oxide)	$7,000 – $7,200	6.5 kWh	6 kWh	2.5 kW	60cm x 69cm x 19cm	5°C to 45°C	7 years (inverter), 10 years (battery)	14946	0.48
Enphase AC Battery	Lithium Ion (Lithium Iron Phosphate)	$2,000 (fully installed)	1.2kWh	1.2kWh	260W per battery (stacks with each additional battery)	39cm x 32.5cm x 22cm	-20ºC to 45ºC	warranty, 10 years performance warranty 10 years	4161	0.48

Source: Solar Quotes, May 2021.

Table 5.11 Cumulative capacity solar PV – Endeavour Energy – Solar and Battery PV systems – Total ZSS (kW)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	192	241	301	376	481	613	782	988	1235	1537	1913	2348
ALBION PARK	301	372	458	569	726	906	1134	1409	1727	2109	2573	3097
AMBARVALE	161	215	283	366	481	623	805	1025	1286	1602	1991	2437
ANZAC VILLAGE	144	186	238	303	395	510	659	839	1056	1319	1643	2017
APPIN	49	75	107	148	205	271	355	455	575	718	893	1093
ARNDELL PARK	78	107	143	188	250	328	428	549	694	869	1085	1332
BAULKHAM HILLS 11KV	153	204	267	346	457	596	774	991	1252	1568	1958	2408
BELLA VISTA	272	359	467	607	807	1057	1379	1771	2240	2809	3507	4303
BERRY	97	132	173	226	300	391	506	645	810	1008	1248	1521
BLACKHEATH	53	65	80	98	123	155	194	242	298	365	446	538
BLACKMANS FLAT	23	46	73	106	153	210	283	371	474	598	749	921
BLAXLAND	158	182	210	246	297	356	431	520	625	751	904	1076
BOLONG	17	25	36	49	68	91	121	156	198	248	309	378
BOMADERRY	191	245	311	397	519	671	865	1097	1374	1705	2105	2556
BONNYRIGG	180	239	313	405	534	695	900	1148	1444	1802	2239	2739
BOSSLEY PARK	168	202	243	296	372	466	586	729	898	1099	1341	1613
BOW BOWING	86	112	143	185	247	324	422	540	680	848	1050	1277
BOWRAL	131	200	285	394	549	734	969	1251	1586	1988	2476	3027
BRINGELLY	50	89	139	205	301	424	585	783	1025	1323	1694	2124
BULLI	106	179	270	384	546	746	992	1289	1643	2071	2597	3198
BYLONG	1	3	4	6	9	12	16	21	26	33	41	51
CABRAMATTA	59	91	131	181	251	338	448	582	741	933	1169	1438
CAMBRIDGE PARK	230	296	376	481	633	823	1067	1361	1713	2138	2654	3238
CAMPBELLTOWN	139	207	292	402	559	758	1015	1330	1711	2177	2755	3422
CANLEY VALE	150	203	268	349	463	603	782	996	1251	1556	1930	2354
CARRAMAR	51	81	118	164	228	305	404	522	661	828	1030	1259
CASTLE HILL	68	169	293	450	671	945	1294	1715	2215	2817	3550	4383
CASULA	186	260	351	467	630	833	1093	1406	1779	2228	2778	3403
CATTAI	73	114	164	227	316	425	566	734	934	1174	1466	1797
CAWDOR	116	182	264	371	525	721	977	1294	1681	2159	2760	3463
CHERITON AVENUE	131	204	295	415	592	815	1106	1462	1892	2418	3065	3806
CHIPPING NORTON	100	126	157	199	257	332	428	545	687	860	1074	1321
CLAREMONT MEADOWS	135	219	325	456	641	872	1169	1531	1967	2497	3155	3917
CORRIMAL	133	187	253	337	458	606	795	1020	1287	1606	1990	2421
CRANEBROOK	126	182	251	340	466	623	825	1068	1357	1707	2132	2615
CULBURRA	84	122	168	225	304	401	525	673	849	1059	1317	1611
DAPTO	332	414	515	642	821	1041	1321	1657	2055	2531	3110	3764
DARKES FOREST	2	7	14	23	36	52	72	96	125	160	202	249
DOONSIDE	319	431	572	747	994	1301	1694	2171	2741	3430	4280	5253
DUNDAS	135	209	300	415	576	777	1033	1343	1713	2160	2709	3335
EAST RICHMOND	88	113	144	186	248	326	426	546	689	860	1065	1294
EASTERN CREEK	14	15	17	20	23	28	35	43	52	63	77	92
EDMONDSON PARK	72	106	148	201	275	366	483	624	792	995	1243	1526
EMU PLAINS	138	165	199	241	301	374	468	580	713	873	1068	1288
FAIRFIELD	81	99	120	146	184	231	290	361	445	546	668	805
FIGTREE	192	254	330	427	567	739	958	1220	1531	1901	2347	2847
GERRINGONG	63	74	87	104	128	158	197	243	298	364	444	535
GLENMORE PARK	271	329	401	493	622	784	990	1239	1537	1896	2336	2836
GLENORIE	43	59	80	106	144	192	254	329	419	529	663	815
GLOSSODIA	88	132	186	254	348	464	611	787	996	1246	1550	1894
GRANVILLE	68	103	147	203	282	382	510	665	852	1079	1359	1680
GREYSTANES	84	107	135	170	219	280	359	454	568	707	877	1072
HARTLEY VALE	3	4	5	6	8	10	12	15	19	23	29	35
HAZELBROOK	87	101	119	140	171	208	255	312	379	458	555	664
HELENSBURGH	55	73	96	124	163	212	275	349	437	542	669	812

Table 5.11 Cumulative capacity solar PV – Endeavour Energy – Solar and Battery PV systems – Total ZSS (kW) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
HINCHINBROOK	314	395	494	623	810	1044	1346	1714	2156	2692	3348	4097
HOLROYD	187	279	395	541	751	1012	1349	1757	2247	2841	3572	4408
HOMEPRIDE	53	96	147	219	328	466	645	864	1126	1445	1830	2263
HORSLEY PARK	44	49	55	64	76	91	110	133	161	195	235	280
HUNTINGWOOD	33	43	56	72	97	130	171	221	280	352	437	533
HUSKISSON	198	270	350	458	616	812	1063	1365	1722	2152	2667	3244
ILFORD HALL	5	9	15	21	31	43	58	75	97	122	152	186
INNER HARBOUR	1	1	1	1	1	2	2	2	3	3	4	4
JAMBEROO	28	41	57	76	103	136	178	228	288	359	447	548
JASPER RD	148	187	235	296	382	491	630	800	1004	1252	1558	1909
JORDAN SPRINGS	139	175	219	275	353	450	575	724	903	1118	1381	1681
KANDOS	29	72	124	189	278	388	528	694	890	1125	1410	1732
KANGAROO VALLEY	19	28	39	52	71	93	121	155	195	243	302	368
KATOOMBA	98	119	145	178	226	284	359	448	554	681	835	1008
KELLYVILLE	114	150	196	254	334	434	563	719	907	1136	1419	1745
KEMBLA GRANGE	55	76	101	133	177	232	302	385	486	606	754	923
KEMPS CREEK	49	68	91	121	165	219	289	374	476	600	750	920
KENNY STREET	14	15	16	18	20	23	27	31	37	43	51	59
KENTHURST	151	238	340	474	666	907	1218	1596	2051	2602	3277	4049
KENTLYN	268	365	476	620	827	1085	1415	1812	2285	2853	3542	4320
KIAMA	147	191	246	315	414	536	692	880	1105	1375	1706	2081
KINGSWOOD	191	302	438	620	887	1222	1652	2172	2794	3544	4450	5471
KURRAJONG	101	149	210	284	387	515	676	870	1099	1373	1708	2087
LEABONS LANE	87	133	191	263	364	489	649	843	1075	1355	1702	2099
LENNOX	27	61	93	142	218	315	440	594	779	1003	1272	1571
LITHGOW	132	179	237	311	414	541	702	895	1122	1394	1724	2095
LIVERPOOL 11KV	157	192	231	294	395	525	693	899	1147	1448	1803	2196
LUDDENHAM	38	79	130	195	287	403	553	739	964	1241	1586	1989
MACQUARIE FIELDS	242	345	471	626	851	1131	1487	1916	2426	3038	3776	4606
MALDON	161	269	402	561	789	1072	1435	1875	2401	3036	3813	4699
MAMRE	225	287	363	460	598	765	980	1239	1550	1924	2384	2909
MARAYONG	96	158	235	335	468	634	847	1105	1414	1788	2246	2767
MARSDEN PARK	171	197	228	266	319	383	466	566	685	828	1004	1204
MEADOW FLAT	10	15	20	27	37	48	63	81	102	128	158	192
MINTO	370	453	555	685	869	1096	1387	1735	2150	2646	3250	3932
MITTAGONG	158	210	274	357	474	618	802	1025	1291	1613	2006	2455
MOOREBANK	71	108	154	214	301	411	554	727	935	1187	1495	1845
MOSS VALE	153	214	288	384	524	697	918	1184	1500	1878	2335	2848
MOUNT OUSLEY	94	138	192	260	358	478	630	813	1028	1286	1597	1946
MUNGERIE PARK	654	812	1008	1261	1625	2081	2668	3380	4233	5265	6528	7967
NARELLAN	435	535	661	832	1088	1420	1860	2410	3091	3940	5008	6258
NEPEAN 11KV	322	439	589	786	1077	1435	1911	2506	3242	4161	5327	6703
NEWTON	129	157	191	235	297	375	475	597	742	918	1133	1378
NORTH EASTERN CREEK	10	11	13	15	19	24	30	38	47	59	72	87
NORTH LEPPINGTON	21	46	78	119	175	245	336	447	580	743	944	1177
NORTH PARRAMATTA	75	107	147	198	271	367	491	642	824	1045	1318	1631
NORTH RICHMOND	87	130	183	250	346	464	615	796	1011	1269	1581	1933
NORTH ROCKS	75	102	136	178	237	311	406	521	660	828	1038	1280
NORTH WARRAGAMBA	84	142	216	308	437	596	800	1047	1342	1699	2139	2642
NORTH WOLLONGONG	44	79	120	179	252	343	459	599	764	961	1195	1454
NORTHMEAD	76	110	153	207	283	379	502	652	833	1052	1323	1634
NOWRA	136	201	280	382	526	704	932	1205	1530	1919	2391	2925
OAKDALE	16	34	56	85	124	174	238	315	407	519	656	813
ORAN PARK	245	398	595	847	1209	1673	2288	3056	4005	5191	6704	8499
PARKLEA	644	771	928	1131	1423	1789	2235	2777	3429	4221	5196	6314
PENRITH 11KV	60	113	177	268	407	582	773	1006	1283	1618	2018	2465
PLUMPTON	222	295	385	500	664	868	1131	1448	1829	2289	2853	3496

Table 5.11 Cumulative capacity solar PV – Endeavour Energy – Solar and Battery PV systems – Total ZSS (kW) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	37	59	86	123	177	245	332	437	560	709	886	1084
PORT KEMBLA	86	140	207	292	412	561	751	979	1249	1573	1965	2409
PORTLAND	36	47	61	78	102	132	169	214	268	331	408	495
PRESTONS	260	324	404	506	651	838	1080	1376	1734	2172	2715	3343
PROSPECT	108	126	150	179	221	273	341	424	523	644	793	964
QUAKERS HILL	283	375	490	634	837	1090	1415	1809	2280	2850	3551	4353
QUARRIES	56	73	94	122	162	211	275	352	444	556	694	850
RINGWOOD	70	93	120	155	205	267	346	440	552	687	850	1034
RIVERSTONE	217	262	315	391	505	649	834	1058	1326	1650	2037	2470
ROBERTSON	44	69	100	138	193	261	348	453	579	731	919	1134
ROOTY HILL	266	350	454	587	777	1013	1317	1684	2124	2656	3309	4053
ROSEHILL	17	27	41	58	84	117	160	212	274	350	442	547
RUSSELL VALE	116	173	242	331	457	612	808	1044	1322	1654	2055	2507
RYDALMERE	127	181	248	334	458	612	812	1054	1345	1699	2134	2631
SCHOFIELDS	327	438	575	748	992	1296	1686	2158	2723	3406	4247	5209
SEVEN HILLS	108	126	148	177	222	277	349	437	541	668	821	994
SHELLHARBOUR	232	329	447	600	821	1096	1448	1873	2379	2987	3726	4560
SHERWOOD	105	144	192	256	350	468	619	803	1023	1288	1608	1970
SMITHFIELD	198	247	308	383	489	624	796	1001	1244	1534	1884	2279
SOUTH GRANVILLE	62	96	139	191	265	356	472	613	782	986	1237	1525
SOUTH LEPPINGTON	183	263	361	487	666	889	1176	1523	1938	2440	3056	3760
SOUTH MARSDEN PARK	46	91	148	221	327	460	635	850	1111	1432	1831	2294
SOUTH NOWRA	51	64	80	102	133	172	223	283	355	441	544	659
SOUTH WINDSOR	194	270	363	480	647	854	1119	1438	1817	2274	2828	3456
SOUTH WOLLONGONG	34	52	73	103	147	203	273	358	459	579	721	878
SPRINGWOOD	177	207	243	288	351	428	526	642	780	945	1145	1371
ST MARYS	146	223	317	440	618	840	1125	1470	1883	2381	2987	3674
SUSSEX INLET	54	83	118	163	227	303	401	519	660	829	1037	1274
TAHMOOR	148	252	380	543	775	1064	1434	1881	2416	3062	3853	4755
THE OAKS	50	77	110	153	213	289	389	511	661	846	1078	1351
TOMERONG	102	119	140	167	203	249	306	376	458	557	678	815
ULLADULLA	238	311	400	515	680	885	1147	1461	1834	2280	2820	3427
UNANDERRA	58	75	97	125	165	215	278	353	442	549	677	821
WARILLA	157	229	317	422	570	753	987	1268	1603	2006	2497	3053
WENTWORTH FALLS	59	75	94	118	154	193	244	305	378	466	573	694
WERRINGTON	145	219	308	428	607	832	1121	1397	1727	2126	2611	3158
WEST CASTLE HILL	131	181	242	320	430	568	746	962	1221	1536	1925	2372
WEST LIVERPOOL 11KV	147	216	301	414	583	794	1067	1399	1797	2280	2866	3530
WEST PARRAMATTA	13	19	26	35	51	76	108	147	194	252	321	397
WEST PENNANT HILLS	146	191	247	319	421	549	714	915	1156	1448	1809	2223
WEST WETHERILL PARK 11KV	42	44	46	48	52	56	62	69	77	87	99	112
WEST WOLLONGONG	65	96	135	183	248	330	433	556	702	876	1088	1329
WESTMEAD	6	10	15	21	29	40	54	71	92	117	147	181
WETHERILL PARK	44	49	56	64	78	95	116	142	173	209	253	301
WHALAN	132	164	202	253	324	414	529	669	836	1038	1286	1568
WILTON	38	50	64	83	107	138	176	223	279	346	428	522
WINDSOR	93	133	182	244	335	423	536	671	831	1023	1257	1520
WISEMANS	21	36	54	78	113	151	199	257	326	409	508	619
WOMBARRA	57	78	103	135	179	234	303	386	484	601	744	904
WOODPARK	26	32	39	49	64	82	106	135	170	212	262	319
YATTE YATTAH	30	48	69	96	133	180	239	311	396	500	628	775
YENNORA	84	120	164	218	295	388	507	649	817	1018	1262	1537
TOTAL	**20114**	**27512**	**36607**	**48280**	**64960**	**85702**	**112289**	**144414**	**182863**	**229383**	**286344**	**351282**

Table 5.12 In-house use – Endeavour Energy by ZSS – Solar and battery PV systems (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.2	0.3	0.4	0.4	0.6	0.7	0.9	1.2	1.5	1.8	2.3	2.8
ALBION PARK	0.4	0.4	0.5	0.7	0.9	1.1	1.3	1.7	2.0	2.5	3.0	3.6
AMBARVALE	0.2	0.3	0.3	0.4	0.6	0.7	1.0	1.2	1.5	1.9	2.4	2.9
ANZAC VILLAGE	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.6	1.9	2.4
APPIN	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.3
ARNDELL PARK	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6
BAULKHAM HILLS 11KV	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.3	2.8
BELLA VISTA	0.3	0.4	0.5	0.7	0.9	1.2	1.6	2.1	2.6	3.3	4.1	5.1
BERRY	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8
BLACKHEATH	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6
BLACKMANS FLAT	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1
BLAXLAND	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.2
BOLONG	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
BOMADERRY	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.5	3.0
BONNYRIGG	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.4	1.7	2.1	2.6	3.2
BOSSLEY PARK	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.9	1.1	1.3	1.6	1.9
BOW BOWING	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
BOWRAL	0.2	0.2	0.3	0.5	0.6	0.9	1.1	1.5	1.9	2.3	2.9	3.6
BRINGELLY	0.1	0.1	0.2	0.2	0.4	0.5	0.7	0.9	1.2	1.6	2.0	2.5
BULLI	0.1	0.2	0.3	0.4	0.6	0.9	1.1	1.5	1.9	2.4	3.0	3.7
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
CABRAMATTA	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7
CAMBRIDGE PARK	0.3	0.3	0.4	0.6	0.7	1.0	1.2	1.6	2.0	2.5	3.1	3.8
CAMPBELLTOWN	0.2	0.2	0.3	0.5	0.7	0.9	1.2	1.6	2.0	2.6	3.3	4.0
CANLEY VALE	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.3	2.8
CARRAMAR	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
CASTLE HILL	0.1	0.2	0.3	0.5	0.8	1.1	1.5	2.0	2.6	3.3	4.2	5.2
CASULA	0.2	0.3	0.4	0.6	0.7	1.0	1.3	1.7	2.1	2.6	3.3	4.0
CATTAI	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7	2.1
CAWDOR	0.1	0.2	0.3	0.4	0.6	0.9	1.2	1.5	2.0	2.6	3.3	4.1
CHERITON AVENUE	0.2	0.2	0.3	0.5	0.7	1.0	1.3	1.7	2.2	2.8	3.6	4.5
CHIPPING NORTON	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6
CLAREMONT MEADOWS	0.2	0.3	0.4	0.5	0.8	1.0	1.4	1.8	2.3	2.9	3.7	4.6
CORRIMAL	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.3	2.8
CRANEBROOK	0.1	0.2	0.3	0.4	0.5	0.7	1.0	1.2	1.6	2.0	2.5	3.0
CULBURRA	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.9
DAPTO	0.4	0.5	0.6	0.7	0.9	1.2	1.5	1.9	2.3	2.9	3.5	4.3
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
DOONSIDE	0.4	0.5	0.7	0.9	1.2	1.5	2.0	2.6	3.2	4.0	5.0	6.2
DUNDAS	0.2	0.2	0.4	0.5	0.7	0.9	1.2	1.6	2.0	2.5	3.2	3.9
EAST RICHMOND	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
EDMONDSON PARK	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.8
EMU PLAINS	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.5
FAIRFIELD	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	0.9
FIGTREE	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.4	1.7	2.2	2.7	3.2
GERRINGONG	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6
GLENMORE PARK	0.3	0.4	0.5	0.6	0.7	0.9	1.2	1.4	1.8	2.2	2.7	3.3
GLENORIE	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0
GLOSSODIA	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.2
GRANVILLE	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6	2.0
GREYSTANES	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.3
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.7	0.8
HELENSBURGH	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9

Table 5.12 In-house use – Endeavour Energy by ZSS – Solar and battery PV systems (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0.4	0.5	0.6	0.7	1.0	1.2	1.6	2.0	2.5	3.2	4.0	4.8
HOLROYD	0.2	0.3	0.5	0.6	0.9	1.2	1.6	2.1	2.6	3.3	4.2	5.2
HOMEPRIDE	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.7	2.2	2.7
HORSLEY PARK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
HUNTINGWOOD	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
HUSKISSON	0.2	0.3	0.4	0.5	0.7	1.0	1.2	1.6	2.0	2.5	3.1	3.8
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
JASPER RD	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.8	2.2
JORDAN SPRINGS	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.3	1.6	2.0
KANDOS	0.0	0.1	0.2	0.2	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.3
KANGAROO VALLEY	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
KATOOMBA	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.2
KELLYVILLE	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.3	1.7	2.1
KEMBLA GRANGE	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.0
KEMPS CREEK	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
KENTHURST	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.9	2.4	3.1	3.9	4.8
KENTLYN	0.3	0.4	0.6	0.7	1.0	1.3	1.7	2.1	2.7	3.4	4.2	5.1
KIAMA	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.4
KINGSWOOD	0.2	0.4	0.5	0.7	1.0	1.4	1.9	2.5	3.2	4.1	5.2	6.4
KURRAJONG	0.1	0.2	0.2	0.3	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.5
LEABONS LANE	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6	2.0	2.5
LENNOX	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8
LITHGOW	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.3	1.7	2.0	2.5
LIVERPOOL 11KV	0.2	0.2	0.3	0.3	0.5	0.6	0.8	1.1	1.4	1.7	2.1	2.6
LUDDENHAM	0.0	0.1	0.2	0.2	0.3	0.5	0.6	0.9	1.1	1.4	1.8	2.3
MACQUARIE FIELDS	0.3	0.4	0.6	0.7	1.0	1.3	1.8	2.3	2.9	3.6	4.5	5.4
MALDON	0.2	0.3	0.5	0.7	0.9	1.3	1.7	2.2	2.8	3.6	4.5	5.6
MAMRE	0.3	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.3	2.8	3.4
MARAYONG	0.1	0.2	0.3	0.4	0.6	0.7	1.0	1.3	1.7	2.1	2.6	3.3
MARSDEN PARK	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.7	0.8	1.0	1.2	1.4
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
MINTO	0.4	0.5	0.7	0.8	1.0	1.3	1.6	2.1	2.5	3.1	3.8	4.6
MITTAGONG	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.9	2.4	2.9
MOOREBANK	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.8	2.2
MOSS VALE	0.2	0.3	0.3	0.5	0.6	0.8	1.1	1.4	1.8	2.2	2.7	3.3
MOUNT OUSLEY	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.2
MUNGERIE PARK	0.8	1.0	1.2	1.5	1.9	2.4	3.1	4.0	5.0	6.2	7.7	9.4
NARELLAN	0.5	0.6	0.8	1.0	1.3	1.7	2.2	2.8	3.7	4.7	5.9	7.4
NEPEAN 11KV	0.4	0.5	0.7	0.9	1.3	1.7	2.3	3.0	3.8	4.9	6.3	7.9
NEWTON	0.2	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
NORTH LEPPINGTON	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4
NORTH PARRAMATTA	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.6	1.9
NORTH RICHMOND	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.3
NORTH ROCKS	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
NORTH WARRAGAMBA	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.6	2.0	2.5	3.1
NORTH WOLLONGONG	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7
NORTHMEAD	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.6	1.9
NOWRA	0.2	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.8	2.3	2.8	3.4
OAKDALE	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0
ORAN PARK	0.3	0.5	0.7	1.0	1.4	2.0	2.7	3.6	4.7	6.1	7.9	10.0
PARKLEA	0.8	0.9	1.1	1.3	1.7	2.1	2.6	3.3	4.0	5.0	6.1	7.4
PENRITH 11KV	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.5	1.9	2.3	2.9
PLUMPTON	0.3	0.3	0.5	0.6	0.8	1.0	1.3	1.7	2.2	2.7	3.4	4.1

Table 5.12 In-house use – Endeavour Energy by ZSS – Solar and battery PV systems (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.3
PORT KEMBLA	0.1	0.2	0.2	0.3	0.5	0.6	0.9	1.1	1.4	1.8	2.2	2.7
PORTLAND	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
PRESTONS	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.6	3.2	4.0
PROSPECT	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	0.9	1.1
QUAKERS HILL	0.3	0.4	0.6	0.7	1.0	1.3	1.7	2.1	2.7	3.4	4.2	5.1
QUARRIES	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0
RINGWOOD	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2
RIVERSTONE	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.6	1.9	2.4	2.9
ROBERTSON	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.3
ROOTY HILL	0.3	0.4	0.5	0.7	0.9	1.2	1.5	2.0	2.5	3.1	3.9	4.8
ROSEHILL	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
RUSSELL VALE	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.4	2.9
RYDALMERE	0.1	0.2	0.3	0.4	0.5	0.7	1.0	1.2	1.6	2.0	2.5	3.1
SCHOFIELDS	0.4	0.5	0.7	0.9	1.2	1.5	2.0	2.5	3.2	4.0	5.0	6.1
SEVEN HILLS	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.2
SHELLHARBOUR	0.3	0.4	0.5	0.7	1.0	1.3	1.7	2.2	2.8	3.5	4.4	5.4
SHERWOOD	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.3
SMITHFIELD	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.2	1.5	1.8	2.2	2.7
SOUTH GRANVILLE	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.8
SOUTH LEPPINGTON	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.8	2.3	2.9	3.6	4.4
SOUTH MARSDEN PARK	0.1	0.1	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.7	2.2	2.7
SOUTH NOWRA	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8
SOUTH WINDSOR	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.7	2.1	2.7	3.3	4.1
SOUTH WOLLONGONG	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0
SPRINGWOOD	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.3	1.6
ST MARYS	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.7	2.2	2.8	3.5	4.3
SUSSEX INLET	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
TAHMOOR	0.2	0.3	0.4	0.6	0.9	1.3	1.7	2.2	2.9	3.6	4.6	5.6
THE OAKS	0.1	0.1	0.1	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.3	1.6
TOMERONG	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.7	0.8	1.0
ULLADULLA	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.7	2.1	2.6	3.2	3.9
UNANDERRA	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9
WARILLA	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.4	2.9	3.6
WENTWORTH FALLS	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.6	0.7	0.8
WERRINGTON	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.6	2.0	2.5	3.1	3.7
WEST CASTLE HILL	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.8	2.3	2.8
WEST LIVERPOOL 11KV	0.2	0.3	0.4	0.5	0.7	0.9	1.3	1.7	2.1	2.7	3.4	4.2
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
WEST PENNANT HILLS	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.4	1.7	2.1	2.6
WEST WETHERILL PARK 11KV	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WEST WOLLONGONG	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
WETHERILL PARK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4
WHALAN	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8
WILTON	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
WINDSOR	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8
WISEMANS	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
WOMBARRA	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.0
WOODPARK	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4
YATTE YATTAH	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9
YENNORA	0.1	0.1	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.8
TOTAL	**23.6**	**32.3**	**43.0**	**56.7**	**76.3**	**100.6**	**131.9**	**169.6**	**214.8**	**269.4**	**336.3**	**412.6**

Table 5.13 Customer numbers – Endeavour Energy by ZSS – Battery only systems												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	5	19	30	40	51	63	75	76	78	80	81	83
ALBION PARK	6	24	37	49	62	75	88	89	89	90	90	91
AMBARVALE	4	18	28	38	48	59	69	71	72	73	74	75
ANZAC VILLAGE	3	14	21	29	37	46	55	56	57	59	60	62
APPIN	1	4	6	8	10	12	14	14	14	14	14	15
ARNDELL PARK	3	12	18	25	32	39	47	48	49	49	50	51
BAULKHAM HILLS 11KV	5	20	31	43	55	67	80	81	83	85	86	88
BELLA VISTA	4	18	28	38	48	59	71	72	73	75	76	78
BERRY	2	8	12	16	20	24	28	28	28	28	29	29
BLACKHEATH	2	9	13	17	22	26	30	30	30	30	30	30
BLACKMANS FLAT	1	3	5	7	9	11	12	13	13	13	13	13
BLAXLAND	4	16	23	31	39	47	55	54	54	54	54	54
BOLONG	0	2	3	4	4	5	6	6	6	6	6	6
BOMADERRY	4	17	26	35	44	53	62	62	62	63	63	63
BONNYRIGG	6	24	37	50	64	77	91	92	93	95	96	97
BOSSLEY PARK	4	15	22	30	38	45	53	53	53	53	53	53
BOW BOWING	3	10	15	21	26	32	38	38	38	39	39	40
BOWRAL	4	17	26	35	44	53	62	63	63	63	64	64
BRINGELLY	1	6	9	12	16	20	24	25	26	27	28	29
BULLI	3	13	21	28	35	43	51	52	52	53	54	55
BYLONG	0	0	0	1	1	1	1	1	1	1	1	1
CABRAMATTA	3	13	20	27	34	41	48	49	49	50	50	51
CAMBRIDGE PARK	4	18	27	36	46	57	67	68	69	70	71	72
CAMPBELLTOWN	5	22	34	47	61	75	90	93	96	99	103	107
CANLEY VALE	7	29	44	59	75	91	106	107	108	109	109	111
CARRAMAR	4	16	24	32	40	48	56	56	56	56	56	56
CASTLE HILL	3	12	19	25	32	38	45	45	45	46	46	46
CASULA	5	21	31	43	54	66	78	80	81	82	83	85
CATTAI	2	7	10	14	17	21	24	24	24	25	25	25
CAWDOR	3	14	22	31	41	51	63	66	69	72	76	80
CHERITON AVENUE	3	14	22	30	39	48	58	60	61	63	65	67
CHIPPING NORTON	3	11	17	24	30	38	45	46	47	49	50	51
CLAREMONT MEADOWS	4	18	27	37	48	59	70	72	73	75	77	80
CORRIMAL	5	21	32	43	54	65	76	76	77	77	77	77
CRANEBROOK	3	11	17	24	30	37	43	44	44	45	45	46
CULBURRA	4	14	22	29	36	44	51	51	52	52	52	52
DAPTO	7	28	42	56	71	86	100	101	101	102	102	103
DARKES FOREST	0	0	0	0	0	1	1	1	1	1	1	1
DOONSIDE	9	35	53	73	93	114	136	138	141	144	146	149
DUNDAS	8	32	49	67	85	104	124	126	128	130	132	134
EAST RICHMOND	3	12	18	24	30	36	43	43	43	43	43	44
EASTERN CREEK	0	1	1	1	1	2	2	2	2	2	2	2
EDMONDSON PARK	1	5	8	11	14	17	20	21	21	21	21	22
EMU PLAINS	4	15	22	30	37	45	53	53	53	53	53	53
FAIRFIELD	4	17	26	35	44	53	62	62	62	62	62	62
FIGTREE	5	19	29	39	49	59	69	69	69	69	69	70
GERRINGONG	2	7	11	14	18	22	26	26	27	27	27	27
GLENMORE PARK	5	19	29	39	50	61	73	74	75	76	77	78
GLENORIE	1	3	5	6	8	10	12	12	12	13	13	13
GLOSSODIA	2	8	12	17	21	25	29	29	29	29	29	29
GRANVILLE	6	23	35	47	60	73	86	88	89	90	91	93
GREYSTANES	3	14	21	29	37	45	53	53	54	54	55	56
HARTLEY VALE	0	1	1	1	2	2	2	2	2	2	2	2
HAZELBROOK	3	11	16	21	27	32	37	37	37	37	36	36
HELENSBURGH	2	6	10	13	16	19	23	23	23	23	23	23

Table 5.13 Customer numbers – Endeavour Energy by ZSS – Battery only systems (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	6	26	40	55	71	87	104	106	108	110	113	116
HOLROYD	9	36	55	74	94	115	136	138	140	142	144	146
HOMEPRIDE	5	21	33	45	58	71	84	86	88	89	91	94
HORSLEY PARK	1	3	4	5	7	8	10	10	10	10	10	10
HUNTINGWOOD	1	3	4	5	7	8	10	10	10	10	10	10
HUSKISSON	4	18	27	36	45	55	64	64	64	64	65	65
ILFORD HALL	0	1	1	1	2	2	2	2	2	2	2	2
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	1	2	3	5	6	7	8	9	9	9	9	9
JASPER RD	6	24	36	50	64	78	93	95	97	100	102	104
JORDAN SPRINGS	3	12	18	24	31	37	44	44	45	46	46	47
KANDOS	1	5	7	10	12	14	17	17	17	17	17	17
KANGAROO VALLEY	1	2	3	4	6	7	8	8	8	8	8	8
KATOOMBA	5	18	27	37	46	55	64	63	63	63	63	63
KELLYVILLE	2	10	15	21	26	32	39	39	40	41	42	43
KEMBLA GRANGE	1	5	7	10	13	15	18	18	19	19	19	19
KEMPS CREEK	1	5	7	10	12	15	18	18	19	19	19	20
KENNY STREET	2	6	9	12	15	18	21	21	21	22	22	22
KENTHURST	2	10	15	20	26	31	37	38	39	39	40	41
KENTLYN	6	26	39	54	68	83	98	99	101	102	103	105
KIAMA	4	16	24	32	41	50	59	60	61	61	62	63
KINGSWOOD	7	27	42	57	73	88	105	106	108	109	111	113
KURRAJONG	2	9	13	17	22	26	30	30	30	30	30	30
LEABONS LANE	4	15	23	32	40	49	59	60	61	62	63	65
LENNOX	6	25	38	52	67	81	97	99	100	102	104	106
LITHGOW	4	17	26	35	44	52	61	61	61	61	61	61
LIVERPOOL 11KV	7	28	42	58	74	91	108	110	112	115	117	120
LUDDENHAM	1	3	5	6	8	10	12	13	13	14	14	15
MACQUARIE FIELDS	6	24	36	49	62	75	89	90	91	92	93	94
MALDON	3	11	17	23	29	35	42	42	43	44	44	45
MAMRE	4	17	27	36	47	57	67	68	70	71	72	73
MARAYONG	4	15	23	31	40	49	58	59	60	61	62	64
MARSDEN PARK	2	9	14	18	23	28	33	33	33	34	34	34
MEADOW FLAT	0	1	2	2	3	3	4	4	4	4	4	4
MINTO	8	34	51	69	88	107	126	128	129	130	132	134
MITTAGONG	4	17	25	34	43	53	63	63	64	65	66	67
MOOREBANK	2	10	15	21	26	32	38	39	40	41	41	42
MOSS VALE	4	15	23	31	39	48	56	56	57	57	57	58
MOUNT OUSLEY	4	15	23	31	39	47	55	55	55	55	55	55
MUNGERIE PARK	10	40	61	84	107	131	155	158	160	163	166	169
NARELLAN	8	34	55	77	103	131	161	171	181	192	203	216
NEPEAN 11KV	5	23	36	51	68	87	108	115	122	130	138	147
NEWTON	4	15	23	32	40	49	59	60	61	62	63	64
NORTH EASTERN CREEK	0	0	1	1	1	1	1	1	1	1	1	1
NORTH LEPPINGTON	1	3	5	7	9	11	13	13	13	14	14	14
NORTH PARRAMATTA	7	30	46	63	81	99	119	122	125	128	131	134
NORTH RICHMOND	2	8	11	15	19	23	27	27	27	27	27	28
NORTH ROCKS	3	12	18	25	32	39	46	47	48	49	50	51
NORTH WARRAGAMBA	2	6	10	13	17	21	25	25	25	26	26	27
NORTH WOLLONGONG	4	15	23	31	39	47	55	55	55	55	55	55
NORTHMEAD	4	16	24	33	42	51	61	63	64	65	67	68
NOWRA	5	19	28	38	48	58	68	68	68	68	69	69
OAKDALE	0	2	3	3	4	5	6	6	7	7	7	7
ORAN PARK	5	22	35	50	66	85	105	111	118	125	133	141
PARKLEA	9	37	57	79	101	124	148	151	155	158	162	167
PENRITH 11KV	4	16	25	33	42	52	61	62	63	63	64	65
PLUMPTON	7	28	43	59	75	92	109	112	114	116	118	121

Table 5.13 Customer numbers – Endeavour Energy by ZSS – Battery only systems (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	2	8	12	16	20	24	29	29	29	29	29	29
PORT KEMBLA	4	15	23	30	38	46	54	55	55	55	56	56
PORTLAND	1	3	4	6	7	8	10	10	10	10	10	10
PRESTONS	4	18	27	38	49	60	72	75	77	79	81	84
PROSPECT	4	18	27	37	48	58	69	70	71	72	73	75
QUAKERS HILL	7	27	42	57	73	89	106	108	110	112	114	116
QUARRIES	2	7	11	15	19	23	28	28	29	29	30	30
RINGWOOD	2	7	10	14	18	21	25	25	25	25	26	26
RIVERSTONE	3	12	18	24	30	36	43	43	44	44	45	45
ROBERTSON	1	4	6	9	11	14	16	16	17	17	17	17
ROOTY HILL	5	20	31	43	55	67	80	81	83	84	86	87
ROSEHILL	2	7	11	15	18	23	27	27	28	28	29	29
RUSSELL VALE	4	18	27	36	45	54	63	63	64	64	64	64
RYDALMERE	7	27	41	56	72	88	105	107	110	112	114	117
SCHOFIELDS	5	21	32	44	57	69	82	84	85	87	88	90
SEVEN HILLS	3	13	20	27	35	42	50	51	52	53	54	55
SHELLHARBOUR	6	25	38	52	66	80	95	96	97	98	99	101
SHERWOOD	6	23	34	46	58	70	83	83	84	84	85	85
SMITHFIELD	6	25	38	51	63	76	89	89	89	89	90	90
SOUTH GRANVILLE	4	15	23	31	40	48	57	57	57	58	58	59
SOUTH LEPPINGTON	3	11	18	24	31	38	45	46	47	48	49	50
SOUTH MARSDEN PARK	1	3	5	7	9	11	14	14	15	16	16	17
SOUTH NOWRA	1	5	8	10	13	16	19	19	19	19	19	19
SOUTH WINDSOR	4	18	28	37	47	57	67	67	68	68	69	70
SOUTH WOLLONGONG	3	12	18	24	30	36	42	42	42	42	42	42
SPRINGWOOD	5	18	28	37	46	55	64	64	64	64	63	63
ST MARYS	5	21	32	44	56	69	81	83	84	85	87	88
SUSSEX INLET	2	8	12	16	20	25	29	29	30	30	31	31
TAHMOOR	3	14	21	29	37	45	53	54	55	55	56	57
THE OAKS	1	4	7	10	13	16	20	21	22	23	24	25
TOMERONG	3	11	16	22	28	33	39	39	39	39	39	40
ULLADULLA	7	28	42	56	71	85	100	100	101	101	101	102
UNANDERRA	2	7	10	14	17	21	24	24	24	24	24	24
WARILLA	5	22	34	45	58	70	83	84	84	85	86	88
WENTWORTH FALLS	2	8	12	16	20	24	28	28	28	28	28	29
WERRINGTON	6	23	35	48	61	75	88	90	91	93	94	96
WEST CASTLE HILL	4	15	24	32	41	51	60	62	63	64	66	67
WEST LIVERPOOL 11KV	5	21	33	45	57	70	83	85	87	88	90	92
WEST PARRAMATTA	3	11	17	23	29	36	42	43	44	44	45	46
WEST PENNANT HILLS	3	12	19	26	34	41	49	50	52	53	54	55
WEST WETHERILL PARK 11KV	1	3	5	7	9	11	13	13	13	13	13	13
WEST WOLLONGONG	3	13	20	27	34	41	47	47	47	48	48	48
WESTMEAD	2	9	14	19	25	30	36	37	38	38	39	40
WETHERILL PARK	1	4	6	8	11	13	15	15	15	15	15	15
WHALAN	5	21	32	43	56	68	81	82	84	85	87	89
WILTON	1	3	4	6	7	9	10	10	11	11	11	11
WINDSOR	2	10	15	20	25	30	35	35	35	35	35	35
WISEMANS	1	3	4	5	7	8	10	10	10	10	10	10
WOMBARRA	2	6	10	13	17	20	23	23	23	23	23	23
WOODPARK	1	2	3	4	5	6	8	8	8	8	8	8
YATTE YATTAH	1	5	7	10	12	15	18	18	18	19	19	19
YENNORA	3	13	20	27	34	41	48	48	49	49	49	49
TOTAL	**567**	**2308**	**3527**	**4790**	**6094**	**7434**	**8805**	**8935**	**9071**	**9214**	**9363**	**9538**

Table 5.14 Energy stored – Endeavour Energy by ZSS – Battery only systems (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.7
ALBION PARK	0.0	0.2	0.3	0.4	0.5	0.6	0.8	0.8	0.8	0.8	0.8	0.9
AMBARVALE	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.7	0.7
ANZAC VILLAGE	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.6
APPIN	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ARNDELL PARK	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5
BAULKHAM HILLS 11KV	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.7	0.8	0.8	0.8	0.8
BELLA VISTA	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.8
BERRY	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
BLACKHEATH	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
BLACKMANS FLAT	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BLAXLAND	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
BOLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
BOMADERRY	0.0	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6
BONNYRIGG	0.0	0.2	0.3	0.4	0.5	0.6	0.8	0.8	0.8	0.8	0.9	0.9
BOSSLEY PARK	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
BOW BOWING	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
BOWRAL	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6
BRINGELLY	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
BULLI	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5
CAMBRIDGE PARK	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6
CAMPBELLTOWN	0.0	0.2	0.3	0.4	0.5	0.7	0.9	1.0	1.0	1.1	1.1	1.1
CANLEY VALE	0.0	0.2	0.3	0.4	0.6	0.8	0.9	1.0	1.0	1.0	1.0	1.0
CARRAMAR	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.6
CASTLE HILL	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5
CASULA	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.8	0.8
CATTAI	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
CAWDOR	0.0	0.1	0.2	0.2	0.3	0.4	0.6	0.6	0.7	0.7	0.7	0.8
CHERITON AVENUE	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.6
CHIPPING NORTON	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5
CLAREMONT MEADOWS	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.7
CORRIMAL	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.7	0.7	0.7	0.7	0.7
CRANEBROOK	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
CULBURRA	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5
DAPTO	0.0	0.2	0.3	0.4	0.5	0.7	0.8	0.9	0.9	0.9	0.9	0.9
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DOONSIDE	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.2	1.2	1.3	1.3	1.3
DUNDAS	0.0	0.2	0.3	0.5	0.7	0.8	1.0	1.1	1.1	1.2	1.2	1.2
EAST RICHMOND	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EDMONDSON PARK	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
EMU PLAINS	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
FAIRFIELD	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6
FIGTREE	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6
GERRINGONG	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
GLENMORE PARK	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.7
GLENORIE	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GLOSSODIA	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
GRANVILLE	0.0	0.2	0.2	0.4	0.5	0.6	0.8	0.8	0.8	0.9	0.9	0.9
GREYSTANES	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
HELENSBURGH	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Table 5.14 Energy stored – Endeavour Energy by ZSS – Battery only systems (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0.0	0.2	0.3	0.4	0.5	0.7	0.9	0.9	1.0	1.0	1.0	1.0
HOLROYD	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.2	1.2	1.3	1.3	1.3
HOMEPRIDE	0.0	0.1	0.2	0.3	0.5	0.6	0.8	0.8	0.9	0.9	0.9	0.9
HORSLEY PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HUNTINGWOOD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HUSKISSON	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
JASPER RD	0.0	0.2	0.3	0.4	0.5	0.6	0.8	0.8	0.9	0.9	0.9	1.0
JORDAN SPRINGS	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
KANDOS	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
KANGAROO VALLEY	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
KATOOMBA	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6
KELLYVILLE	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4
KEMBLA GRANGE	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
KEMPS CREEK	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
KENNY STREET	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
KENTHURST	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4
KENTLYN	0.0	0.2	0.3	0.4	0.5	0.7	0.8	0.9	0.9	0.9	0.9	0.9
KIAMA	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.6
KINGSWOOD	0.0	0.2	0.3	0.4	0.6	0.8	0.9	1.0	1.0	1.0	1.1	1.1
KURRAJONG	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
LEABONS LANE	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.6	0.6	0.6
LENNOX	0.0	0.2	0.3	0.4	0.5	0.7	0.9	0.9	1.0	1.0	1.0	1.0
LITHGOW	0.0	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6
LIVERPOOL 11KV	0.0	0.2	0.3	0.4	0.6	0.8	1.0	1.0	1.1	1.1	1.1	1.1
LUDDENHAM	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MACQUARIE FIELDS	0.0	0.2	0.3	0.4	0.5	0.6	0.8	0.8	0.8	0.8	0.9	0.9
MALDON	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
MAMRE	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.7
MARAYONG	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6
MARSDEN PARK	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MINTO	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.1	1.2	1.2	1.2	1.2
MITTAGONG	0.0	0.1	0.2	0.3	0.3	0.5	0.6	0.6	0.6	0.6	0.6	0.6
MOOREBANK	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
MOSS VALE	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.6	0.6
MOUNT OUSLEY	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
MUNGERIE PARK	0.1	0.3	0.4	0.6	0.8	1.1	1.3	1.4	1.4	1.5	1.5	1.5
NARELLAN	0.1	0.2	0.4	0.6	0.8	1.1	1.4	1.6	1.7	1.8	2.0	2.1
NEPEAN 11KV	0.0	0.1	0.3	0.4	0.5	0.7	0.9	1.0	1.1	1.2	1.3	1.4
NEWTON	0.0	0.1	0.2	0.2	0.3	0.4	0.6	0.6	0.6	0.6	0.6	0.7
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH LEPPINGTON	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NORTH PARRAMATTA	0.0	0.2	0.3	0.5	0.6	0.8	1.0	1.1	1.1	1.2	1.2	1.3
NORTH RICHMOND	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
NORTH ROCKS	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.5
NORTH WARRAGAMBA	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3
NORTH WOLLONGONG	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
NORTHMEAD	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6
NOWRA	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.7
OAKDALE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
ORAN PARK	0.0	0.1	0.2	0.4	0.5	0.7	0.9	1.0	1.0	1.1	1.2	1.3
PARKLEA	0.1	0.2	0.4	0.6	0.8	1.0	1.3	1.4	1.4	1.5	1.5	1.6
PENRITH 11KV	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.7
PLUMPTON	0.0	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.0	1.0	1.0	1.1

Table 5.14 Energy stored – Endeavour Energy by ZSS – Battery only systems (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
PORT KEMBLA	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
PORTLAND	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PRESTONS	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.7
PROSPECT	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.7
QUAKERS HILL	0.0	0.2	0.3	0.4	0.6	0.7	0.9	0.9	1.0	1.0	1.0	1.0
QUARRIES	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
RINGWOOD	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
RIVERSTONE	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
ROBERTSON	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
ROOTY HILL	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.7	0.8	0.8	0.8	0.8
ROSEHILL	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
RUSSELL VALE	0.0	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6
RYDALMERE	0.0	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.0	1.0	1.1	1.1
SCHOFIELDS	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.7	0.7	0.8	0.8	0.8
SEVEN HILLS	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.6	0.6	0.6
SHELLHARBOUR	0.0	0.2	0.3	0.4	0.5	0.7	0.8	0.9	0.9	0.9	0.9	0.9
SHERWOOD	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.7	0.7	0.7	0.8	0.8
SMITHFIELD	0.0	0.2	0.3	0.4	0.5	0.6	0.8	0.8	0.8	0.8	0.8	0.8
SOUTH GRANVILLE	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.6
SOUTH LEPPINGTON	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
SOUTH MARSDEN PARK	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
SOUTH NOWRA	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SOUTH WINDSOR	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.7
SOUTH WOLLONGONG	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
SPRINGWOOD	0.0	0.1	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6
ST MARYS	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.7	0.8	0.8	0.8	0.8
SUSSEX INLET	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
TAHMOOR	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5
THE OAKS	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
TOMERONG	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4
ULLADULLA	0.0	0.2	0.3	0.4	0.6	0.7	0.9	0.9	0.9	1.0	1.0	1.0
UNANDERRA	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
WARILLA	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.7	0.8	0.8	0.8	0.8
WENTWORTH FALLS	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
WERRINGTON	0.0	0.2	0.3	0.4	0.5	0.7	0.8	0.9	0.9	0.9	0.9	1.0
WEST CASTLE HILL	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.7
WEST LIVERPOOL 11KV	0.0	0.1	0.2	0.3	0.5	0.6	0.7	0.8	0.8	0.8	0.9	0.9
WEST PARRAMATTA	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.6	0.6
WEST PENNANT HILLS	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5
WEST WETHERILL PARK 11KV	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
WEST WOLLONGONG	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
WESTMEAD	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4
WETHERILL PARK	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
WHALAN	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.8	0.8	0.8	0.8	0.9
WILTON	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WINDSOR	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4
WISEMANS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WOMBARRA	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WOODPARK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
YATTE YATTAH	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
YENNORA	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5
TOTAL	**3.5**	**15.3**	**24.8**	**35.7**	**48.1**	**62.7**	**77.3**	**81.6**	**84.1**	**86.0**	**88.1**	**90.4**

Table 5.15 Impact on summer peak – Endeavour Energy by ZSS – Battery only systems – Total ZSS (MW)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
ALBION PARK	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
AMBARVALE	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
ANZAC VILLAGE	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
APPIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARNDELL PARK	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BAULKHAM HILLS 11KV	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
BELLA VISTA	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
BERRY	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BLACKHEATH	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BLACKMANS FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLAXLAND	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BOLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOMADERRY	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
BONNYRIGG	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3
BOSSLEY PARK	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BOW BOWING	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BOWRAL	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
BRINGELLY	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
BULLI	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CAMBRIDGE PARK	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
CAMPBELLTOWN	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
CANLEY VALE	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
CARRAMAR	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
CASTLE HILL	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CASULA	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
CATTAI	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
CAWDOR	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
CHERITON AVENUE	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
CHIPPING NORTON	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CLAREMONT MEADOWS	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
CORRIMAL	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
CRANEBROOK	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CULBURRA	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DAPTO	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DOONSIDE	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4
DUNDAS	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
EAST RICHMOND	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EDMONDSON PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
EMU PLAINS	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
FAIRFIELD	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
FIGTREE	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
GERRINGONG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GLENMORE PARK	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
GLENORIE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLOSSODIA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GRANVILLE	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3
GREYSTANES	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HELENSBURGH	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1

Table 5.15 Impact on summer peak – Endeavour Energy by ZSS – Battery only systems – Total ZSS (MW) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
HOLROYD	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4
HOMEPRIDE	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3
HORSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUNTINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUSKISSON	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JASPER RD	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
JORDAN SPRINGS	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
KANDOS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KANGAROO VALLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KATOOMBA	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
KELLYVILLE	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
KEMBLA GRANGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
KEMPS CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
KENTHURST	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
KENTLYN	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
KIAMA	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
KINGSWOOD	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
KURRAJONG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LEABONS LANE	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
LENNOX	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
LITHGOW	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
LIVERPOOL 11KV	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
LUDDENHAM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MACQUARIE FIELDS	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3
MALDON	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MAMRE	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
MARAYONG	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
MARSDEN PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MINTO	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4
MITTAGONG	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
MOOREBANK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MOSS VALE	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
MOUNT OUSLEY	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MUNGERIE PARK	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.5
NARELLAN	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.6
NEPEAN 11KV	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4
NEWTON	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH PARRAMATTA	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
NORTH RICHMOND	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NORTH ROCKS	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NORTH WARRAGAMBA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
NORTH WOLLONGONG	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
NORTHMEAD	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
NOWRA	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
OAKDALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORAN PARK	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4
PARKLEA	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.5
PENRITH 11KV	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
PLUMPTON	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3

Table 5.15 Impact on summer peak – Endeavour Energy by ZSS – Battery only systems – Total ZSS (MW) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PORT KEMBLA	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
PORTLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PRESTONS	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
PROSPECT	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
QUAKERS HILL	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
QUARRIES	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
RINGWOOD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
RIVERSTONE	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ROBERTSON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROOTY HILL	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ROSEHILL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
RUSSELL VALE	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
RYDALMERE	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
SCHOFIELDS	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SEVEN HILLS	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
SHELLHARBOUR	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
SHERWOOD	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SMITHFIELD	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SOUTH GRANVILLE	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
SOUTH LEPPINGTON	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SOUTH MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
SOUTH WINDSOR	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
SOUTH WOLLONGONG	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SPRINGWOOD	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
ST MARYS	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
SUSSEX INLET	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TAHMOOR	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
THE OAKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
TOMERONG	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ULLADULLA	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
UNANDERRA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WARILLA	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WENTWORTH FALLS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WERRINGTON	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3
WEST CASTLE HILL	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
WEST LIVERPOOL 11KV	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3
WEST PARRAMATTA	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WEST PENNANT HILLS	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WEST WETHERILL PARK 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST WOLLONGONG	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WESTMEAD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WHALAN	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
WILTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WINDSOR	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WISEMANS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WOMBARRA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
WOODPARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YATTE YATTAH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
YENNORA	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
TOTAL	**1.2**	**4.9**	**7.7**	**10.7**	**14.0**	**17.5**	**21.3**	**22.1**	**23.0**	**23.9**	**24.9**	**25.9**

Table 5.16 Impact on winter peak – Endeavour Energy by ZSS – Battery only systems – Total ZSS (MW)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
ALBION PARK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
AMBARVALE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
ANZAC VILLAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
APPIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARNDELL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAULKHAM HILLS 11KV	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BELLA VISTA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
BERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLACKHEATH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLACKMANS FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLAXLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOMADERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
BONNYRIGG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BOSSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOW BOWING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOWRAL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
BRINGELLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BULLI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAMBRIDGE PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
CAMPBELLTOWN	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CANLEY VALE	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CARRAMAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
CASTLE HILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CASULA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CATTAI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAWDOR	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
CHERITON AVENUE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
CHIPPING NORTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLAREMONT MEADOWS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
CORRIMAL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CRANEBROOK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CULBURRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DAPTO	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DOONSIDE	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DUNDAS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
EAST RICHMOND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EDMONDSON PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EMU PLAINS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FAIRFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
FIGTREE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
GERRINGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLENMORE PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
GLENORIE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLOSSODIA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GRANVILLE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GREYSTANES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HELENSBURGH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5.16 Impact on winter peak – Endeavour Energy by ZSS – Battery only systems – Total ZSS (MW) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HOLROYD	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HOMEPRIDE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HORSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUNTINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUSKISSON	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JASPER RD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
JORDAN SPRINGS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KANDOS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KANGAROO VALLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KATOOMBA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
KELLYVILLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KEMBLA GRANGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KEMPS CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENTHURST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENTLYN	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
KIAMA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
KINGSWOOD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
KURRAJONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LEABONS LANE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
LENNOX	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LITHGOW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
LIVERPOOL 11KV	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LUDDENHAM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MACQUARIE FIELDS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MALDON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAMRE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
MARAYONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MINTO	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
MITTAGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
MOOREBANK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MOSS VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
MOUNT OUSLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MUNGERIE PARK	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
NARELLAN	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
NEPEAN 11KV	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEWTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH PARRAMATTA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NORTH RICHMOND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH ROCKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH WARRAGAMBA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
NORTHMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
OAKDALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORAN PARK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PARKLEA	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
PENRITH 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
PLUMPTON	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Table 5.16 Impact on winter peak – Endeavour Energy by ZSS – Battery only systems – Total ZSS (MW) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PORT KEMBLA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
PORTLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PRESTONS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
PROSPECT	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
QUAKERS HILL	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
QUARRIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RIVERSTONE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROBERTSON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROOTY HILL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ROSEHILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RUSSELL VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
RYDALMERE	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SCHOFIELDS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SEVEN HILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
SHELLHARBOUR	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SHERWOOD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SMITHFIELD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SOUTH GRANVILLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
SOUTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH WINDSOR	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
SOUTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SPRINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
ST MARYS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
SUSSEX INLET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAHMOOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
THE OAKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOMERONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ULLADULLA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
UNANDERRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WARILLA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WENTWORTH FALLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WERRINGTON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WEST CASTLE HILL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
WEST LIVERPOOL 11KV	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST PENNANT HILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST WETHERILL PARK 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WHALAN	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WILTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WINDSOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WISEMANS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WOMBARRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WOODPARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YATTE YATTAH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YENNORA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	**0.4**	**1.6**	**2.6**	**3.6**	**4.7**	**5.8**	**7.1**	**7.4**	**7.7**	**8.0**	**8.3**	**8.6**

5.8 Half hourly impacts of PV systems on Endeavour Energy zone substations

NIEIR have separately provided profiles of half-hourly demand impacts for each zone substation to Endeavour Energy. These contain the demand profiles on the coincident and non-coincident peak days for summer and winter, and are further disaggregated into residential, commercial and industrial customer classes.

The daily profiles are based on the expected profile of solar irradiation at each location on the day of peak demand. Solar irradiation profiles have been generated for a number of weather stations across the Endeavour Energy region, which were then mapped to each zone substation. The half-hourly demand impact of PV was estimated by combining the daily solar irradiation profiles, installed small-scale PV capacity and a conversion efficiency that was based on comparing readings of actual small-scale PV generation and sunshine for NSW.

Table 5.17 shows the impact for total endeavour Energy summer maximum demands.

Table 5.17 Endeavour Energy total network PV at summer coincident peak demand – 5:00 PM

	Residential	Commercial	Industrial	Total
2021	237.4	25.1	1.1	263.5
2022	289.2	33.4	2.8	325.3
2023	335.2	40.8	4.3	380.3
2024	376.3	47.3	5.7	429.3
2025	415.9	53.6	7.1	476.5
2026	453.9	59.4	8.4	521.7
2027	490.7	65.0	9.7	565.5
2028	528.1	70.6	11.0	609.7
2029	566.0	76.3	12.3	654.5
2030	605.4	82.1	13.7	701.2
2031	647.9	88.3	15.2	751.4
2032	693.2	95.0	16.7	804.9

6. Plug-in electric vehicles

The Plug-in Electric Vehicle (PEV) market in Australia is currently a very small niche within the car market in terms of sales and vehicles registered on the road. PEVs have the potential to have a substantial impact on energy sales and peak demand and are seen as a successor to current technologies. However, uncertainties remain around the timing of increased market penetration as market barriers such as purchase price and model availability restrict sales from taking off.

There are three types of electric vehicles available to purchase in Australia. These include:

- Hybrid Electric Vehicles (HEV);
- Battery Electric Vehicles (BEV); and
- Plug-in Hybrid Electric Vehicles (PHEV).

Hybrid electric vehicles contain both an internal combustion engine and an electric engine, but do not plug in to recharge. These do not place any additional load onto the electricity network and are not considered in the forecasts.

Plug-in Hybrid Vehicles also combine both an electric and an internal combustion engine, but are able to charge their batteries by plugging in. Battery Electric Vehicles use only an electric engine for propulsion by using stored electricity from a battery pack. These need to plug-into a charger. Both of these also make use of fuel efficient techniques to capture waste energy (braking, idling etc.). Collectively these are known as Plug-in Electric Vehicles (PEVs).

Hydrogen Fuel Cell Electric Vehicles models are limited, with only the Hyundai Nexo and Toyota Mirai within Australia but not available for private sale. These could displace some demand for clean vehicles that would otherwise be taken by PEVs. Hydrogen Fuel Cell Technology is most likely to be taken up for freight, rather than private travel. Plug-in Electric Vehicles will continue to be the favoured clean technology for most motor vehicles.

6.1 The global and Australian market for plug-in electric vehicles

The global stock of plug-in electric vehicles is estimated to be over 9.3 million on the road by the end of 2020, up from around 7 million by the end of 2019. For the year ending December, 2020 plug-in electric vehicle sales were around 2.3 million units.

China was once again the highest selling PEV market with around 1,200,000 PEVs sold in 2020. Collectively, Europe is the second highest selling market, followed by the US. European countries lead the world in the uptake of electric vehicles as a proportion of new motor vehicle sales. Norway has the highest electric proportion of new car sales with around 74.8 per cent of total sales followed by Iceland and Sweden with 45 per cent and 32.2 per cent of new car sales in 2020[4].

Sales in these markets are driven largely by non-economic factors with most major markets continuing to be supported by government incentives and programs. However, technology and cost improvements and increased model choice will continue to improve market competitiveness. Reasons for higher sales of PEVs include:

- generous government incentives that reduce the costs of ownership (USA). The USA offers incentives that reduce the cost premium of PEVs, and some states also subsidise private charging infrastructure; and
- concern over air quality, urban pollution and a means to reduce carbon emissions (China, California).

In comparison, Australia represents only a very small proportion of on road plug-in electric vehicles. By the end of 2020 there were only about 23,600 PEVs sold to date. Australia's total vehicle registrations are around 19.8 million vehicles as of 31 January, 2020[5].

Figure 6.1 summarises the annual sales of electric vehicles on Australian roads by the end of 2020. In 2019, around 6,400 plug-in electric vehicles were sold in Australia with around 2,300 being sold in New South Wales. The level of sales is around the same as the previous year which is still relatively small when over 1 million motor vehicles are sold within Australia each year. The Australian market differs from the leading markets by the absence of any substantial government incentive program. However, there are small

[4] World Economic Forum.

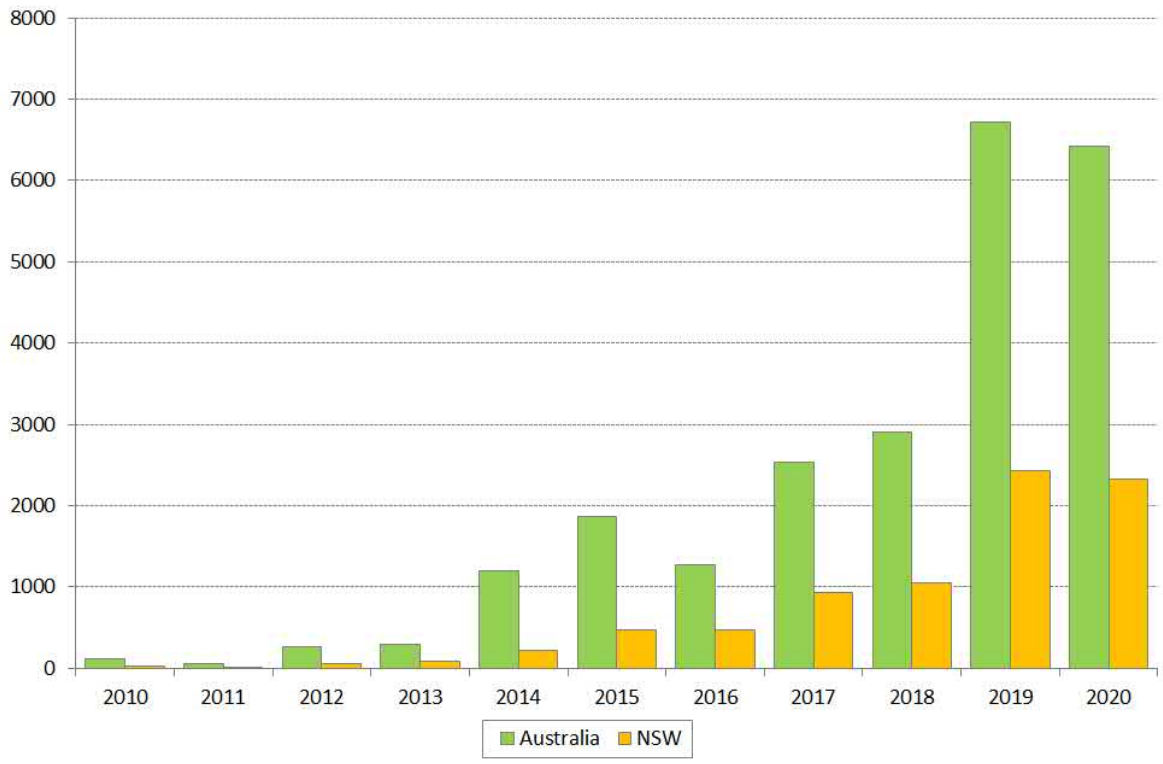
[5] ABS, 9309.0 - Motor Vehicle Census, Australia, 31 January 2020.

incentives available in Victoria and the ACT that reduce on road costs. Victorians are eligible for a discount on registration, and PEVs registered in the ACT are exempt from stamp duty and luxury vehicle taxes. NSW is currently working on introducing incentives for electric vehicles including stamp duty exemptions, transit lane access, and for charging infrastructure.

While these incentives may help the uptake of electric vehicles, they are not adequate enough to bridge the gap between the sale prices of petrol versus electric vehicles. Victoria is the only jurisdiction to introduce a price subsidy, which will take $3,000 of the purchase price of a new electric vehicle – but the effect of this is diminished with the concurrent introduction of a road user charges. NSW has not proposed to follow Victoria or South Australia in introducing road user-charges for electric vehicles at this stage. But has indicated that they will only introduce such measures when the 40 to 50 per cent of the motor vehicle market is electric.

The majority of the electric vehicles sold onto the market are being sold to business fleets. Reports suggest that two thirds of the vehicle sales reported to VFACTS are fleet vehicles, with the remaining third being sold to private customers. Tesla does not disclose their sales figures, but it is likely that Tesla sales are more weighted toward private customers. Industry estimates suggest that Tesla sells around 1,000 cars per annum within Australia since they released the Model S. Overall, around half of new electric car sales are sold to businesses and half to private buyers.

Figure 6.1: Australian and New South Wales plug-in electric vehicle sales



Source: Compiled from various sources, including VFACTS.

6.2 New electric vehicle models

Table 6.1 summarises the vehicles currently available for purchase in Australia, and the range, energy consumption per kilometre and battery size for each vehicle. The purchase cost for a vehicle with a large range can be six figures, while the cheapest currently available the lower variants of the Renault Zoe and Hyundai IONIQ. These cars remain at similar prices to the first entrants onto the market, but they offer greater value in battery size and driving range.

After a period where expensive luxury vehicles and SUVs have dominated the market, recent years have seen more affordable (but still at a significant premium) electric vehicle models released onto the market.

The plug-in electric vehicle market will remain a niche market in the short-term catering to higher income consumers.

During 2020, sales of EVs were impacted by structural change and the ongoing impacts of COVID-19. Sales were suppressed by a number of external forces. These include

- supply disruptions as a result of COVID-19 social distancing and travel restrictions. For example, the Tesla factory in Fremont California was temporarily shuttered under COVID-19 social distancing restrictions. This will result in a lower availability of Tesla's to purchase;
- The weak economic outlook include negative GSP growth, higher unemployment, and low to negative wage growth;
- The low price of oil, and therefore petrol reduces the economic case for electric vehicles. The depreciating exchange rate will continue to add price pressure to the up-front cost of purchasing an electric vehicle; and
- There may also be a permanent cultural shift toward more working from home practices and online deliveries to homes which creates less of a demand for private vehicle use and ownership. Conversely, outside of lockdown there is a reluctance to use public transport so private car sales may increase.

Table 6.2 summarises the release schedule for new plug-in electric vehicles. There were many planned releases of new models of electric vehicles during 2020, which became delayed due to COVID-19. Some of the models planned for 2020 are now releasing in Australia later in 2021 and 2022. There's never been more electric vehicles planned to be released in Australia. Given the current size of the Australian market, it is unlikely that all of these will end up being sold in Australia with final decisions about release yet to be determined by manufacturers.

In more recent years there has been a trend toward producing electric versions of current models, rather than purpose designed electric vehicles. For example, Nissan plans to release a plug-in hybrid version of the X-TRAIL in early 2022. Alternatively, new makes are getting the more options for fuel type (petrol, diesel, BEV, or PHEV).

Table 6.1 Summary of plug-in electric vehicles available in Australia							
Make and model	Type	Release year	Wh per km	Range (km)	Battery capacity (kWh)	2020 New car price ($AUD)	2020 Used car price ($AUD)
Tesla Roadster	BEV	2010	231	340	53	n/a	n/a
Mitsubishi i-Miev	BEV	2010	135	150	16	n/a	12,999 to 22,990
Nissan Leaf	BEV	2011	173	175	24	n/a	19,600 to 30,000
Holden Volt	PHEV	2012	135	87	16.5	n/a	n/a
Porsche Panamera S E-Hybrid	PHEV	2013	162	36	9.4	499133	n/a
Renault Kangoo1	BEV	2014	155	170	22	n/a	n/a
Tesla Model S	BEV	2014	181	390 to 632	60 to 100	129,445 to 244,310	97,000 to 173,990
Tesla Model X	BEV	2016	208 to 217	363 to 565		145,000 to 264,000	135,000 to 215,000
Mitsubishi Outlander	PHEV	2014	134	52	4.5	56,680 to 62,000	26,990 to 54,888
BMW i3	BEV	2014	129 to 136	130 to 200	22 to 33	77999	39990 to 77,970
BMW i3	PHEV	2014	115	170	22	83400	39990 to 78,990
BMW i8	PHEV	2015	119	37	7.1	299000	n/a
Audi A3 e-tron	PHEV	2016	124	49	8.8	n/a	n/a
Volvo XC90 T8	PHEV	2016	182	43	9.6	136000	92,000 to 104,000
Mercedes-Benz C350e	PHEV	2016	116	30	6.2	87000	52,000 to 95,000
Mercedes-Benz GLE500e	PHEV	2016	167	30	6.2	144000	n/a
Jaguar I-PACE	BEV	2018		480	90	134288	n/a
Renault Zoe	BEV	2018		210 to 400	22 to 42	43,000 to 55,000	n/a
Hyundai IONIQ	BEV/PHEV	2019		50 to 280	8.9 to 28	45,000 to 55,000	n/a
Hyundai Kona Electric	BEV	2019		449	64	59,990	n/a
Mercedes-Benz EQC	BEV	2019		414		150,000	n/a
Nissan Leaf (next generation)	BEV	2019		270	60	55,000	
Porsche Taycan	BEV	2020		500	n/a	n/a	
Tesla Model 3	BEV	2020		354 to 499	50 to 75	70,000 to 80,000	
Audi e-tron	BEV	2020					
MG ZS EV	BEV	2020		262		47,000	
Mini Electric	BEV	2020		230		n/a	
Mitsubishi Eclipse Cross	PHEV	2020					
Hyundai Tucson	PHEV	2021					

Notes:
1. Includes all on road costs as of 2019. Price ranges are indicative for different badges, but do not include extras.
2. Used car prices gathered from carsales.com.au as of 10/05/2020.
3. Includes discontinued models.
4. Renault Zoe available to general public October 2019. Previously fleet buyers only.

Source: Model and technical details from *Green Vehicle Guide* and vehicle brand websites. Sales pricing data compiled from various sources.

Table 6.2 Release schedule for new plug-in electric vehicle models						
Make and Model	**Type**	**Body**	**Timing**	**Range (km)**	**Battery capacity (kWh)**	**Estimated new car price ($AUD)**
Audi e-tron Q6 e-tron	BEV	SUV	2021	400	95	120000
Audi e-tron Sportback	PHEV	Sedan	2021	50	8.8	
Audi e-tron GT	PHEV	Sedan	2021	n/a		
Audi A6 e-tron	BEV	Sedan	2023			
Audi Q4 e-tron	BEV	Hatch	2022			
BMW iX3	BEV	SUV	2021	400	70	
BMW iX	BEV	SUV	2021			
BMW i2	BEV	Hatch	2024			<40,000
BMW i4	BEV	Coupe	2021			
Citroen C4 Cactus	BEV	SUV	TBC			
Citroen C6	BEV		TBC			
Ferrari SF90 Spider	PHEV		2022			
Fiat 500e			TBC			
Ford Mustang Mach E		SUV	2022			
Genesis GV60	BEV	SUV	2022			
GMC Hummer	BEV	SUV/Ute	TBC			
Jaguar XJ	PHEV	Coupe	2018	40	12.3	n/a
Jeep Wrangler 4xe	PHEV		TBC			
Kia e-Niro	BEV	SUV	2021			
Kia e-Soul	BEV	Hatch	2021			
Kia Sorrento	PHEV	SUB	2021			
Lexus UX 300e		SUV	2021			
Lotus Evija			2021			
Maserati Ghibli	PHEV	Coupe	2020	n/a	n/a	n/a
Maserati GranTurismo	PHEV	SUV	2021			
Maserati GranCabrio	PHEV	Coupe	2021			
Maserati Quattroporte	PHEV	Sedan	2022			
Maserati MC20 Spyder		Coupe	2022			
Maserati MC20 Folgore		Coupe				
Mazda MX-30	PHEV	TBD	2021	n/a	n/a	n/a
Mercedes-Benz EQA			2021			
Mercedes-Benz EQB			2021			
Mercedes-Benz EQE			2021			
Mercedes-Benz EQS			2023			
MG 5	PHEV	Sedan	2021			
Mini Paceman	BEV	SUV	2022			
Nissan Ariya	BEV	SUV	2022			
Nissan QASHQAI	PHEV	SUV	2022			
Nissan X-TRAIL	PHEV	SUV	2022			
Peugeot 3008	2021	SUV	2021			
Peugeot 508 Sport Engineered	PHEV	Sedan	TBC			
Porsche Macan	BEV	SUV	2022			
Range Rover EV	BEV	SUV	2024			
Rolls-Royce Phantom EV	BEV/PHEV		2022			
Skoda Enyaq	BEV	SUV	2022			
SsangYong electric SUV	BEV	SUV	TBC			
SsangYong electric ute	BEV	Ute	2023			
Volkswagon e-Golf	BEV	Hatch	TBD	200	35.8	60000
Volkswagon I.D.	BEV	Coupe/SUV	2020	480	83	n/a
Volvo Polestar 2	BEV	Hatch	2020	500		
Volvo XC40	BEV	SUV	2021	400	78	
Tesla Cybertruck	BEV	Ute	2022			
Tesla Model Y	BEV	SUV	2021	450		75,000
Tesla Roadster	BEV	Coupe	2022	1000	200	330,000
Volkswagon ID.3	BEV	Hatch	TBC			50,000
Volkswagon ID.4	BEV	SUV	2023			
Volvo Polestar Precept	BEV	Sedan	2023			

6.3 Barriers to plug-in electric vehicle ownership

Plug-in electric vehicles continue to have a low penetration in Australian registrations of motor vehicles. By the end of 2020, on-road plug-in electric vehicle registrations account for around 0.12 per cent of registered motor vehicles.

While there are benefits to owning a plug-in electric vehicle, there remain several important barriers preventing wider uptake within Australia.

Plug-in electric vehicles benefit the consumer by:

- lower maintenance costs compared to an internal combustion engine;
- lower operating costs per kilometre compared to an internal combustion engine; and
- some savings are available on registration and on-road costs for select states.

Wider benefits to Australian society and economy include:

- reduction of tailpipe emissions;
- reduction of CO_2 used in fuel (depending on generation mix of electricity);
- lower reliance on oil imports; and
- goes toward meeting government and international climate targets.

As the world and Australia transition to more environmentally sustainable economies, plug-in electric vehicles will play an even greater role in the next stage of the motor vehicle market. In the absence of any other commercially viable clean alternatives (e.g. hydrogen fuel cell vehicles), plug-in electric vehicles appear to be the technology of choice. This will be driven by the need to reduce emissions from the motor vehicle sector, the transition to renewable energy and the need for less reliance on non-renewable fossil fuels.

The wider uptake of plug-in electric vehicles in Australia is a matter of timing – when the current barriers facing the market will reduce by a sufficient enough amount to allow potential buyers to seriously consider an electric vehicle as their next car.

The barriers prevented wider Australian (and global) uptake include:

- purchasing cost;
- high battery costs;
- access and convenience of charging infrastructure;
- real world electric range (kW);
- model availability;
- public perception;
- network electricity generation mix;
- lack of government policy, framework or subsidies; and
- effect on government revenue through avoidance of fuel excise, and need for road user charging.

The first entrant vehicles in the early 2010s were targeted at the commuter or city. These were small cars with only a limited electric range that is only suitable for commuting rather than long trips. The Mitsubishi iMiev sold for around $50,000, while the Nissan Leaf was originally priced at a similar level, but was later reduced to around $40,000. The price of these new cars represented a price premium of around $25,000 initially, and later reducing when the Leaf was sold for $40,000.

The upfront purchase cost of these vehicles represented a significant barrier to purchasing, especially when these were marketed toward a price-conscious demographic. The lower operational costs in fuel and maintenance compared to an internal combustion engine vehicle are not enough to pay back to significant price premium for the new cars.

With a lack of price competitiveness and lack of subsidies only hundreds of these vehicles were sold, out of the around 1 million vehicles sold in Australia every year.

The next phase of electric vehicle models pivoted toward a less price conscious demographic, those that purchase SUVs and luxury vehicles. The Mitsubishi Outlander had a smaller premium, but the plug-in hybrid only contained a small battery. The models currently available on the market all sale price start from just below $100,000 to significantly more than $100,000. This includes models by BMW, Mercedes-Benz, Jaguar, Porsche, Audi and Tesla. The Tesla Model S and Model X start from around $130,000 and with additional battery capacity and extras can run up towards $270,000 for a new car.

Australia is recognised as a country that has a low uptake of electric vehicles, so it has been difficult to convince motor vehicle manufacturers to bring their models to Australia when there are more lucrative markets in the US, Europe and China that take priority. For example, the Tesla Model 3 production capacity will prioritise serving the reservations in the North American market prior to bring the car to Australia. Australia also requires right-hand drive cars, which require additional engineering work to complete. Model availability is beginning to improve, and will continue to do so over the short term as a more diverse range of make/models are brought to Australia.

A new generation of plug-in electric vehicles that are more suitable to middle-income demographics is currently on the market (before on road costs). These include:

- Renault Zoe, 2018, $43,000 to $53,000;

- Hyundai Ioniq, 2018, $45,000;
- Nissan Leaf, 2019, $50,000; and
- Tesla Model 3, $70,000 to $80,000.

While they are entering the market at a similar price point as the Nissan Leaf and Mitsubishi iMiev earlier in the decade, they come with more features and greater driving range which represents an improvement in quality and value for money.

However, they are still too expensive when compared to similar internal combustion engine vehicles in the market. The price premium is still too close based on fuel savings. The Renault Zoe is around $23,000 to $33,000 more expensive than a Renault Clio, or around twice the cost to purchase. The Hyundai IONIQ is also around twice the price of a comparable Hyundai i3.

Figure 6.2: Volume-weighted average pack and cell price split

Source: BloombergNEF.

In 2020, more vehicles that target a similar demographic were released from Kia, Mini and MG. In addition, a wider range of new models will be made available over the coming years which will help to expand the market. The MG EV Essence, for example, is only $15,000 more expensive than an equivalent petrol MG SUV.

The range of electric vehicles has been a significant hurdle to convince people to own one. In previous years, they were only suitable for city driving or daily commute type distances with effective ranges of below 200 km. This is prohibitive for country or destination driving especially when there is a lack of available fast chargers.

Many of the new luxury type models coming to market in the next few years can achieve close to a 500 km electric range. While the smaller type vehicles have ranges around the 300 km to 400 km (Tesla Model 3 up to 500 km with upgrades). While the cheapest models only have a range of between 200 and 300 km. In the smaller segment this represents an increase by a factor of two over the models introduced around 7 years prior. This has mostly been achieved through doubling the battery size within each vehicle. (Nissan leaf has gone from 24 kWh to 60 kWh).

The issue of range appears to be diminishing and further cost savings should go toward reducing the capital cost of purchasing new vehicles. Within the next five years the next critical barrier of reducing purchasing cost below $40,000 is likely to be reached. However, this will still be at a premium to conventional vehicles for most models.

Purchase price parity with internal combustion engines is predicted to be achieved in Europe between 2025 and 2030. While smaller economies of scale will mean price parity in Australia is more likely to be achieved in the early 2030s.

The battery size has been increased as the cost of batteries has decreased. This is illustrated in Figure 6.2, which shows average price change in manufacturing costs since 2013 with total cell and pack average prices of $668. Earlier in the decade, prices were closer to $1000 when the first-generation Nissan Leaf was released. Currently, Manufacturers are currently targeting battery costs below $100 USD per kWh. BloombergNEF is currently reporting market leaders have achieved this cost. The cost of the battery in a 2012 Nissan Leaf was therefore around $19,200 while the new Nissan Leaf battery costs are around $12,000 to manufacture. When converted into AUD, these price improvements are not as significant as the AUD was close to parity when the Leaf first came out and has now depreciated to around 0.70 AUD/USD.

The price of electric vehicles still needs to come down further before there can be any significant uptake within Australia:

- improvements in battery technology (density/chemistry);
- economies of scale as global EV manufacturing capacity and sales increase; and
- government subsidies and programs.

At this stage it is unlikely that there will be any government subsidy that is as generous as those that have been in place overseas. Especially when it means that the government will effectively be subsidising imports from foreign car companies. It is more likely that government policy will continue to focus on domestic supply of clean technologies and reducing other EV on-road costs. This includes support for electric vehicle manufacturing, which could fill the void in the industry left by the exit of Toyota, Ford and Holden local manufacturing in the past few years. Incentives for public and private charging stations may also

be more politically palatable as there are some Australian companies that design and manufacture electric vehicle chargers. Incentives for private chargers would act to reduce the cost of ownership, as many PEV owners would benefit from higher kW private charging.

There may be other policies that reduce on-road costs of electric vehicles that would not be as politically difficult as direct price subsidies on the purchase cost. These can be in the form of:

- emissions standards on vehicle tailpipe emissions;
- reductions in luxury car taxes, and registration costs; and
- favourable loans to purchase greener cars.

6.3.1 NSW electric vehicle strategy

NSW released an electric vehicle strategy in June 2021[6] which is aiming to achieve an electric vehicle sales penetration of 52 per cent of new car sales by 2030-31. The strategy is going towards decarbonising the transport sector to meet net zero emissions targets.

The NSW government has currently announced subsidies of $3,000 for the first 25,000 electric vehicles sold for a value of under $68,750. The government is also planning on phasing out stamp duty, incentivising fleet purchases, and building charging infrastructure. A road user charge will also be introduced around 2027 for electric vehicles.

The NSW target is ambitious, and under the current market and subsidies offered it is unclear whether this target will be met. The purchase premium on more the cheaper electric vehicles ranges from around $15,000 to $30,000. The market for electric vehicle sales should continue to be monitored over the next few years for the impact of the announced incentives. If sales penetration accelerates dramatically toward the NSW sales target, then the impact on Endeavour Energy network could be much larger than what has been forecast.

NSW has also previously committed to electrifying the public bus fleet by 2030, which would account for around 8,000 electric buses. NIEIR assumes around half this will be met.

[6] NSW Electric Vehicle Strategy, NSW Government Department of Planning, Industry and Environment.

6.4 Plug-in electric vehicle model

NIEIR's plug-in electric model can be broken down into three distinct parts:

1. the Market;
2. Annual energy impacts; and
3. Maximum demand impacts.

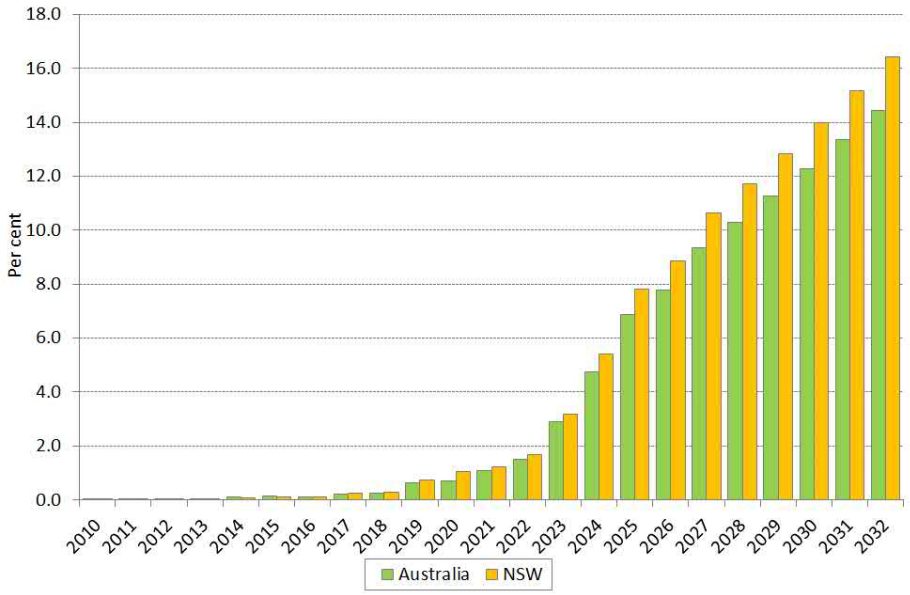
The size of the Australian market is determined through a top down approach from the states and allocated downwards to the Local Government Areas. The Annual energy and Maximum demand impacts are determined from the bottom up at the Local Government Area level. In each case the Local Government Area impacts have been mapped to Endeavour Energy's zone substations.

The market size for plug-in electric vehicles is determined by forecasting plug-in electric vehicle sales by each Australian state and territory. Sales are used to determine the stock of on-road electric vehicles (with an attrition rate). The primary mechanism to determine the number of sales per annum is the uptake rate of plug-in electric vehicle sales as a percentage of total vehicle sales within each year.

The plug-in electric vehicle uptake rate is informed by the historical rate, market substitution and economic factors. The uptake rate is formed assuming that there will be no significant direct subsidies for plug-in electric vehicles in the foreseeable future. The forecast trajectory considers small subsides available that reduce ownership and on-road costs.

Plug-in electric vehicles sales are expected to remain a small but growing segment of the motor vehicle market. A number of new models soon to be released may prove popular with fleet owners, and will help to boost sales year on year.

Figure 6.3: Plug-in electric vehicle sales – per cent of total vehicle sales



Source: NIEIR.

The uptake rate in NSW is higher than the national Australian uptake rate due to higher incomes, greater population density and better access to charging infrastructure.

In NSW sales penetration will be around 1.2 per cent in 2021, and gradually increase to 7.8 per cent of sales by 2025. In the late 2020's the uptake of plug-in electric vehicles will increase at a greater rate as new models are released onto the market, electric car prices fall, electric range increases and charging infrastructure becomes more prevalent. By 2032 around 16.4 per cent of new car sales with be either battery electric or plug-in hybrid electric cars.

There is a high degree of uncertainty around the forecasts, especially late in the ten-year forecasting period. The market is forecast off of a very small base, and it is likely that electric vehicles will play a larger role in the market in the years to come. The uncertainty in the forecasts relates to the timing of mass market uptake. This could change under more favourable subsidies or vast improvements in price and range. Sluggish non-exponential growth could also persist over the next 10 years if market barriers remain too prohibitive for ordinary consumers. Sales growth is expected to remain small over at least the next five years.

The market for plug-in electric vehicles has been segmented in technology and ownership to more accurately model the energy and maximum demand impacts. The market has been separated into BEV's and PHEV'S, which can either be privately owned or not privately owned. The type of technology within the market informs the electric range of the vehicle, and the ownership informs distance travelled and the timing of re-charging events.

Table 6.3 shows the plug-in electric vehicle forecasts for Australia, New South Wales and the Endeavour Region. The Endeavour Region was mapped from the Local Government Area's.

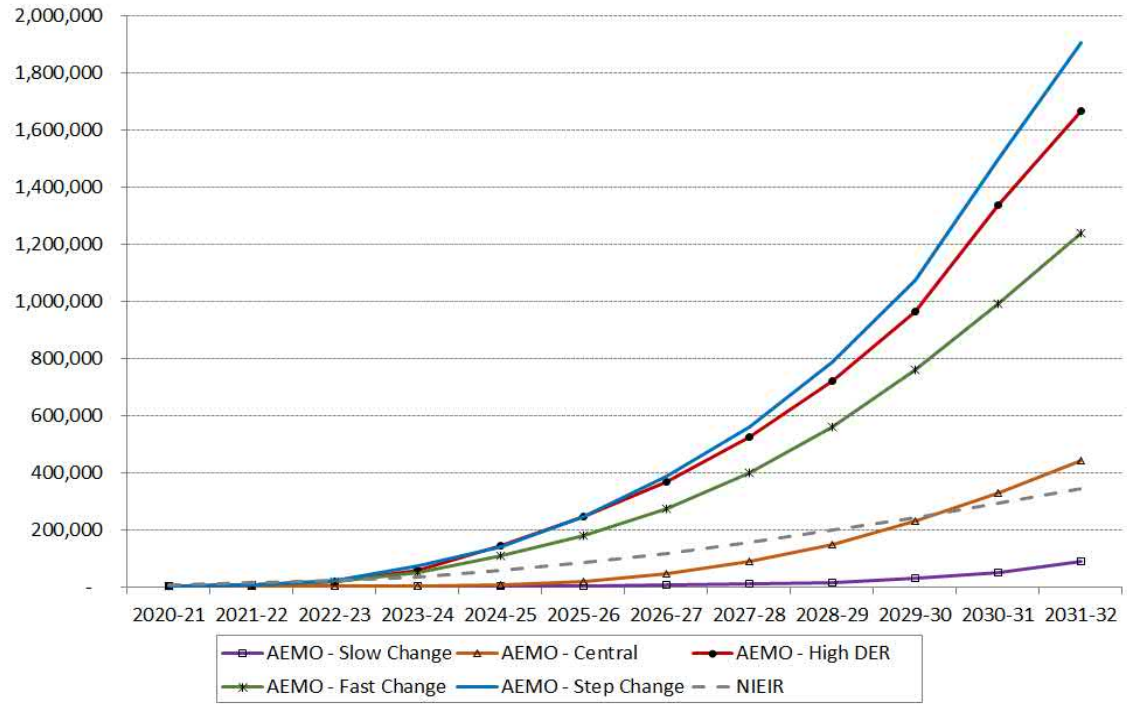
Table 6.3 Plug-in electric vehicle market – Australia, New South Wales and Endeavour Energy																	
Region	**Segment**	**Series**	**Units**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Australia	BEV	Sales	no.	4133	3827	6285	8641	15994	27031	40694	48076	60096	68807	78386	88897	100402	112972
Australia	PHEV	Sales	no.	2585	2587	4589	6771	14009	22109	31129	34305	39882	42329	44535	46446	48005	49151
Australia	**Total**	**Sales**	**no.**	**6718**	**6414**	**10874**	**15412**	**30003**	**49140**	**71823**	**82381**	**99979**	**111136**	**122921**	**135342**	**148407**	**162124**
NSW	BEV	Sales	no.	1541	1427	2289	3147	5826	10119	15234	17997	22497	25758	29344	33278	37585	42291
NSW	PHEV	Sales	no.	890	894	1550	2294	4766	7743	10874	11948	13845	14640	15338	15919	16361	16641
NSW	**Total**	**Sales**	**no.**	**2431**	**2321**	**3839**	**5441**	**10592**	**17862**	**26108**	**29945**	**36342**	**40398**	**44682**	**49197**	**53946**	**58932**
Australia	BEV	Stock	no.	9993	13816	20094	28719	44687	71667	112262	160063	219538	287102	363349	448786	544380	649575
Australia	PHEV	Stock	no.	7208	9792	14376	21135	35125	57194	88244	122333	161741	203154	246175	290277	335171	379535
Australia	**Total**	**Stock**	**no.**	**17201**	**23608**	**34470**	**49855**	**79813**	**128862**	**200507**	**282396**	**381279**	**490255**	**609524**	**739062**	**879551**	**1029110**
NSW	BEV	Stock	no.	3534	4959	7276	10467	16331	26539	41916	60125	82960	108989	138630	171572	208118	248259
NSW	PHEV	Stock	no.	2188	3081	4630	6919	11680	19410	30257	42131	55813	70137	84952	100062	115350	130343
NSW	Private	Stock	no.	2876	4089	6132	9071	14912	24963	40000	57819	80070	105395	134143	165925	200947	239103
NSW	Non-Private (other)	Stock	no.	2847	3952	5744	8236	12971	20752	31759	43709	57406	71700	86315	101630	117687	133911
NSW	Non-Private (buses)	Stock	no.	0	0	30	79	127	234	414	728	1296	2030	3124	4079	4834	5588
NSW	**Total**	**Stock**	**no.**	**5722**	**8041**	**11906**	**17386**	**28011**	**45948**	**72173**	**102256**	**138772**	**179125**	**223582**	**271634**	**323468**	**378602**
Endeavour	BEV	Stock	no.	602	827	1227	1817	2862	4693	7401	10685	14835	19599	25087	31147	37836	45205
Endeavour	PHEV	Stock	no.	371	512	782	1209	2050	3419	5304	7402	9824	12366	15002	17698	20444	23156
Endeavour	Private	Stock	no.	501	696	1055	1606	2667	4502	7191	10452	14556	19257	24651	30574	37064	44155
Endeavour	Non-Private (other)	Stock	no.	473	643	954	1420	2229	3552	5390	7388	9645	11971	14285	16752	19413	22117
Endeavour	Non-Private (buses)	Stock	no.	0	0	0	0	16	58	125	247	458	737	1153	1519	1803	2090
Endeavour	**Total**	**Stock**	**no.**	**973**	**1339**	**2010**	**3026**	**4912**	**8112**	**12705**	**18087**	**24659**	**31965**	**40089**	**48845**	**58280**	**68361**
Endeavour	**Total**	**Stock**	**NSW state share**	**0.17**	**0.17**	**0.17**	**0.17**	**0.18**	**0.18**	**0.18**	**0.18**	**0.18**	**0.18**	**0.18**	**0.18**	**0.18**	**0.18**

6.4.1 Comparison with AEMO

Figure 6.4 contains a comparison of AEMO's and NIEIR's forecasts of NSW electric vehicles on the road. The NIEIR scenario is intended to be an expected, or most likely scenario, similar to AEMO's 'central scenario'.

Compared to AEMO's central scenario, NIEIR has a higher number of electric vehicles on the road during the 2020's, while AEMO's has a larger number of vehicles on the road by the end of the forecasting period. In particular, over the next three years AEMO's central scenario for on road electric vehicles appears quite low with increases of on average 465 per annum. Historical sales for plug-in hybrids and battery electric vehicles over 2019 and 2020 were between 2000 and 2500 in NSW alone. NIEIR forecasts assume sales will continue to increase above this rate over the next few years.

Figure 6.4: New South Wales' stock of plug-in electric vehicles



Source: AEMO, 2020 Inputs and Assumptions Workbook Dec2020, NIEIR.

6.5 Regional electric vehicle model

NIEIR have developed a regional model of electric vehicle sales that forecasts plug-in electric vehicle sales by 129 Local Government Area (LGA) for New South Wales. This expands NIEIR's Australian state-based model of plug-in electric vehicle sales.

Registrations of electric vehicles within each LGA were sourced from the ABS up to 2019. The registrations were reconciled with state sales figures and estimates of on-road electric vehicles for New South Wales.

The stock of electric vehicles in 2019 across NSW is shown in Figure 6.5. This includes all battery electric and plug-in hybrid electric vehicles registered within NSW by local government area (not including the ACT).

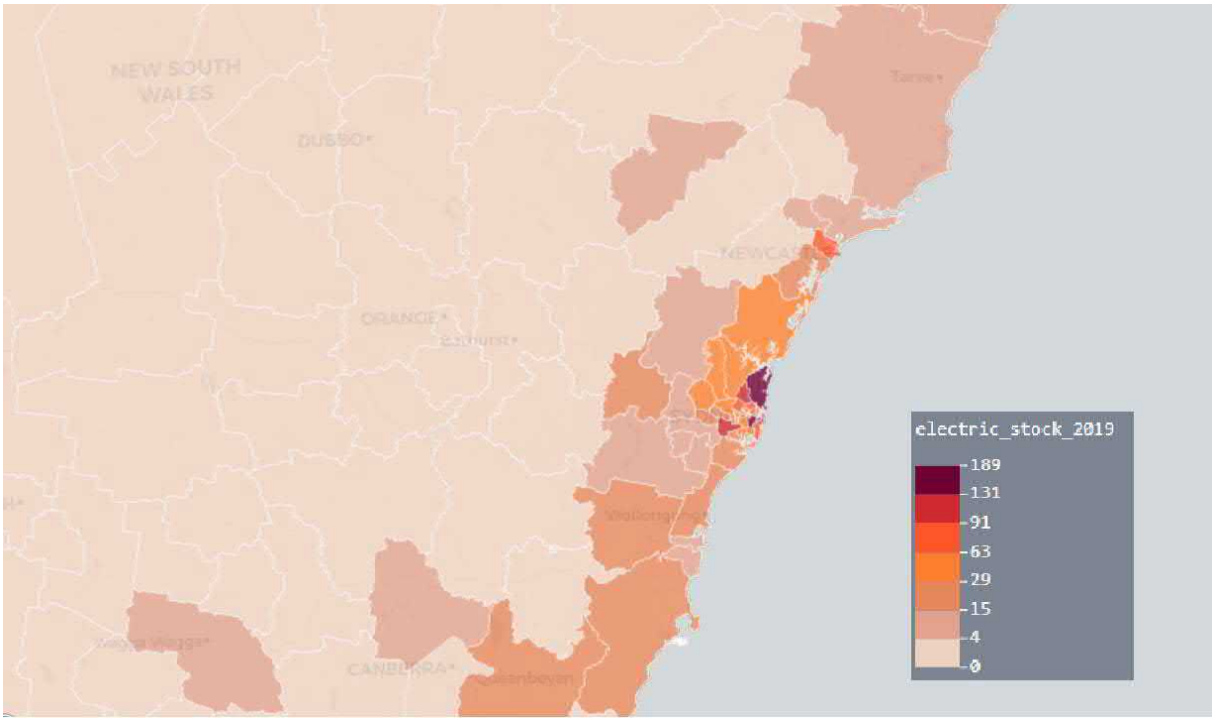
Plug-in electric vehicle registrations in NSW are concentrated along the east coast of NSW, especially around Sydney and other major cities (to a lesser degree). Most regional and rural LGAs have very little plug-in electric vehicles.

Figure 6.6 shows plug-in electric vehicles within the Greater Sydney region of New South Wales, where population and electric vehicle registrations are most concentrated. In particular, plug-in electric vehicles are registered in the greatest frequency in LGAs with higher average incomes and property values. Registrations are concentrated in the affluent Northern LGAs of Sydney. These includes:

- Ku-ring-gai;
- Woollahra; and
- Sydney Council.

Table 6.4 summarises the top 20 regions for plug-in electric vehicles registrations in New South Wales, all of which are within the greater Sydney Region. A small sample of potential factors for electric vehicle uptake are also contained within the table. Thee 20 LGA's represent 75.5 per cent of total electric vehicle registrations in 2019. The majority of which are registered within the Ausgrid service area.

Figure 6.5: Stock of electric vehicles in 2019 by LGA – New South Wales



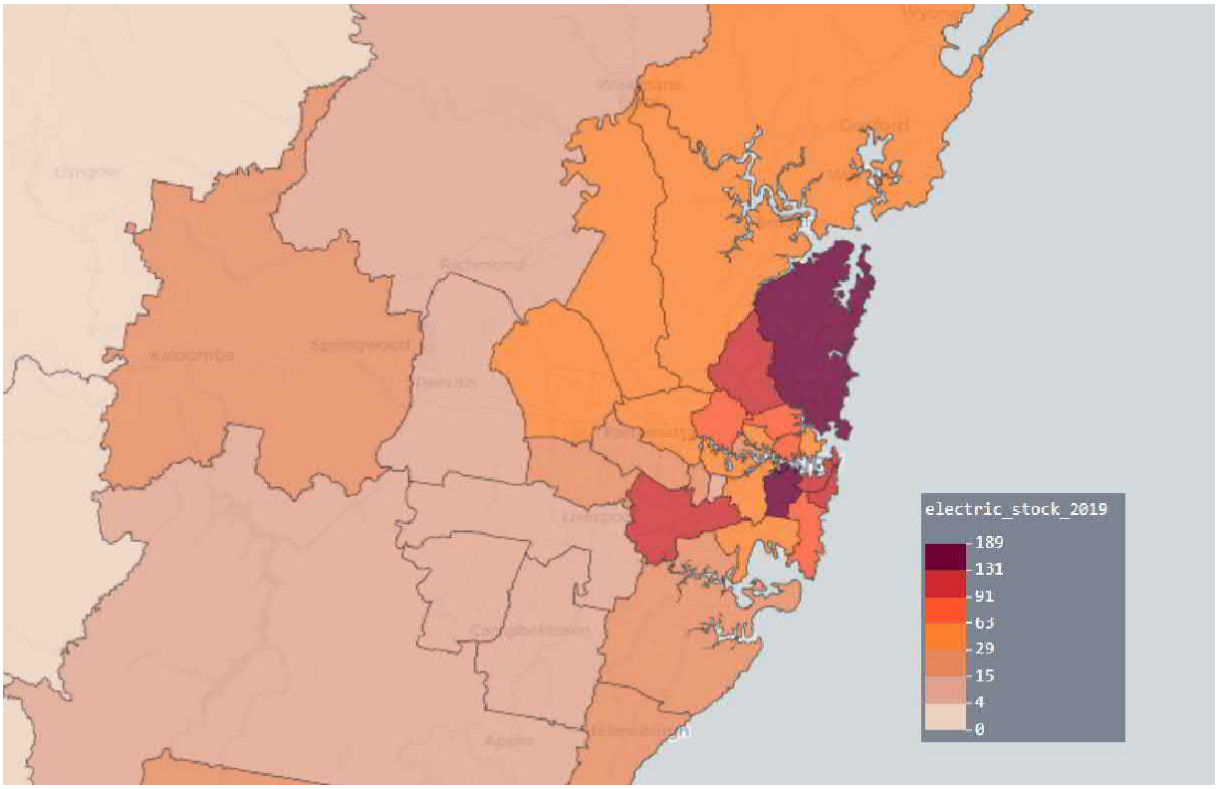
Note: ACT not shown.
Source: Australian Bureau of Statistics (ABS).

Residents of the top 20 local government areas compared to the rest of the state on average:

- have higher incomes;
- higher property values;
- mostly live in detached houses with garages;
- are well educated;
- lower penetration of rooftop PV;
- higher rate of marriage;
- higher proportion of 40 to 59-year olds;
- above average access to public charging infrastructure.

Another important driver of current plug-in electric vehicle uptake is the regions access and use of public transport. Local Government Areas with very high proportions of people that take public transport to work have been found to have a low uptake of electric vehicles. Public transport may be an indicator of lower incomes, denser living, convenience, and is generally a lower emission form of transport which suppresses demand for electric cars.

Figure 6.6: Stock of electric vehicles in 2019 by LGA – Sydney region



Source: Australian Bureau of Statistics (ABS).

Table 6.4	Top 20 number of electric vehicle registrations 2016 – NSW Local Government Area									
LGA17 code	LGA17 name	Electric vehicle stock – 2019 (no.)	Electric vehicle stock – 2019 (%)	Public charging capacity – 2021 (kW)	Average income per household – 2019 ($)	Dwelling stock – 2019 (no.)	Median house sale value – 2016 ($)	Proportion Bachelors Degree – 2016 (%)	PV penetration – 2019 (installations per capita)	Distribution region
NSW		**2,237**	**100**	**34,577**	**112,380**	**3,165,709**	**915,043**	**26.4**	**0.07**	
Local Government Area										
17200	Sydney (C)	189	8.4	2,887	144,273	119,036	1,525,108	48.95	0.01	Ausgrid
15990	Northern Beaches (A)	165	7.4	311	160,829	102,381	2,200,000	35.38	0.04	Ausgrid
18500	Woollahra (A)	131	5.9	63	180,025	25,972	3,210,000	48.35	0.01	Ausgrid
14500	Ku-ring-gai (A)	130	5.8	32	176,751	44,525	1,910,000	45.82	0.03	Ausgrid
11570	Canterbury-Bankstown (A)	114	5.1	155	101,544	126,214	820,000	22.48	0.03	Ausgrid/Endeavour Energy
18050	Waverley (A)	103	4.6	210	172,249	31,511	2,450,000	45.19	0.02	Ausgrid
15950	North Sydney (A)	91	4.1	344	190,901	37,692	2,190,000	55.29	0.01	Ausgrid
16700	Ryde (C)	85	3.8	1,301	133,022	50,721	1,550,000	40.91	0.03	Ausgrid
15900	Newcastle (C)	79	3.5	834	103,945	71,086	508,560	26.73	0.07	Ausgrid
18250	Willoughby (C)	76	3.4	79	171,743	30,479	2,150,000	46.00	0.03	Ausgrid
16550	Randwick (C)	72	3.2	130	147,695	59,776	1,955,000	38.93	0.02	Ausgrid
17420	The Hills Shire (A)	63	2.8	213	167,173	57,530	1,200,000	35.10	0.08	Endeavour Energy/Ausgrid
16260	Parramatta (C)	59	2.6	93	125,617	94,104	850,000	37.90	0.03	Endeavour Energy/Ausgrid
14000	Hornsby (A)	58	2.6	84	157,279	53,292	1,210,000	39.39	0.06	Ausgrid/Endeavour Energy
15350	Mosman (A)	48	2.1	225	177,442	13,210	3,180,000	48.34	0.02	Ausgrid
11520	Canada Bay (A)	47	2.1	197	155,074	38,176	1,800,000	39.95	0.02	Ausgrid
14170	Inner West (A)	46	2.1	24	158,601	81,669	1,800,000	42.86	0.02	Ausgrid
10500	Bayside (A)	45	2.0	180	124,462	66,949	1,300,000	29.98	0.02	Ausgrid
11650	Central Coast (C) (NSW)	45	2.0	1,136	82,985	146,282	460,000	18.94	0.08	Ausgrid
14700	Lane Cove (A)	44	2.0	160	168,225	17,101	2,000,000	48.56	0.03	Ausgrid

Source: NIEIR, ABS, CER, PlugShare.

6.6 Regional regression model

The regression equation is ultimately used to allocate electric vehicle sales into each region for each year. The dependent variable is therefore the share of total state registrations within each LGA in per cent terms. The drivers of regional variation in electric vehicle registrations include demographic and social factors such as household income, education, and age group. Regional GRP is also used as an indicator of business activity, as many new electric vehicle sales are fleet purchases.

Other important factors to consider are access to public transport, weekday commute distance, availability of charging infrastructure and the average age of all registered vehicles (used to proxy demand for new car sales).

Even though the dependent variable is based on total registrations, it is used to allocate the sales of electric vehicles by region within each year as it is indicative of the market.

All variables have been standardised to population (and in some cases the household). This allows the equation to pick up difference in underlying demographics, rather than favour LGA's with large populations.

A full listing of summary statistics for each variable are shown in Table 6.5.

The dependent variable is the per cent share of electric vehicles registered within each NSW Local Government Area (LGA). The coefficient on each of the independent variables gives the rise, or decline in the regional share of electric vehicles. For example, the regional share will increase by around 3.9 per cent if half of the population within the LGA has a bachelor's degree of above (all else held at the average).

The most significant determinants of plug-in electric vehicle uptake according the NIEIR's analysis include:

- **Household income** – a non-linear specification was used that emphasises a higher concentration of registrations at higher levels of income;
- **Availability of public transport** – better access to public transport provides a greener substitute that suppresses demand for plug-in electric vehicles (and motor vehicles as a whole); and
- **Tertiary education**.

These relationships will change across time as the market matures. The demographics of the current ownership are typical of an early adopter market (high income, highly educated). As the market matures, and cost barriers are reduced, the forecast coefficients are expected to reflect a wider dispersion of new car sales. In the three years since 2016, the concentration of electric vehicle registrations for higher income households has continued to increase for wealthier LGAs.

The new car market will continue to be dominated by business and fleet purchases that have more willingness and capacity to pay a premium for electric vehicles. Ownership of clean vehicles can be a form of signalling for businesses, can be used to meet environmental goals.

Private ownership will only grow when the market reaches greater maturity. At this stage, there is a lack of a second-hand market, which is dominated by private individuals. As fleet owners sell off older vehicles a second-hand market will emerge which will help increase the penetration of plug-in electric vehicles.

The market, annual energy and maximum demand forecasts for each LGA were mapped down to each Endeavour Energy zone substation from this regional model.

Table 6.5 NSW regional share model for plug-in electric vehicles – Summary statistics					
	Mean	Median	Standard deviation	Minimum	Maximum
Share of NSW electric vehicle registrations	0.01	0.00	0.02	0.00	0.08
Public charging station capacity (kw) per capita	0.01	0.00	0.01	0.00	0.10
Household Income squared per household	0.34	0.06	0.54	0.00	2.65
Industry GRP per capita	0.07	0.06	0.05	0.03	0.54
Inverse density (land area per population)	-1.24	-0.89	1.46	-3.96	1.96
Has Bachelors Degree or higher	0.20	0.16	0.11	0.08	0.55
PV installations (no.) per capita	0.07	0.07	0.04	0.00	0.16
Proportion public transport taken to work	0.03	0.00	0.05	0.00	0.20
Age 40 to 59	0.27	0.26	0.02	0.21	0.32
Married	0.39	0.40	0.04	0.20	0.49
Average distance travelled per workday/100	0.25	0.23	0.05	0.14	0.49
Average age of vehicle registrations	11.04	11.50	1.53	7.30	14.00
Kur-ring-gai = 1	0.01	0.00	0.09	0.00	1.00

Table 6.6 NSW regional market share of electric vehicles – Regression results				
Variable name	Coefficient	Standard deviation	t-stat	p-value
intercept	1.98%	0.15%	13.1	0.00
Public charging station capacity (kw) per capita	-0.19%	1.64%	-0.1	0.46
Household Income squared per household	1.73%	2.80%	0.6	0.27
Industry GRP per capita	4.72%	4.21%	1.1	0.14
Inverse density (land area per population)	0.09%	4.44%	0.0	0.49
Share of Bachelors Degrees	7.82%	1.80%	4.3	0.00
PV installations (no.) per capita	-1.61%	1.54%	-1.0	0.15
Proportion public transport taken to work	-10.88%	0.11%	-102.2	0.00
Age 40 to 59	-5.23%	0.70%	-7.4	0.00
Married	-2.49%	0.36%	-6.9	0.00
Average distance travelled per workday/100	-2.92%	0.45%	-6.4	0.00
Average age of vehicle registrations	-0.01%	0.64%	0.0	0.49
Kur-ring-gai = 1	2.40%	0.80%	3.0	0.00
R-squared	81.36%			
Root mean squared error	0.006222			

6.7 Public and private charging infrastructure

The Figures 6.7 and 6.8 contain the public charging capacity by Local Government Area for NSW and the Greater Sydney region. The data was analysed from the PlugShare map in April, 2021. This includes chargers at all capacity levels that are available for everyone to use. This includes standard wall outlets, dedicated electric vehicle charging stations and fast chargers.

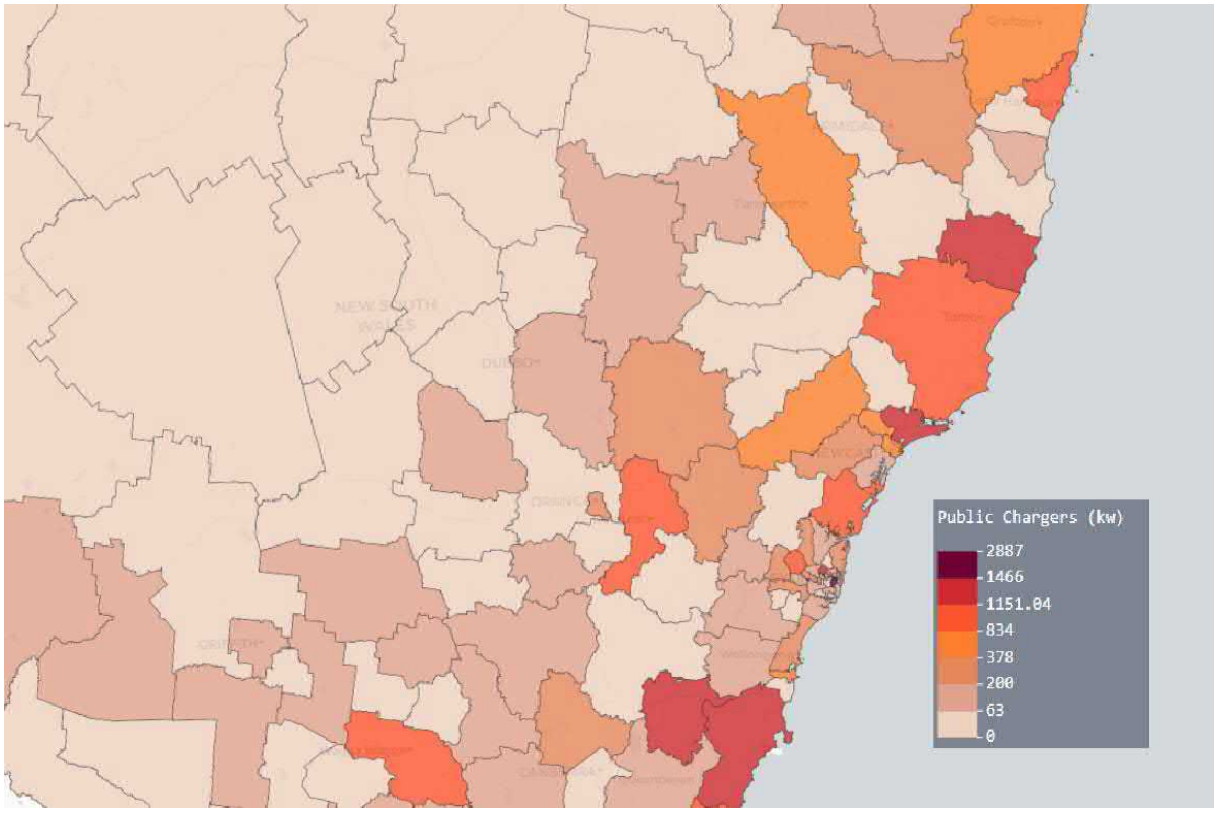
The dispersion of public charging infrastructure is centred around major and regional cities, in particular fast charging stations. This does not necessarily align with where electric vehicles are registered. Public charging infrastructure is overrepresented in regional cities compared to the stock of plug-in electric vehicles within each LGA. This is to support longer destination travel. The public charging capacity also includes accommodation that have listed standard outlets as available for public charging. These outlets could be at caravan parks and be more commonly used by caravans. This is a common occurrence when the regional area has a large tourism industry.

The availability of public charging infrastructure continues to grow in New South Wales. NIEIR conducted a similar survey of public charging capacity in May, 2016 and August 2018 for Endeavour Energy. In the past five years NSW public charging capacity has increased from around 4 MW to 34.5 MW. PlugShare is a service that relies on voluntary reporting of charging stations by its registered users. Part of the increase could therefore be due to increased awareness about plug-in electric vehicles and an increase in reporting of charging stations that already existed, but were not previously reported.

One limitation of public charging infrastructure is that the plugs are not standardised. Different brands of electric vehicle will take different plug types. For example, Tesla have their own plug type. There are leads that convert plug types, and some stations provide multiple outlet types, but compatibility can be an issue.

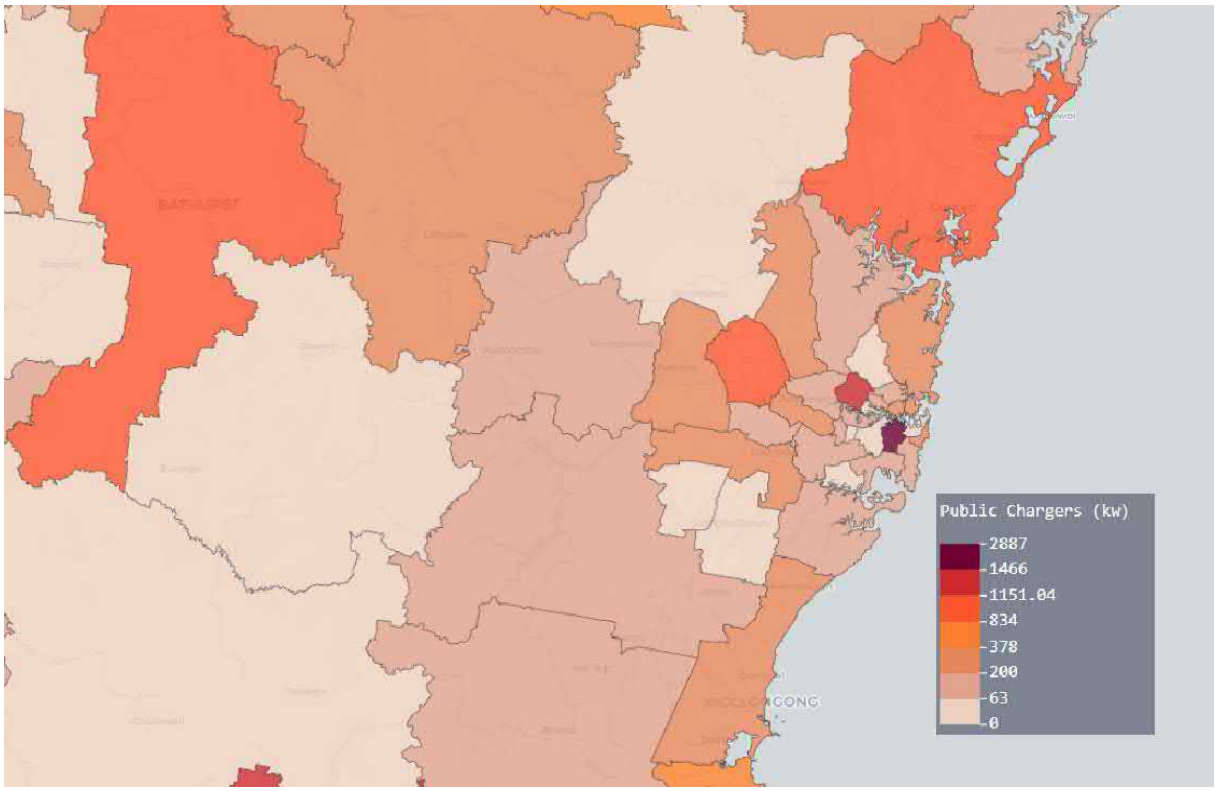
Private charging stations are not shown on the map, and can be anything from a standard wall outlet to a dedicated charging facility installed in a residence or company.

Figure 6.7: Public charging capacity 2021 (kW) – New South Wales



Note: Excluding ACT.
Source: PlugShare, NIEIR.

Figure 6.8: Public charging capacity 2021 (kW) – Greater Sydney



Note: Excluding ACT.
Source: PlugShare, NIEIR.

Endeavour Energy have requested that energy and maximum demand impacts be separated out into residential, commercial and industrial sectors. For plug-in electric vehicles, the allocation depends on where each of these charging stations are installed, and the behaviour of the plug-in electric vehicle owners that use them.

Each customer class represents an alternative type of charging stations and a different set of consumers using them. The residential sector demand comes from standard wall outlets, and dedicated chargers that have been installed on the premise (such as within a garage). The vehicles charging in households are more likely privately owned. These have the lowest average demand (kW) of the three customer tariff classes. Public chargers are mostly assumed to be on a commercial tariff with a small amount on an industrial tariff. These are used by a mix of private and non-privately owned vehicles. Privately owned charging stations are also likely to be attached to a commercial or industrial tariff. These are for use by employees or fleet electric vehicle.

Table 6.7 contains a summary of available charging infrastructure by location. While there are other levels of demand available, especially for public and commercial charging stations, is a representative snapshot of the market. The market chargers were weighted by an assumed availability to give the weighted average demands by location. These were used as an input into the maximum demand impact forecasts.

Table 6.7 Summary of electric vehicle chargers

Charging type	Typical demands (kW)
Market	
Public – Fast charger	190
Public – Fast charger	50
Public – Level 2	21
Public – Level 2	7
Public – Level 2	4
Private – Level 2	7
Private – Level 2	3.4
Private – Level 1	2.5
Weighted average by location	
Home	4.5
Work	10.9
Public	14.0

6.8 Plug-in electric vehicles – Annual energy

The estimate for annual energy is based on the electric distance travelled per annum by an assumed average energy used per kilometre of travel (Wh), which will need to be charged from the grid.

The distance travelled per annum differs between each LGA. The average distance travelled for each LGA is source from the ABS. This data is altered according to the mix of plug-in electric vehicle technology, and ownership of vehicles. PHEV's use a mix of both petrol and electricity, which reduces their effective annual electric kilometres.

Depending on the region, annual travel ranges from 8,300km to 23,900 km for NSW LGAs with an average of around 14,000 km for privately owned vehicles. Non-privately owned vehicles have a higher annual travel distance ranging from 14,000 km to 26,000 km. Annual travel is typically higher for LGA's that are further away from city centres where many people commute to work.

The energy use per kilometre of travel is based upon vehicle statistics from the Green Vehicle Guide, adjusted for real world conditions and sales model weighted. The energy usage for BEVs is assumed to be around 200 Wh per km, while PHEVs are assumed to use around 250 Wh per km.

The annual figures displayed below are the annual energy consumed by the total stock of plug-in electric vehicles within NSW and Endeavour regions. The post-modelling adjustment is recommended to be the difference from the base year (e.g. the 2024 adjustment is the difference between the 2024 year and 2021 year energies). These numbers represent the increase to annual energy per annum.

Table 6.8 Plug-in electric vehicles annual energy impact (calendar years) – New South Wales (GWh)															
Technology	**Ownership**	**Sector**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
BEV	Private	Residential	4.2	5.9	8.7	12.6	19.6	32.3	51.9	75.7	106.2	141.7	183.0	229.4	282.9
BEV	Private	Commercial	0.3	0.5	0.8	1.4	2.6	4.6	7.5	11.3	16.2	22.2	29.4	37.9	46.7
BEV	Private	Industrial	0.1	0.1	0.2	0.3	0.6	1.0	1.7	2.6	3.9	5.5	7.4	9.8	12.1
BEV	Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV	Non-Private (Buses)	Commercial	0.0	0.0	0.4	1.1	1.8	3.3	5.8	10.1	17.7	27.5	41.9	54.2	63.6
BEV	Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.1	0.2	0.4	0.6	1.1	2.0	3.1	4.7	6.0	7.1
BEV	Non-Private (Other)	Residential	1.7	2.3	3.3	4.6	6.8	10.6	15.8	21.3	27.5	33.7	39.7	45.7	53.9
BEV	Non-Private (Other)	Commercial	4.2	5.7	8.2	11.5	17.7	28.1	43.3	60.4	80.6	102.6	125.8	151.5	179.1
BEV	Non-Private (Other)	Industrial	0.3	0.5	0.7	1.1	1.7	2.9	4.6	6.7	9.4	12.5	16.0	20.1	23.7
Sub-total			**10.8**	**15.1**	**22.4**	**32.8**	**51.1**	**83.1**	**131.3**	**189.2**	**263.5**	**348.7**	**448.0**	**554.7**	**669.1**
PHEV	Private	Residential	2.0	2.8	4.1	6.2	10.5	17.6	27.8	39.3	52.9	67.4	82.7	98.6	115.6
PHEV	Private	Commercial	0.1	0.2	0.4	0.7	1.4	2.5	4.0	5.9	8.1	10.5	13.3	16.3	19.1
PHEV	Private	Industrial	0.0	0.1	0.1	0.2	0.3	0.5	0.9	1.4	1.9	2.6	3.4	4.2	5.0
PHEV	Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHEV	Non-Private (Buses)	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHEV	Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHEV	Non-Private (Other)	Residential	0.8	1.1	1.6	2.3	3.8	6.0	8.9	11.8	14.8	17.5	19.9	22.0	24.6
PHEV	Non-Private (Other)	Commercial	1.9	2.7	4.0	5.9	9.8	15.9	24.4	33.3	43.2	53.3	63.2	72.9	81.8
PHEV	Non-Private (Other)	Industrial	0.2	0.2	0.4	0.6	1.0	1.6	2.6	3.7	5.0	6.5	8.0	9.7	10.8
Sub-total			**5.0**	**7.1**	**10.6**	**15.9**	**26.7**	**44.2**	**68.7**	**95.3**	**125.9**	**157.7**	**190.4**	**223.6**	**257.0**
TOTAL	Private	Residential	6.2	8.7	12.9	18.8	30.1	49.9	79.7	115.0	159.0	209.0	265.7	328.0	398.5
TOTAL	Private	Commercial	0.5	0.7	1.2	2.1	4.0	7.1	11.6	17.1	24.3	32.7	42.7	54.2	65.9
TOTAL	Private	Industrial	0.1	0.2	0.3	0.5	0.9	1.6	2.6	4.0	5.8	8.0	10.8	14.1	17.1
TOTAL	Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	Non-Private (Buses)	Commercial	0.0	0.0	0.4	1.1	1.8	3.3	5.8	10.1	17.7	27.5	41.9	54.2	63.6
TOTAL	Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.1	0.2	0.4	0.6	1.1	2.0	3.1	4.7	6.0	7.1
TOTAL	Non-Private (Other)	Residential	2.4	3.4	5.0	6.9	10.6	16.6	24.7	33.1	42.3	51.2	59.6	67.7	78.5
TOTAL	Non-Private (Other)	Commercial	6.1	8.4	12.1	17.4	27.4	44.0	67.7	93.7	123.9	155.8	189.0	224.4	260.9
TOTAL	Non-Private (Other)	Industrial	0.5	0.7	1.1	1.6	2.7	4.5	7.2	10.4	14.4	19.0	24.0	29.8	34.6
TOTAL			**15.8**	**22.1**	**33.0**	**48.7**	**77.7**	**127.3**	**199.9**	**284.6**	**389.4**	**506.4**	**638.4**	**778.3**	**926.1**

Table 6.9 Plug-in electric vehicles annual energy impact (calendar years) – Endeavour Energy (GWh)															
Technology	**Ownership**	**Tariff**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
BEV	Private	Residential	0.9	1.3	1.8	2.7	4.3	7.2	11.5	16.9	23.9	32.2	41.9	52.6	64.9
BEV	Private	Commercial	0.1	0.1	0.2	0.3	0.6	1.0	1.7	2.5	3.7	5.0	6.7	8.7	10.7
BEV	Private	Industrial	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.6	0.9	1.2	1.7	2.3	2.8
BEV	Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV	Non-Private (Buses)	Commercial	0.0	0.0	0.0	0.0	0.3	0.8	1.8	3.4	6.3	10.0	15.5	20.2	23.7
BEV	Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.7	1.1	1.7	2.2	2.6
BEV	Non-Private (Other)	Residential	0.3	0.4	0.6	0.9	1.3	2.0	2.9	3.9	5.0	6.0	7.0	8.0	9.5
BEV	Non-Private (Other)	Commercial	0.8	1.0	1.5	2.2	3.3	5.3	8.0	11.1	14.6	18.4	22.2	26.6	31.5
BEV	Non-Private (Other)	Industrial	0.1	0.1	0.1	0.2	0.3	0.5	0.9	1.2	1.7	2.2	2.8	3.5	4.2
Sub-total			**2.1**	**2.9**	**4.3**	**6.4**	**10.3**	**17.1**	**27.3**	**40.1**	**56.8**	**76.3**	**99.6**	**124.2**	**150.0**
PHEV	Private	Residential	0.4	0.6	0.9	1.4	2.3	3.9	6.1	8.6	11.6	14.8	18.2	21.7	25.5
PHEV	Private	Commercial	0.0	0.0	0.1	0.2	0.3	0.6	0.9	1.3	1.8	2.3	2.9	3.6	4.2
PHEV	Private	Industrial	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1
PHEV	Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHEV	Non-Private (Buses)	Commercial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHEV	Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHEV	Non-Private (Other)	Residential	0.1	0.2	0.3	0.4	0.7	1.0	1.5	2.0	2.5	3.0	3.4	3.8	4.3
PHEV	Non-Private (Other)	Commercial	0.3	0.4	0.7	1.0	1.7	2.7	4.2	5.7	7.4	9.2	10.9	12.6	14.2
PHEV	Non-Private (Other)	Industrial	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.9	1.1	1.4	1.7	1.9
Sub-total			**0.9**	**1.3**	**2.0**	**3.1**	**5.2**	**8.6**	**13.4**	**18.6**	**24.7**	**31.0**	**37.6**	**44.3**	**51.2**
TOTAL	Private	Residential	1.3	1.8	2.7	4.1	6.6	11.1	17.6	25.6	35.6	47.0	60.1	74.4	90.4
TOTAL	Private	Commercial	0.1	0.1	0.3	0.5	0.9	1.6	2.6	3.8	5.4	7.4	9.7	12.3	14.9
TOTAL	Private	Industrial	0.0	0.0	0.1	0.1	0.2	0.3	0.6	0.9	1.3	1.8	2.4	3.2	3.9
TOTAL	Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	Non-Private (Buses)	Commercial	0.0	0.0	0.0	0.0	0.3	0.8	1.8	3.4	6.3	10.0	15.5	20.2	23.7
TOTAL	Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.7	1.1	1.7	2.2	2.6
TOTAL	Non-Private (Other)	Residential	0.4	0.6	0.9	1.3	1.9	3.0	4.5	5.9	7.5	9.1	10.5	11.8	13.7
TOTAL	Non-Private (Other)	Commercial	1.1	1.5	2.2	3.2	5.0	8.0	12.2	16.8	22.1	27.6	33.1	39.2	45.7
TOTAL	Non-Private (Other)	Industrial	0.1	0.1	0.2	0.3	0.5	0.8	1.3	1.9	2.6	3.4	4.2	5.2	6.1
TOTAL			**3.1**	**4.2**	**6.3**	**9.5**	**15.4**	**25.8**	**40.7**	**58.7**	**81.5**	**107.3**	**137.2**	**168.5**	**201.1**

Table 6.10 Annual energy impact by charging location (calendar years) – Endeavour Energy (GWh)													
Location	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Home	1.8	2.4	3.6	5.4	8.6	14.1	22.1	31.5	43.1	56.1	70.5	86.2	104.2
Work	1.1	1.5	2.3	3.5	5.9	9.9	15.7	22.9	32.1	42.7	55.4	67.9	79.8
Public	0.2	0.2	0.4	0.6	1.0	1.7	2.9	4.3	6.2	8.5	11.3	14.5	17.2
Total	**3.1**	**4.2**	**6.3**	**9.5**	**15.4**	**25.8**	**40.7**	**58.7**	**81.5**	**107.3**	**137.2**	**168.5**	**201.1**

6.9 Plug-in electric vehicles – Maximum demand

The summer and winter maximum demand impacts for NSW and Endeavour Energy by vehicle ownership and customer class. This table is presented at a consistent 4:30 pm peak time for summer and 6:00 pm for winter. The entire range of half-hourly intervals were provided to Endeavour Energy for the network and each zone substation.

The demand impacts were based on:

- forecasts of plug-in electric vehicles by ownership and segment;
- coincidence of electric vehicle charging events;
- location of charging event by time of day; and
- weighted average charger demands by location.

For each interval across the day the demand impacts are segmented into private and non-private ownership, and differ by where they are expected to charge (residential, commercial, industrial).

Plug-in electric vehicles are expected to have a small impact on the Endeavour Energy network over the next 10 years, with most of the increase in demands occurring at the end of the forecasting period. Endeavour Energy has a proportionally lower impact that NSW due to lower uptake of vehicles.

Tables 6.11 to 6.17 contain the maximum demand impacts for NSW and Endeavour Energy at typical peak times for summer and winter. At a summer peak time of 5:00 pm it is expected that plug-in electric vehicles will contribute a total of 11.2 MW to NSW summer peak demand, and 2.0 MW for Endeavour Energy in 2022. This is an increase of around 3.6 MW for NSW, and 0.7 MW for Endeavour Energy compared to summer 2021. The summer maximum demand impact increases to around 16.4 MW for the Endeavour Energy network by 2027, and will increase more sharply towards the end of the forecasting period to around 46.0 MW.

Tables 6.17 and 6.18 contains the number of plug-in electric vehicles that are charging during summer at 5:00 pm. Overall, it is expected that around 7.4 per cent of the total stock will be charging coincident to network peak demand.

Table 6.11 Plug-in electric vehicles summer maximum demand impact (5:00 PM) – New South Wales (MW)

Ownership	Sector	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Private	Residential	1.3	1.9	2.7	4.4	7.3	11.7	16.8	23.2	30.4	38.5	47.3	57.3	68.2
Private	Commercial	0.6	1.0	1.5	2.8	5.0	8.2	12.4	17.7	24.2	32.0	41.2	49.8	59.3
Private	Industrial	0.2	0.2	0.4	0.7	1.2	2.0	3.0	4.4	6.0	8.0	10.4	12.7	15.1
Private	*Sub-total*	*2.0*	*3.1*	*4.7*	*7.9*	*13.5*	*21.9*	*32.2*	*45.3*	*60.7*	*78.6*	*98.9*	*119.8*	*142.6*
Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Private (Buses)	Commercial	0.0	0.0	0.1	0.1	0.2	0.3	0.6	1.1	1.7	2.6	3.4	4.0	4.7
Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7
Non-Private (Buses)	*Sub-total*	*0.0*	*0.0*	*0.1*	*0.1*	*0.2*	*0.4*	*0.7*	*1.2*	*2.0*	*3.0*	*3.9*	*4.7*	*5.4*
Non-Private (Other)	Residential	0.4	0.5	0.8	1.2	1.8	2.7	3.6	4.6	5.6	6.5	7.4	8.5	9.7
Non-Private (Other)	Commercial	2.3	3.4	4.9	7.8	12.6	19.6	27.3	36.4	46.2	56.5	67.6	78.3	89.2
Non-Private (Other)	Industrial	0.4	0.6	0.9	1.5	2.5	4.0	5.8	7.9	10.4	13.2	16.3	18.8	21.4
Non-Private (Other)	*Sub-total*	*3.1*	*4.5*	*6.5*	*10.4*	*16.9*	*26.3*	*36.7*	*49.0*	*62.2*	*76.1*	*91.2*	*105.6*	*120.2*
TOTAL	Residential	1.6	2.4	3.5	5.6	9.2	14.4	20.5	27.8	36.0	45.0	54.7	65.8	77.9
TOTAL	Commercial	2.9	4.4	6.5	10.7	17.8	28.2	40.3	55.3	72.1	91.1	112.1	132.2	153.1
TOTAL	Industrial	0.5	0.8	1.3	2.2	3.7	6.0	8.8	12.5	16.7	21.6	27.2	32.1	37.2
TOTAL	**TOTAL**	**5.1**	**7.6**	**11.3**	**18.5**	**30.6**	**48.6**	**69.6**	**95.6**	**124.8**	**157.7**	**194.1**	**230.1**	**268.2**

Note: Financial year.

Table 6.12 Plug-in electric vehicles summer maximum demand impact (5:00 PM) – Endeavour Energy (MW)														
Segment	**Sector**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Private	Residential	0.2	0.3	0.5	0.8	1.3	2.1	3.0	4.2	5.6	7.1	8.7	10.6	12.6
Private	Commercial	0.1	0.2	0.3	0.5	0.9	1.5	2.2	3.2	4.4	5.9	7.6	9.2	10.9
Private	Industrial	0.0	0.0	0.1	0.1	0.2	0.4	0.5	0.8	1.1	1.5	1.9	2.3	2.8
Private Total	*Sub-total*	*0.3*	*0.5*	*0.8*	*1.4*	*2.4*	*3.9*	*5.8*	*8.2*	*11.1*	*14.4*	*18.2*	*22.1*	*26.3*
Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Private (Buses)	Commercial	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.6	1.0	1.3	1.5	1.7
Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3
Non-Private (Buses) Total	*Sub-total*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*0.1*	*0.2*	*0.4*	*0.7*	*1.1*	*1.5*	*1.7*	*2.0*
Non-Private (Other)	Residential	0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	1.6
Non-Private (Other)	Commercial	0.4	0.6	0.8	1.3	2.2	3.3	4.6	6.1	7.7	9.3	11.1	12.9	14.7
Non-Private (Other)	Industrial	0.1	0.1	0.1	0.2	0.4	0.7	1.0	1.3	1.7	2.2	2.7	3.1	3.5
Non-Private (Other) Total	*Sub-total*	*0.5*	*0.7*	*1.1*	*1.8*	*2.9*	*4.5*	*6.2*	*8.2*	*10.4*	*12.6*	*15.0*	*17.4*	*19.9*
TOTAL	Residential	0.3	0.4	0.6	1.0	1.6	2.6	3.7	5.0	6.5	8.1	9.9	12.0	14.2
TOTAL	Commercial	0.5	0.7	1.1	1.8	3.1	4.9	7.1	9.7	12.8	16.2	20.0	23.6	27.4
TOTAL	Industrial	0.1	0.1	0.2	0.4	0.6	1.0	1.5	2.2	2.9	3.8	4.8	5.7	6.6
TOTAL	**TOTAL**	**0.8**	**1.3**	**1.9**	**3.2**	**5.4**	**8.5**	**12.2**	**16.9**	**22.2**	**28.1**	**34.7**	**41.2**	**48.2**

Note: Financial year.

Table 6.13 Plug-in electric vehicles summer maximum demand impact (5:00 PM) by charging location – Endeavour Energy (MW)													
Location	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Home	0.3	0.4	0.6	1.0	1.6	2.6	3.7	5.0	6.5	8.1	9.9	12.0	14.2
Work	0.3	0.5	0.8	1.2	2.0	3.2	4.4	6.0	7.7	9.5	11.5	13.5	15.5
Public	0.2	0.4	0.6	1.0	1.7	2.8	4.1	5.9	8.0	10.4	13.3	15.8	18.5
Total	**0.8**	**1.3**	**1.9**	**3.2**	**5.4**	**8.5**	**12.2**	**16.9**	**22.2**	**28.1**	**34.7**	**41.2**	**48.2**

Table 6.14 Plug-in electric vehicles winter maximum demand impact (6:00 PM) – New South Wales (MW)														
Segment	**Sector**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Private	Residential	1.8	2.7	4.1	6.7	10.9	16.4	23.0	30.7	39.5	49.2	60.0	72.0	85.0
Private	Commercial	0.7	1.2	2.1	3.7	6.3	9.8	14.4	20.0	26.9	35.0	43.5	52.1	61.6
Private	Industrial	0.2	0.3	0.5	0.9	1.5	2.4	3.5	5.0	6.7	8.8	11.0	13.2	15.6
Private Total	*Sub-total*	*2.7*	*4.2*	*6.7*	*11.3*	*18.7*	*28.5*	*40.8*	*55.7*	*73.1*	*93.0*	*114.5*	*137.3*	*162.1*
Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Private (Buses)	Commercial	0.0	0.0	0.1	0.2	0.3	0.5	0.8	1.4	2.1	3.0	3.7	4.3	5.0
Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.6	0.7
Non-Private (Buses) Total	*Sub-total*	*0.0*	*0.1*	*0.1*	*0.2*	*0.3*	*0.5*	*1.0*	*1.6*	*2.5*	*3.4*	*4.3*	*5.0*	*5.7*
Non-Private (Other)	Residential	0.5	0.7	1.1	1.7	2.6	3.6	4.7	5.9	6.9	8.0	9.1	10.4	11.7
Non-Private (Other)	Commercial	2.6	3.8	5.9	9.4	14.9	21.7	29.5	38.3	47.6	57.6	67.7	77.7	87.8
Non-Private (Other)	Industrial	0.5	0.7	1.1	1.9	3.1	4.6	6.5	8.8	11.2	14.0	16.7	19.2	21.7
Non-Private (Other) Total	*Sub-total*	*3.6*	*5.3*	*8.1*	*13.0*	*20.6*	*30.0*	*40.8*	*52.9*	*65.8*	*79.6*	*93.6*	*107.3*	*121.2*
TOTAL	Residential	2.3	3.4	5.2	8.5	13.5	20.0	27.7	36.6	46.4	57.1	69.1	82.4	96.7
TOTAL	Commercial	3.4	5.1	8.0	13.3	21.5	32.0	44.7	59.7	76.6	95.5	114.9	134.2	154.3
TOTAL	Industrial	0.7	1.0	1.6	2.8	4.6	7.1	10.2	13.9	18.3	23.3	28.3	33.1	38.0
TOTAL	**TOTAL**	**6.4**	**9.5**	**14.9**	**24.5**	**39.6**	**59.1**	**82.6**	**110.2**	**141.3**	**176.0**	**212.3**	**249.7**	**289.0**

Note: Calendar year.

Table 6.15 Plug-in electric vehicles winter maximum demand impact (6:00 PM) – Endeavour Energy (MW)														
Segment	**Sector**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Private	Residential	0.3	0.5	0.7	1.2	2.0	2.9	4.2	5.6	7.2	9.1	11.1	13.3	15.7
Private	Commercial	0.1	0.2	0.4	0.7	1.1	1.8	2.6	3.6	4.9	6.4	8.0	9.6	11.4
Private	Industrial	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.9	1.2	1.6	2.0	2.4	2.9
Private Total	*Sub-total*	*0.5*	*0.7*	*1.2*	*2.0*	*3.4*	*5.1*	*7.4*	*10.1*	*13.4*	*17.1*	*21.1*	*25.3*	*29.9*
Non-Private (Buses)	Residential	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Private (Buses)	Commercial	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.5	0.8	1.1	1.4	1.6	1.9
Non-Private (Buses)	Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3
Non-Private (Buses) Total	*Sub-total*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*0.2*	*0.3*	*0.6*	*0.9*	*1.3*	*1.6*	*1.9*	*2.1*
Non-Private (Other)	Residential	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.3	1.5	1.7	1.9
Non-Private (Other)	Commercial	0.4	0.6	1.0	1.6	2.5	3.7	5.0	6.4	7.9	9.5	11.2	12.8	14.5
Non-Private (Other)	Industrial	0.1	0.1	0.2	0.3	0.5	0.8	1.1	1.5	1.9	2.3	2.8	3.2	3.6
Non-Private (Other) Total	*Sub-total*	*0.6*	*0.9*	*1.4*	*2.2*	*3.5*	*5.1*	*6.9*	*8.9*	*10.9*	*13.1*	*15.4*	*17.7*	*20.0*
TOTAL	Residential	0.4	0.6	0.9	1.5	2.4	3.6	5.0	6.6	8.4	10.4	12.6	15.0	17.6
TOTAL	Commercial	0.6	0.9	1.4	2.3	3.7	5.6	7.9	10.6	13.6	17.0	20.6	24.1	27.7
TOTAL	Industrial	0.1	0.2	0.3	0.5	0.8	1.2	1.8	2.4	3.2	4.1	5.0	5.8	6.7
TOTAL	**TOTAL**	**1.1**	**1.6**	**2.6**	**4.3**	**6.9**	**10.4**	**14.6**	**19.6**	**25.2**	**31.5**	**38.1**	**44.9**	**52.1**

Note: Calendar year.

Table 6.16 Plug-in electric vehicles winter maximum demand impact (6:00 PM) by charging location – Endeavour Energy (MW)													
Location	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Home	0.4	0.6	0.9	1.5	2.4	3.6	5.0	6.6	8.4	10.4	12.6	15.0	17.6
Work	0.4	0.6	0.9	1.5	2.4	3.5	4.8	6.3	7.9	9.6	11.5	13.3	15.2
Public	0.3	0.5	0.8	1.3	2.2	3.4	4.9	6.7	8.9	11.5	14.1	16.6	19.3
Total	**1.1**	**1.6**	**2.6**	**4.3**	**6.9**	**10.4**	**14.6**	**19.6**	**25.2**	**31.5**	**38.1**	**44.9**	**52.1**

Table 6.17 Plug-in electric vehicles charging at summer peak demand (5:00 PM) – New South Wales															
Segment	**Sector**	**Units**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Private	Residential	no.	285	421	614	988	1637	2612	3759	5181	6785	8591	10567	12797	15227
Private	Commercial	no.	19	34	57	111	197	322	474	669	899	1168	1476	1787	2127
Private	Industrial	no.	6	9	14	24	43	72	110	160	221	295	383	464	553
Private	*Sub-total*	*no.*	*310*	*464*	*685*	*1123*	*1877*	*3006*	*4343*	*6010*	*7905*	*10054*	*12426*	*15049*	*17906*
Private	*Sub-total*	*%*	*7.6*	*7.6*	*7.6*	*7.5*	*7.5*	*7.5*	*7.5*	*7.5*	*7.5*	*7.5*	*7.5*	*7.5*	*7.5*
Non-Private (Other)	Residential	no.	83	121	171	263	411	614	825	1057	1285	1505	1712	1978	2245
Non-Private (Other)	Commercial	no.	175	254	368	582	936	1442	2001	2656	3353	4088	4858	5636	6422
Non-Private (Other)	Industrial	no.	15	22	34	56	94	152	220	305	403	513	637	738	840
Non-Private (Other)	*Sub-total*	*no.*	*272*	*398*	*573*	*901*	*1442*	*2208*	*3046*	*4019*	*5041*	*6106*	*7206*	*8351*	*9508*
Non-Private (Other)	*Sub-total*	*%*	*6.9*	*6.9*	*7.0*	*6.9*	*6.9*	*7.0*	*7.0*	*7.0*	*7.0*	*7.1*	*7.1*	*7.1*	*7.1*
Non-Private (Buses)	Residential	no.	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Private (Buses)	Commercial	no.	0	5	14	22	41	72	127	225	353	543	710	841	972
Non-Private (Buses)	Industrial	no.	0	0	0	0	1	1	2	4	6	9	12	14	16
Non-Private (Buses)	*Sub-total*	*no.*	*0*	*5*	*14*	*22*	*41*	*73*	*129*	*229*	*359*	*552*	*721*	*855*	*988*
Non-Private (Buses)	*Sub-total*	*%*	*0*	*17.7*	*17.7*	*17.7*	*17.7*	*17.7*	*17.7*	*17.7*	*17.7*	*17.7*	*17.7*	*17.7*	*17.7*
TOTAL	Residential	no.	367	542	785	1251	2049	3227	4584	6238	8071	10096	12279	14775	17473
TOTAL	Commercial	no.	195	294	439	715	1174	1836	2602	3551	4605	5800	7043	8264	9521
TOTAL	Industrial	no.	20	32	48	81	138	225	332	469	629	817	1032	1216	1409
TOTAL	**TOTAL**	**no.**	**583**	**867**	**1272**	**2047**	**3361**	**5288**	**7518**	**10258**	**13305**	**16713**	**20354**	**24255**	**28402**
TOTAL	**TOTAL**	**%**	**7.2**	**7.3**	**7.3**	**7.3**	**7.3**	**7.3**	**7.4**	**7.4**	**7.4**	**7.5**	**7.5**	**7.5**	**7.5**

Table 6.18 Plug-in electric vehicles charging at summer peak demand (5:00 PM) – Endeavour Energy															
Segment	**Sector**	**Units**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Private	Residential	no.	49	73	109	176	295	469	678	939	1236	1574	1942	2354	2804
Private	Commercial	no.	3	6	10	20	35	58	85	121	164	214	271	329	392
Private	Industrial	no.	1	2	3	4	8	13	20	29	40	54	70	85	102
Private	*Sub-total*	*no.*	*53*	*80*	*121*	*201*	*338*	*539*	*783*	*1090*	*1440*	*1842*	*2283*	*2768*	*3297*
Non-Private (Other)	Residential	no.	13	20	29	45	71	105	141	182	221	259	295	342	389
Non-Private (Other)	Commercial	no.	29	42	63	100	161	247	343	456	576	704	837	973	1111
Non-Private (Other)	Industrial	no.	2	4	6	10	16	26	38	52	69	88	110	127	145
Non-Private (Other)	*Sub-total*	*no.*	*45*	*66*	*98*	*154*	*248*	*378*	*522*	*690*	*867*	*1051*	*1242*	*1442*	*1645*
Non-Private (Buses)	Residential	no.	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-Private (Buses)	Commercial	no.	0	0	0	3	10	22	43	80	128	200	264	313	363
Non-Private (Buses)	Industrial	no.	0	0	0	0	0	0	1	1	2	3	4	5	6
Non-Private (Buses)	*Sub-total*	*no.*	*0*	*0*	*0*	*3*	*11*	*22*	*44*	*81*	*130*	*204*	*268*	*318*	*369*
TOTAL	Residential	no.	62	93	138	222	365	574	819	1121	1457	1833	2237	2695	3192
TOTAL	Commercial	no.	32	48	73	123	207	326	472	657	868	1118	1372	1615	1866
TOTAL	Industrial	no.	3	5	8	14	24	39	58	83	112	146	185	218	253
TOTAL	**TOTAL**	**no.**	**97**	**146**	**219**	**358**	**596**	**939**	**1349**	**1861**	**2437**	**3097**	**3793**	**4528**	**5311**

6.10 Time of day

The following charts contain select years for Endeavour Energy summer peak demand impacts. Each customer type has a different assumed charging profile during the across each time interval of the day. These profiles were informed by academic literature and trials of electric vehicles that logged charging events.

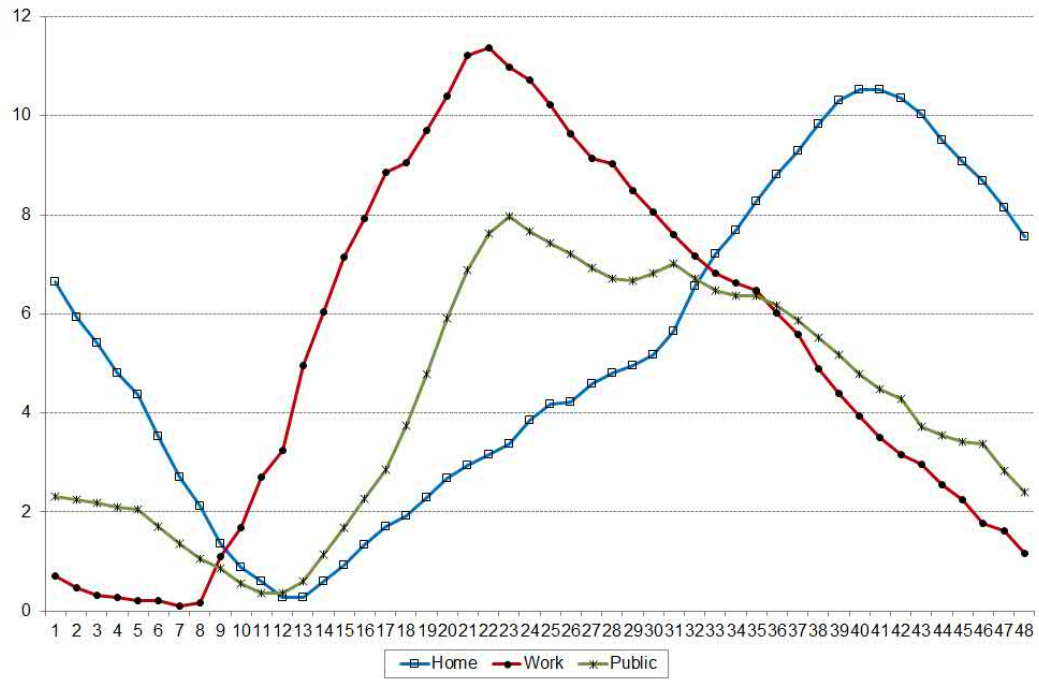
Figure 6.9 shows the assume profiles of electric vehicle charging for households, commercial premises and public charging stations. These show the percentage of plug-in electric vehicles that are expected to be charging at these premises. These profiles are then further weighted by ownership, tariff (residential, commercial, industrial). Where home charging is all on a residential tariff, work and public charging are mixes of commercial and industrial tariff charging. The majority of bus charging is expected to occur overnight at bus depots.

NIEIR assumes that most commercial charging will happen during the day at public charging stations workplaces, and shopping centres carparks with a peak mid-morning as people start their day. Conversely, most residential charging will happen overnight or when people return home from their daily activities. The same base profiles were used for winter, but were based on the stock of electric vehicles during winter.

While most privately owned plug-in electric vehicles are assumed to charge overnight, it appears that the highest demand may be during the middle of the day. This is in part due to the higher capacities of commercial/public charging stations so a lesser amount of vehicles charging are required to reach the same level of demand.

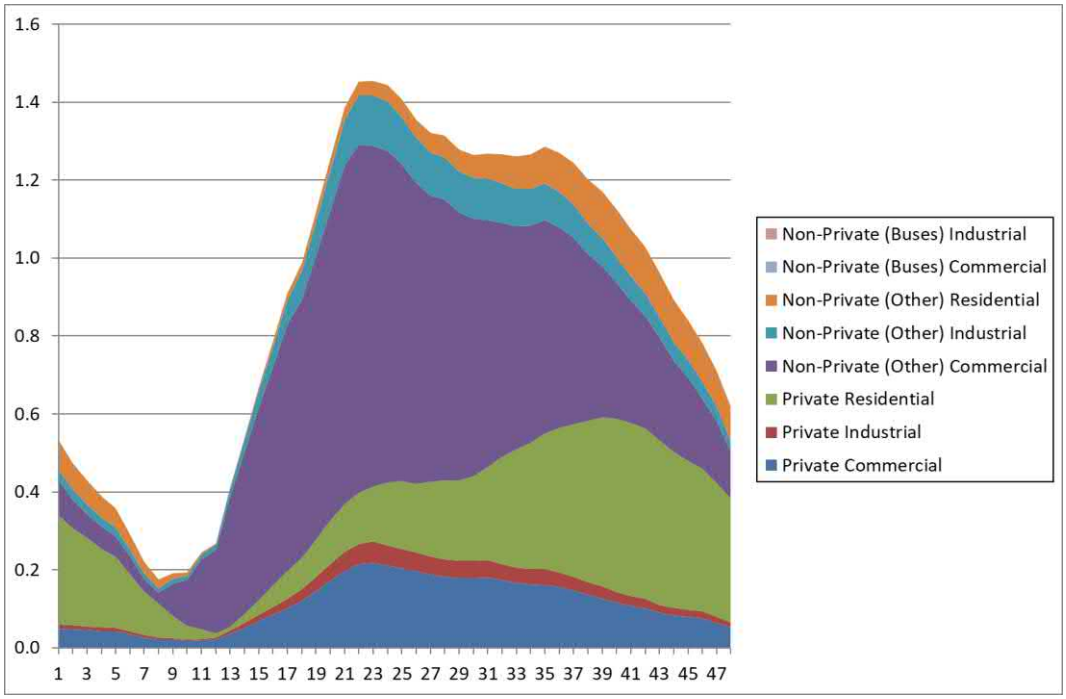
Figures 6.10 to 6.12 show three sample years across the forecasting period with the contribution of each ownership type and tariff toward the daily load profile of plug-in-electric vehicle charging. Overall, charging is strongest during the day when it is expected that there will be greater use of commercial and public charging stations. The residential segment grows into the evening and early AM. The least amount of demand is expected around 4:30am to 6:00am and is expected to remain weak as people charging events finish and people use their cars.

Figure 6.9: Plug-in electric vehicle daily charging profile – By location



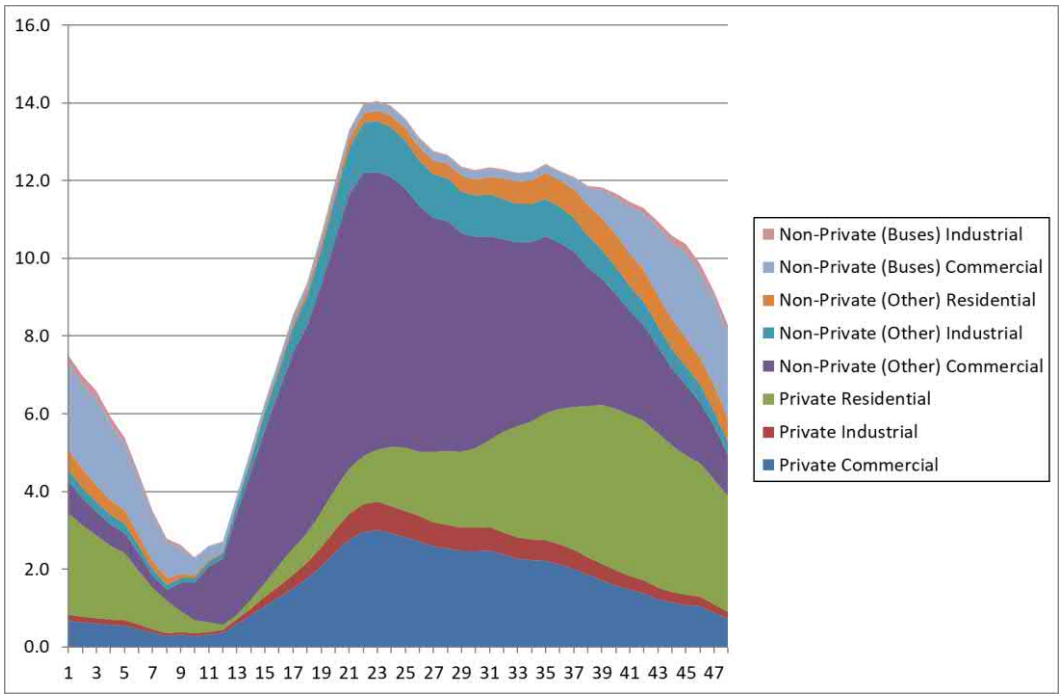
Source: NIEIR.

Figure 6.10: Endeavour Energy electric vehicle impact on summer peak day 2021



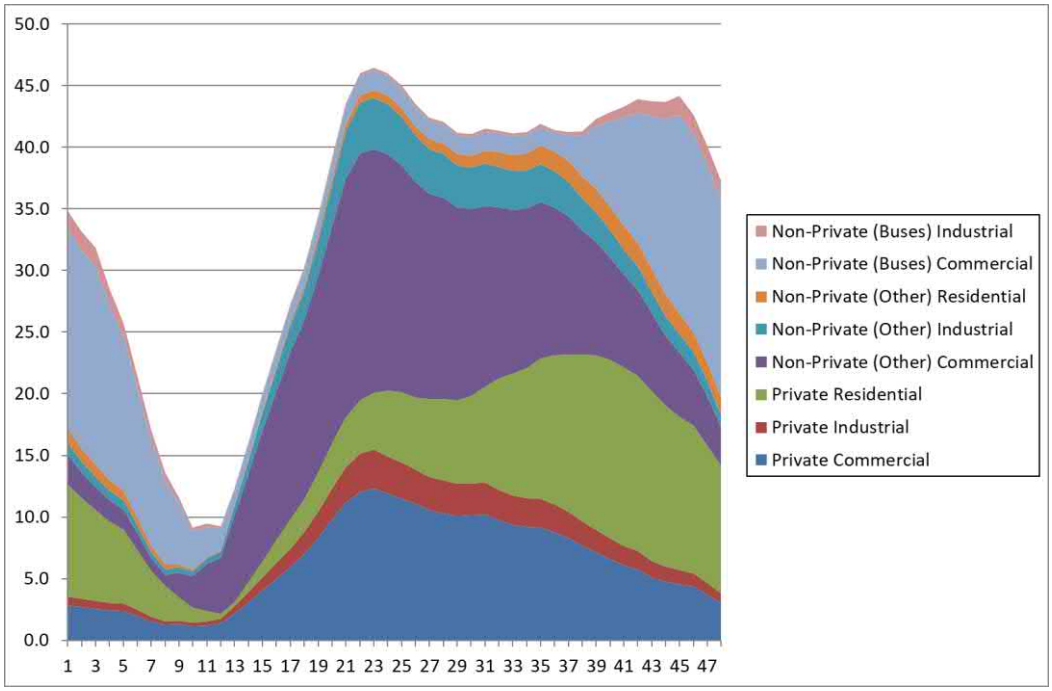
Source: NIEIR.

Figure 6.11: Endeavour Energy electric vehicle impact on summer peak day 2026



Source: NIEIR.

Figure 6.12: Endeavour Energy electric vehicle impact on summer peak day 2031



Source: NIEIR.

7. Energy performance standards for appliances and products

7.1 Introduction

Improving the energy efficiency of appliances and products has significant economic and environmental benefits for Australia by reducing greenhouse gas emissions and energy sales and demands. Energy efficiency improvement reduces the running costs of appliances and products for households and businesses thereby increasing energy productivity.

Up until October 2012, the main policy tools used to achieve reductions in energy use from these products were mandatory **Minimum Energy Performance Standards** (MEPS) and **Energy Rating Labels** (ERLs) which were first developed and implemented in the 1990s and steadily upgraded and extended to a greater range of appliances and products. Since October 2012, Australia's **Greenhouse and Energy Minimum Standards** (GEMS) legislation has commenced under the Equipment Energy Efficiency (E3) program.[7] Under the new legislation, the Australian GEMS Regulator replaces state regulators in enforcing regulations and creates a national framework by replacing seven overlapping pieces of state legislation within the Equipment Energy Efficiency (E3) framework. This framework aims to provide enhanced monitoring, verification and enforcement and allows the scope of the previous energy efficiency improvement initiatives to be expanded.

While there have been improvements in energy efficiency of many residential buildings and household technologies over the last 40 years, many efficiency gains have been offset by preferences for larger houses, increased air conditioning use and market penetration of a greater variety of new appliances and electronics. Expansions of appliance and equipment energy use activities can potentially more than offset energy efficiency improvement gains.

The current appliance coverage for MEPS and Energy Rating labels is contained in Table 7.1.

Over the next few years the E3 program proposes to revise existing MEPS for the following appliance categories:

- refrigerators and freezers; and
- swimming pool pumps.

These appliances have been already been the subject of Regulatory Impact Statements, consultation periods and supplementary reporting and due diligence. They are in the final stages of proposed changes being approved, but there remain some uncertainties around implementation and timing. A number of other appliance groups are also under consideration for further work around MEPS. They include:

- LED lighting;
- solar hot water; and
- industrial products.

Table 7.1 Regulated products

Products	MEPS	Energy rating label
Air conditioners – single phase	Yes	Yes
Air conditioners – three phase	Yes	Yes (Voluntary)
Air Conditioners - Evaporative	No	No
Air Conditioners – Single Duct & Portable	Yes (from 1 April 2020)	Yes (from 1 April 2020)
Ballasts for Fluorescent Lamps	Yes	Other*
Battery Chargers	No	No
Close control air conditioners (computer rooms)	Yes	No
Clothes Dryers	Yes	Yes
Clothes Washing Machines	No	Yes
Commercial chillers	Yes	No
Compact Fluorescent Lamps	Yes	Other*
Computers	Yes	No
Computer Monitors	Yes	Yes
Data Centres	No	No
Dishwashers	No	Yes
Distribution Transformers	Yes	No
Electric motors (three phase)	Yes	Other*
Electric Storage Water Heaters	Yes	No
External Power Supplies	Yes	Other*
Fans - Non-Domestic	No	No
Gas Space Heaters	No	No

[7] E3 is a joint initiative of the Australian Commonwealth, State and Territory Governments and the New Zealand Government.

Table 7.1 Regulated products (continued)		
Products	**MEPS**	**Energy rating label**
Gas Storage Water Heaters	Yes	Labelled by industry group
Heat Pump Water Heaters	No	No
Incandescent Lamps	Yes	Other*
Instantaneous Electric Water Heaters	No	No
Instantaneous Gas Water Heaters	Yes	Labelled by industry group
Light Emitting Diodes	No	No
Linear Fluorescent Lamps	Yes	No
Refrigerated Display Cabinets	Yes	No
Refrigerated Cabinets	Yes	No
Refrigerated Cabinets	Yes	No
Refrigerators and freezers (Household Refrigerating Appliances)	Yes	Yes
Set Top Boxes	Yes	No
Solar Water Heaters	No	No
Street and Public Lighting	Yes (Voluntary)	No
Swimming Pool Pumps	No	Yes (Voluntary)
Televisions	Yes	Yes
Transformers & Converters for Halogens	Yes	Other*
Video Game Consoles	No	No

Note: * Whilst no Energy Rating Label is required, GEMS labelling requirements do apply. For more information see the relevant GEMS determination.

Source: Energy Rating (www.energyrating.gov.au/suppliers/registration/regulated-products).

7.2 Air conditioners and chillers

New regulations for air conditioners came into force during 2020 which expanded to cover portable air conditioners and coolers with a capacity of above 65 kW. E3 are also introduced Zoned Energy Rating Labels (ZERL) for air conditioners, which recognises that air conditioner performance differs between climates. The energy efficiency rating differs, for example, between the tropical climate in Cairns to the temperate climate in Melbourne.

In March 2018, E3 released the final determination for air conditioners and chillers *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019.* This represents the most significant change to efficiency standards for air conditioners since 2011, but will not have the same magnitude of impact of the aggressive schedule of MEPS improvement of the 2000s. Previously, air conditioners were regulated under *Greenhouse and Energy Minimum Standards (Air Conditioners and Heat Pumps) Determination 2013*. Changes commenced from 1 April 2020 for most classes of air conditioner.

Each GEMS determination for air conditioners contains a minimum Coefficient of Performance (COP) and Energy Efficiency Ratio (EER) that models sold into Australia are required to exceed. This removes the least efficient models from the market, and prevents dumping of cheap, inefficient models into Australia. Since 2011 there has not been any substantial change in MEPS to the main categories of air conditioner, rather newer GEMS determinations have sought to broaden the scope of MEPS into classes of air conditioners that have not been adequately covered in the past. These regulations have been introduced to lesser sold categories.

The GEMS 2019 Draft Determination includes a table of new MEPS levels that have been enforced since April 2020.

The most significantly direct changes the MEPS for air conditioners include:

- reclassifying and broadening 14 product classes into 22 product classes of air conditioner; and
- introducing MEPS for portable air conditioners.

The table below contains a comparison of the GEMS 2019 MEPS standards and the previous standards included in GEMS 2013.

7.2.1 Portable air conditioners

Portable air conditioners are not fixed to a structure, can be moved around from room to room, and have grown in popularity in recent years. Ducted portable air conditioners are the most popular type of portable air conditioner that is used in the residential sector.

Ducted portable air conditioners can either have a single duct configuration, or a double duct configuration. A single duct portable air conditioner is a unitary system that is placed within the conditioned space and has a single duct, usually temporarily attached to a window, which expels air to the outside. A double duct system is similar to a single duct system, but it has a second duct that draws in air from the outside.

A double duct configuration is considered more efficient than a single duct configuration. When a single duct portable air conditioner expels hot air from inside a conditioned room to outside the house, it creates a pressure within the conditioned room. The pressure draws in air from outside the room from other parts of the house that may not be conditioned. This is part of the reason why portable air conditioners have the perception of underperformance.

> "*Laboratory testing of 10 single duct portable air conditioners was undertaken by the E3 Program in early 2014 to inform development of the portables test standard. This testing found that both the cooling output and energy efficiency of these models was around 25 per cent below supplier claims. This does not take into account the additional performance and capacity reduction that occurs from air outside the conditioned space being drawn in to replace the air expelled through the single exhaust duct. This factor significantly limits the ability of these products to provide an effective air conditioning service*."
>
> **Consultation RIS – Air conditioners and chillers, E3 program**

Double duct air conditioners address the issue of drawing hot air into a room via a second duct. However, there are most portable air conditioner's that are sold within Australia have a single duct configuration.

Table 7.2 Minimum Energy Performance Standards for air conditioners – GEMS 2019 versus GEMS 2013							
Kind of product	**Product class**	**Characteristics**	**Value of R**			**MEPS 2019**	**MEPS 2013**
Air-to-air unitary air conditioners	1	Wall mounted unitary double duct air conditioners		R	<= 65kW	3.10	3.10
	2	Portable unitary double duct air conditioners		R	<= 65kW	2.50	new
	3	Unitary single duct air conditioners		R	<= 65kW	2.50	new
	4	Ducted or non-ducted, excluding product classes 1 to 3		R	< 10kW	3.10	3.10
	5	Ducted or non-ducted, excluding product classes 1 to 3		R	<=39kW	3.10	3.10
	6	Ducted or non-ducted, excluding product classes 1 to 3	39kW <	R	<=65kW	2.90	2.90
Air-to-air single-split systems	7	Non-ducted		R	< 4kW	3.66	3.66
	8	Non-ducted	4kW ≤	R	< 10kW	3.22	3.22
	9	Ducted		R	< 10kW	3.10	3.10
	10	Ducted or non-ducted	10kW ≤	R	<=39kW	3.10	3.10
	11	Ducted or non-ducted	39kW <	R	<=65kW	2.90	2.90
Air-to-air single-split outdoor units (not supplied or offered for supply as part of a single-split system)	12	Supplied or offered for supply to create a non-ducted system		R	< 4kW	3.66	3.66
	13	Supplied or offered for supply to create a non-ducted system	4kW ≤	R	< 10kW	3.22	3.22
	14	Supplied or offered for supply to create a ducted system		R	< 10kW	3.10	3.10
	15	Whether supplied or offered for supply to create a ducted or a non-ducted system	10kW ≤	R	<=39kW	3.10	3.10
	16	Whether supplied or offered for supply to create a ducted or a non-ducted system	39kW <	R	<=65kW	2.90	2.90
Air-to-air multi-split outdoor units (whether or not supplied or offered for supply as part of a multi-split system)	17			R	< 4kW	3.66	3.66
	18		4kW ≤	R	< 10kW	3.22	3.22
	19		10kW ≤	R	<=39kW	3.10	3.10
	20		39kW <	R	<=65kW	2.90	2.90
Water-to-air air conditioners	21			R	< 39kW	3.50	3.50
	22		39kW ≤	R	<=65kW	3.20	3.20

Source: NIEIR comparison of GEMS 2013 and GEMS 2018 (draft).

E3 plans on separating double duct air conditioners into a new product class, with a lowered MEPS level. This should allow double duct systems to be sold onto the Australian market. Double duct portable air conditioners are more efficient than single duct air conditioners. The lowering of the MEPS standards for double duct air conditioners will therefore lead to an improvement in the efficiency of new portable air conditioners sold onto the market. Single duct air conditioners will also have the same level of MEPS applied.

Efficiency improvements may be constrained by consumer preferences. The typical purchaser of portable air conditioners usually considers affordability, portability and not being able to install a fixed unit when deciding to purchase a portable unit. For these reasons, the average consumer of portable air conditioners is more likely to be renting rather than owning their home. Purchasers of portable air conditioners are also more likely to be from lower income households, as portable air conditioners have a lower upfront cost. Although energy efficiency is important when purchasing a new air conditioner, the relative importance of efficiency for these households may be less than those that are purchasing fixed units.

Further consumer research has also suggested that portable air conditioners are used less extensively than fixed air conditioners throughout the year. Consumers are more likely to use them when it is intensively hot, rather than use them for extended periods to maintain room temperature. [8]This behaviour suggests that any efficiency improvement in MEPS will have a larger impact on maximum demands, rather than annual energy consumption.

The penetration of portable air conditioners into Australian households is more difficult to determine than fixed air conditioners due to the lack of availability of sales data. The stock of air conditioners is also often presented in aggregate of portable and fixed units.

However, portable air conditioners are likely to have grown in prominence in recent years with an increasing proportion of households becoming renters.

A survey in 2018 by Canstar Blue suggests that 61 per cent of households own a portable air conditioner in addition to an installed air conditioner unit.[9] This suggests that they could also be used to complement existing fixed air conditioners, in spaces that are not adequately cooled, rather than being the main source of space cooling. However, the stock of portable air conditioners as estimated in the 2016 RIS is far less at only around 10 per cent of the total stock of Australian air conditioners installed, growing from a negligible stock in the mid-2000s.

7.2.2 Methodology for new portable air conditioner MEPS

The new MEPS standards came into effect from April 2020, which means that summer 2021 was the first summer season to be impacted by the new standards. As the introduction of these standards is so recent, a post-modelling adjustment is still necessary.

The new MEPS to apply to both single duct and double duct portable air conditioners is a MEPS value of 2.50 (COP or EER), which is set at a level below all other regulated product classes of air conditioners.

In order to determine the impact on the overall efficiency of new portable air conditioner sales, NIEIR completed a survey of portable air conditioners available for sale in major retailers in October, 2018. NIEIR collected data on cooling and heating capacity and inputs for 59 portable air conditioner units.

The survey of single duct portable air conditioner brands available for sale from major retailers is summarised in Figure 7.1. This includes each of the 59 models cooling efficiency as measured by the COP. The horizontal blue line is the proposed level of MEPS to be applied to portable air conditioners. Every model below this line will not be permitted for sale in Australia after the new MEPS come into place.

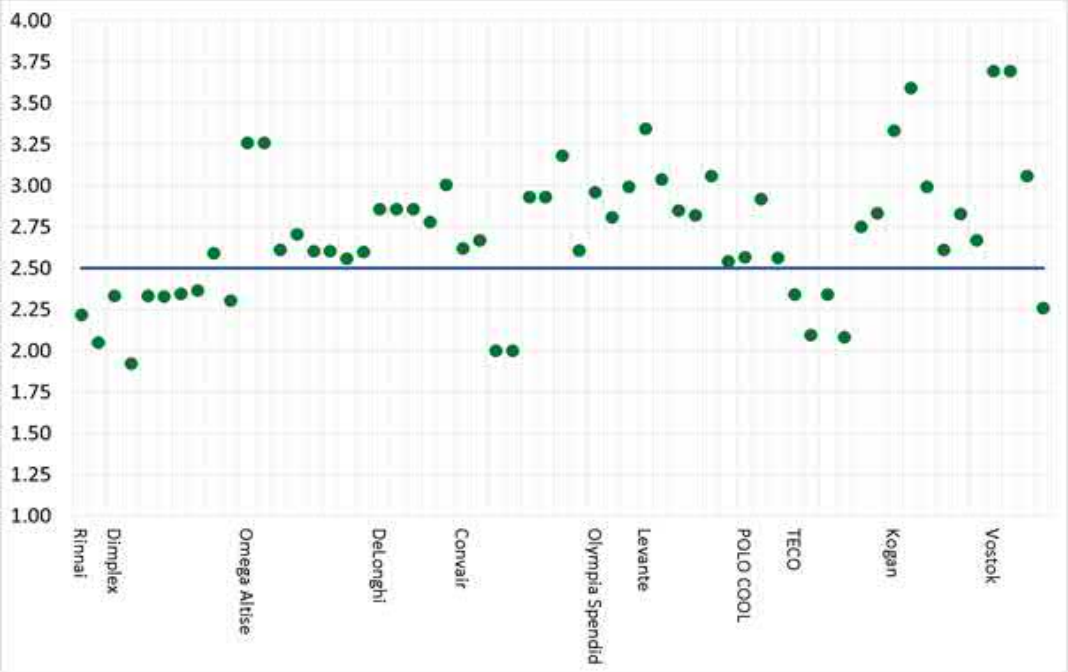
Of the units surveyed, 16 inefficient units (27.1 per cent) would be removed from the market due to being less efficient than the proposed new MEPS level of a coefficient of performance of 2.50. The removal of these units could lead to a 7 per cent increase in the average efficiency of units available for sale in Australia. If sales are currently more heavily weighted to cheaper, less efficient models then this improvement may be above 7 per cent. Alternatively, if sales are currently weighted towards more efficient models then the improvement will be below 7 per cent. In the absence of individual model sales, NIEIR have assumed an even weighting and efficiency improvement that will apply to new units post summer 2020.

Originally, a MEPS value of 2.60 was proposed. If a MEPS value of 2.60 was implemented this would have removed a further six models out of the survey that are currently available from major retailers. This would have led to an 11 per cent improvement in average COP of portable air conditioners available for sale in Australia.

[8] *Possible labelling of Portable Space Conditioners and Spot Coolers,* Winton Sustainable Research Strategies, 2009.

[9] https://www.canstarblue.com.au/appliances/portable-air-conditioners/.

Figure 7.1: Coefficient of performance of portable AC models



Source: NIEIR, survey of major retailers.

The post-modelling adjustment for portable air conditioners was estimated by comparing NIEIR business-as-usual forecasts for the New South Wales sale and stock of air conditioners to a forecast that includes the introduction of more stringent MEPS.

For maximum demand post-modelling adjustments:

- the impact at summer maximum demand is the difference between the business-as-usual and MEPS impacted forecast of the stock of portable air conditioner input capacity (kW);
- a stock utilisation rate of 80 per cent of primary use portable air conditioners are assumed to be running at the system peak. This is a similar rate as to what can be expected from standard air conditioners at the system peak; and
- MEPS impacts on winter maximum demand are assumed to have a negligible impact. Most models on the market are cooling-only in function.

For annual energy consumption:

- the impact on annual energy consumption is the difference between forecast business-as-usual and MEPS impacted input capacity (kW) of portable air conditioners, multiplied by the annual running hours; and
- annual running hours are based on a less intensive use than fixed air conditioners. Annual running hours are based on the number of hot days within the year (increasing trend), multiplied by an average run time of 4 hours. (Around 600 hours in 2021)

7.2.3 Region and industry group

The New South Wales state forecasts were mapped down into the Endeavour region by comparing the total temperature sensitive load within Endeavour as a proportion of total temperature sensitive load in New South Wales. This was determined through NIEIR's PeakSim model. Endeavour accounts for close to 40 per cent of New South Wales temperature sensitive load.

The network total impacts were also mapped down into three planning regions (Western Sydney, Illawarra and Shoalhaven, and Blue Mountains and Southern Highlands). These were weighted by total residential customers within each region, as portable air conditioners are largely within the residential sector.

Post-modelling adjustments were also mapped into residential, commercial and industrial sectors. It is assumed portables will be ineffective in the industrial sector, but there may be a small proportion cooling small offices. Most are assumed to be within the residential sector.

7.2.4 Daily profiles

Endeavour have also requested that maximum demand impacts for MEPS are provided as a profile on peak day. Electricity demand can vary significantly with movements in temperature. If the temperature increases, then typically electricity demand will increase as more people switch on their air conditioners. Air conditioners can also less efficient at cooling at higher temperatures.

Endeavour have provided NIEIR with total native network demand on a half-hourly basis (2008 to 2021).

To allocate summer maximum demand impacts NIEIR have used the PeakSim model to generate a half-hourly profile of a typical summer peak day. The PeakSim model is a regression based simulation model that estimates temperature sensitive load (and base load) for each half hourly interval within each summer. Each summer has an output of 48 temperature sensitivity coefficients.

Temperature sensitive load was estimate on peak day temperature conditions from 2008 to 2021 (excluding 2016). As can be seen from Figure 7.2, the profile of temperature sensitive load across the day has remained relatively stable over the past 10 years. Temperature sensitive load was then converted to an index where 4:30 pm = 1.

The average indexed temperature sensitive load profile from 2017 to 2021 was used to allocate the post modelling adjustment across the day, for each forecast series.

7.2.5 Energy and maximum demand impacts

The estimated impacts to the Endeavour network by planning region are shown in the below tables, as well as the grand total for the Endeavour total network. In 2020, it is expected that Endeavour will have a peak reduction of 1.23 MW as a result of new MEPS on portable air conditioners. This grows out to an impact of 4.30 MW by 2028. These are relatively small, but non-zero impacts for the Endeavour total system peak.

Figure 7.2: Endeavour summer temperature sensitive coefficient (Index 5:00 pm = 1)

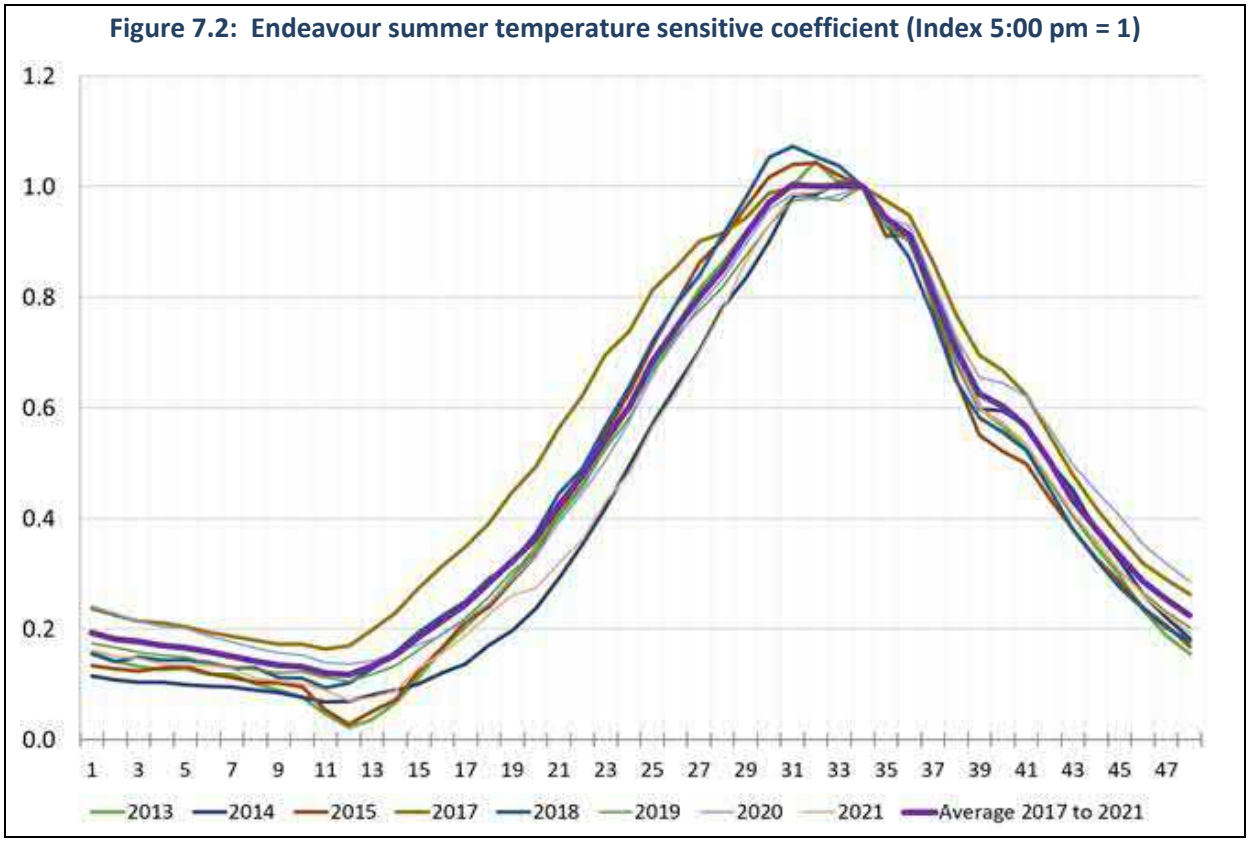


Table 7.3 Portable air conditioners – annual energy – Northern and Central regions (MW)								
	Northern				Central			
	Residential	Commercial	Industrial	Sub-total	Residential	Commercial	Industrial	Sub-total
2022	0.39	0.04	0.00	0.43	0.26	0.03	0.00	0.29
2023	0.39	0.04	0.00	0.44	0.26	0.03	0.00	0.30
2024	0.42	0.04	0.00	0.47	0.28	0.03	0.00	0.32
2025	0.47	0.05	0.00	0.52	0.32	0.04	0.00	0.35
2026	0.54	0.06	0.00	0.59	0.36	0.04	0.00	0.40
2027	0.62	0.06	0.00	0.68	0.42	0.05	0.00	0.46
2028	0.72	0.08	0.00	0.79	0.48	0.06	0.00	0.54
2029	0.83	0.09	0.00	0.92	0.56	0.07	0.00	0.62
2030	0.96	0.10	0.00	1.06	0.64	0.08	0.00	0.72
2031	1.10	0.12	0.00	1.21	0.74	0.09	0.00	0.82
2032	1.25	0.13	0.00	1.38	0.84	0.10	0.00	0.94

Table 7.4 Portable air conditioners – annual energy – Southern and Total regions (GWh)								
	Southern				Total			
	Residential	Commercial	Industrial	Sub-total	Residential	Commercial	Industrial	Sub-total
2022	0.17	0.02	0.00	0.18	0.81	0.09	0.00	0.90
2023	0.17	0.02	0.00	0.19	0.83	0.09	0.00	0.92
2024	0.18	0.02	0.00	0.20	0.89	0.10	0.00	0.99
2025	0.20	0.02	0.00	0.22	0.99	0.11	0.00	1.10
2026	0.23	0.03	0.00	0.26	1.13	0.13	0.00	1.25
2027	0.27	0.03	0.00	0.30	1.30	0.14	0.00	1.44
2028	0.31	0.04	0.00	0.34	1.51	0.17	0.00	1.67
2029	0.36	0.04	0.00	0.40	1.74	0.19	0.00	1.94
2030	0.41	0.05	0.00	0.46	2.01	0.22	0.00	2.24
2031	0.47	0.05	0.00	0.53	2.31	0.26	0.00	2.56
2032	0.54	0.06	0.00	0.60	2.63	0.29	0.00	2.92

Table 7.5 Portable air conditioners – summer maximum demand – Northern and Central regions (MW)								
	Northern				Central			
	Residential	Commercial	Industrial	Sub-total	Residential	Commercial	Industrial	Sub-total
2022	0.29	0.03	0.00	0.32	0.20	0.02	0.00	0.22
2023	0.29	0.03	0.00	0.33	0.20	0.02	0.00	0.22
2024	0.31	0.03	0.00	0.35	0.21	0.02	0.00	0.24
2025	0.35	0.04	0.00	0.38	0.23	0.03	0.00	0.26
2026	0.39	0.04	0.00	0.43	0.26	0.03	0.00	0.29
2027	0.45	0.05	0.00	0.50	0.30	0.04	0.00	0.34
2028	0.52	0.05	0.00	0.57	0.35	0.04	0.00	0.39
2029	0.59	0.06	0.00	0.66	0.40	0.05	0.00	0.45
2030	0.68	0.07	0.00	0.75	0.46	0.05	0.00	0.51
2031	0.77	0.08	0.00	0.86	0.52	0.06	0.00	0.58
2032	0.88	0.09	0.00	0.97	0.59	0.07	0.00	0.66

Note: Impacts shown for 5:00 PM on peak day.

Table 7.6	Portable air conditioners – summer maximum demand – Southern and Total Endeavour Energy regions (MW)							
	Southern				Total Endeavour			
	Residential	Commercial	Industrial	Sub-Total	Residential	Commercial	Industrial	Grand-Total
2022	0.13	0.01	0.00	0.14	0.61	0.07	0.00	0.68
2023	0.13	0.01	0.00	0.14	0.62	0.07	0.00	0.69
2024	0.13	0.02	0.00	0.15	0.66	0.07	0.00	0.73
2025	0.15	0.02	0.00	0.17	0.73	0.08	0.00	0.81
2026	0.17	0.02	0.00	0.19	0.82	0.09	0.00	0.91
2027	0.19	0.02	0.00	0.21	0.94	0.10	0.00	1.05
2028	0.22	0.03	0.00	0.25	1.09	0.12	0.00	1.21
2029	0.25	0.03	0.00	0.28	1.25	0.14	0.00	1.39
2030	0.29	0.03	0.00	0.33	1.43	0.16	0.00	1.59
2031	0.33	0.04	0.00	0.37	1.63	0.18	0.00	1.81
2032	0.38	0.04	0.00	0.42	1.84	0.20	0.00	2.04

Note: Impacts shown for 5:00 PM on peak day.

7.3 Seasonal Energy Efficiency Ratios and Zoned Energy Rating Labels

The Seasonal Energy Efficiency Ratio (SEER) is a measure of efficiency that takes climate into account when performance of the air conditioner is tested and measured. The SEER rating is displayed on Zoned Energy Rating Labels.

The text box below outlines how the SEER rating applies to air conditioners in the latest GEMS determination for air conditioners. Efficiency is rated within three distinct climate zones for cooling and heating performance – hot, average and cold. This recognises that the same model air conditioner performs different in practice in tropical Cairns when compared to temperate Melbourne.

Previously, the Coefficient of Performance (COP) and Energy Efficiency Ratio (EER) are given as a single measure for all climates. These compare the output energy (heating, or cooling) to the input energy (electricity). For example, a coefficient of performance of 3.5 implies that for every 1 unit of electricity consumed, the air conditioner is able to output 3.5 units of cooling capacity in summer. Modern air conditioner output is able to exceed the electrical input because of heat pump technology. This allows the system to also draw additional heat energy from its surroundings.

Efficiency standards for COP and EER have been used in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019* of the latest GEMS standard for air conditioners. So, it would seem that a regulated SEER is outside the scope of the current draft determination. According to the RIS, these changes would have led to a significant proportion of energy savings for air conditioners. However, as it does not seem likely that SEER based standards will be implemented over the short to medium term, but are instead only implemented on ZERL.

The ZERL allows a households to purchase a more appropriate air conditioner for their climate zone. Overall, a better suited system will operate more efficiently than one that is less suited to the climate. This will improve the efficiency of new stock installed in Australian households over the coming years.

Box 7.1: The meaning of SEER rating

34 Meaning of *SEER rating*

In this Division:

commercial SEER rating means a SEER rating calculated:

(a) using the commercial-based temperature bins set out in section 1 of Schedule 5; and

(b) according to subclause 6.2 of AS/NZS 3823.4.1:2014 and AS/NZS 3823.4.2:2014, using the t_0 and t_{100} values set out in section 2 of Schedule 5 for the purposes of Formula 2.

residential SEER rating means a SEER rating calculated in accordance with Part 4.

SEER rating (short for Seasonal Energy Efficiency Ratio rating) means any of the following:

(a) the Total Cooling Seasonal Performance Factor (TCSPF);

(b) the Heating Seasonal Performance Factor (HSPF);

(c) the Cooling Season Total Energy Consumption;

(d) the Heating Season Total Energy Consumption.

Note: For each SEER rating, there will be 6 values, one for each temperature zone (hot, average and cold) relating to residential use of the product, and one value for each temperature zone relating to commercial use of the product.

Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2018 – Exposure draft (22 March 2018), page 26-27

Figure 7.3: Example of old Energy Rating Label compared to the Zoned Energy Rating Label

Source: energyrating.gov.au.

7.4 Refrigerators and freezers

Refrigerators are a common place appliance in Australian households that are used to keep food and drink at a cool consistent temperature. Freezers are also common, but have a lower penetration in Australian households. Freezers are used to keep food and other items frozen. Refrigerators and freezers can be separate, or there are refrigerator-freezer combination appliances.

Refrigerators and freezers represent a substantial amount of annual energy consumption in the residential sector. Primary refrigerators and freezers are run continuously throughout the year. A typical household may use around 10 per cent of their annual electricity consumption on powering their refrigerator or freezer.

Refrigerator and freezers have been subject to MEPS since 1999 and have been required to carry an energy label since 1986. MEPS are expressed as a maximum annual energy consumption that a model refrigerator or freezer may have. The MEPS cut-off level is calculated through a formula that contains regulated fixed and variable parameters, and takes into account refrigerator size. MEPS work by eliminating the most heavy energy consuming refrigerators from the market.

Table 7.7 contains each of the refrigerator and freezer product groups that are regulated by MEPS.

Table 7.7 Product classes covered by refrigerator and freezer MEPS

Group	Configuration
1	Refrigerator without a low temperature compartment[10], automatic defrost
2	Refrigerator with or without an ice making compartment, manual defrost (bar refrigerators)
3	Refrigerator with or without an ice making compartment, includes a short-term frozen food compartment, manual defrost
4	Refrigerator-freezer, fresh food compartment is cyclic defrost, freezer is manual defrost
5B	Refrigerator-freezer, both compartments automatic defrost, bottom mounted freezer
5S	Refrigerator-freezer, both compartments automatic defrost, side by side
5T	Refrigerator-freezer, both compartments automatic defrost, top mounted freezer
6C	Chest freezer, all defrost types
6U	Vertical freezer, manual defrost
7	Vertical freezer, automatic defrost

Source: AS/NZS4474.1:2007, Table 1.1.

[10] A 'compartment' which means a storage area with a separate external door or an internal sub-compartment.

E3 released *Decision Regulation Impact Statement – Household Refrigerators and Freezers* in November 2017 which is the end result of a series of consultations on improving MEPS for refrigerators and freezers. This follows on from the *Consultation Regulation Impact Statement – Household Refrigerators and Freezers* that was released 6 months prior to the decision RIS. The content of each is relatively similar, but the Decision RIS incorporates feedback from submissions.

New MEPS will to come into force from August 2021 for refrigerators and freezers. They were originally proposed to be in place by the end of 2019.

It is also proposed that refrigerators and freezers will be tested under international standards, rather than Australian and New Zealand standards. This will lower compliance costs for manufacturers.

The following table has been sourced from the Decisions RIS. It shows relative international MEPS levels for refrigerators and freezers. The MEPS levels are the maximum annual energy consumption per broad class of refrigerator. With the exception of India and China, Australia lags behind most of the world.

Table 7.8 Estimated converted (standardised) MEPS levels (kWh/annum)

Country/Region	Appliance			
	Small refrigerator	Small refrigerator-freezer	Medium refrigerator-freezer	Chest freezer
EU	183	258	370	211
US	224	294	360	329
Mexico	298	408	499	346
Australia/ New Zealand	**315**	**448**	**540**	**384**
China	332	394	575	404
India	-	522	628	-

Notes: The standardised MEPS values in this table specify the maximum allowable power consumptions per annum that broad categories of refrigerators and freezers must not exceed for them to be allowed to be offered for supply in indicated markets. The lower the number, the less energy used by the appliance.

CLASP notes the above converted levels, taking into account differences in test methods, are based on estimates and that actual figures are likely to be within 25 per cent of the indicated values.

Source: CLASP (2014) *Improving Global Comparability of Appliance Energy Efficiency Standards and Labels.*

7.4.1 Market

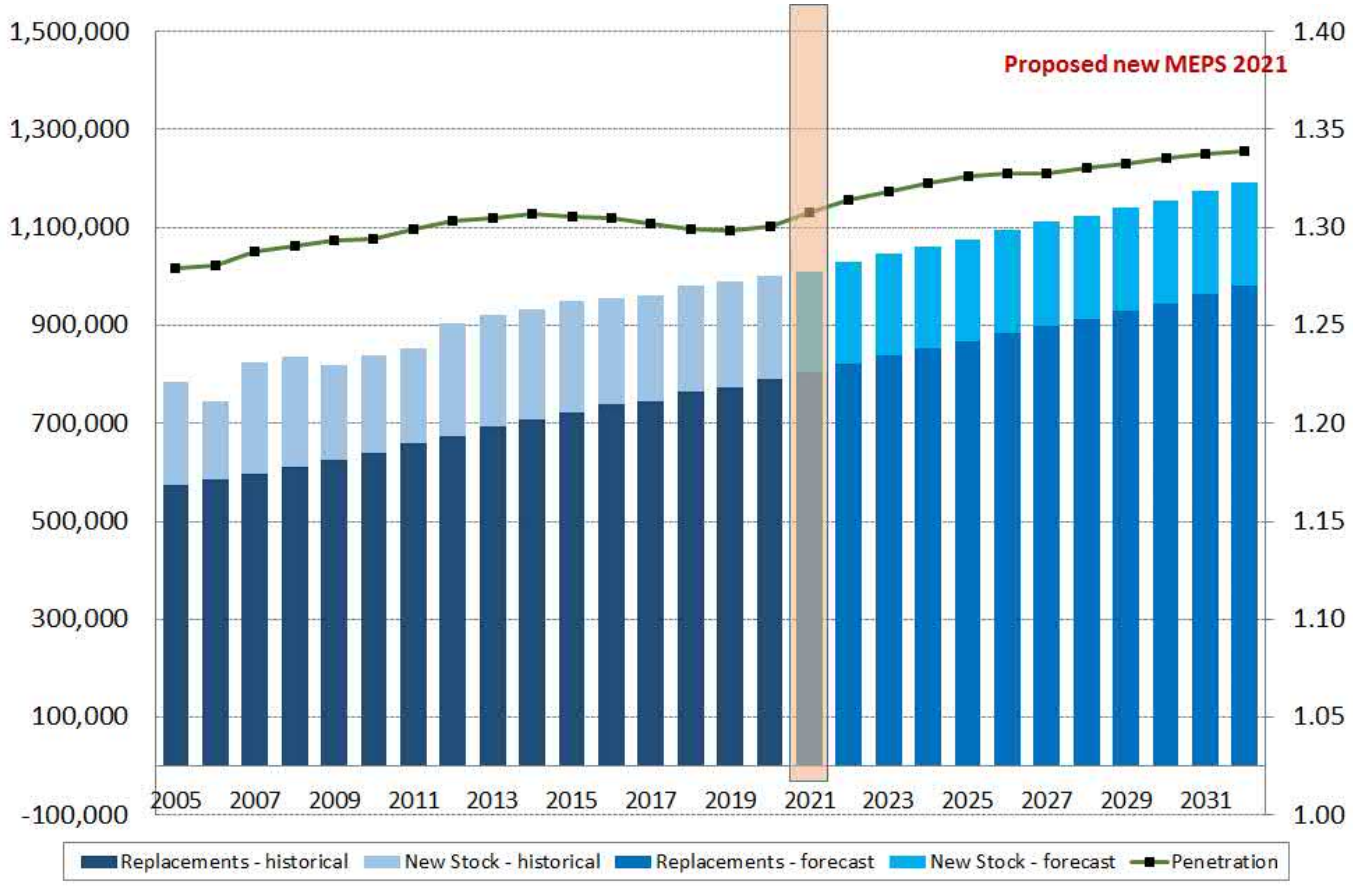
Refrigerators are a common appliance and most Australian households will own at least one refrigerator. NIEIR estimates that the Australian household penetration of refrigerators is around 1.3, which implies that many households own multiple refrigerators.

In order to estimate the impact of new MEPS, NIEIR has forecast the annual sales of refrigerators within Australia. Historical and forecast sales are broken up into replacement refrigerators and new stock of refrigerators (e.g. new dwellings or second fridge). The replacement market is forecast based on an attrition rate of stock, while the new stock market is mainly driven by new dwellings forecasts.

Standalone freezers have been selling at a consistent level over the past 15 years at just below 200,000 units per annum. This coincides with a period of declining freezer ownership within Australian households. NIEIR expects that the penetration of freezers will continue to decline as the apartments and denser urban living continue to increase as a proportion of overall dwelling stock. Freezer ownership has also been declining as refrigerator/freezer combination appliances become more popular.

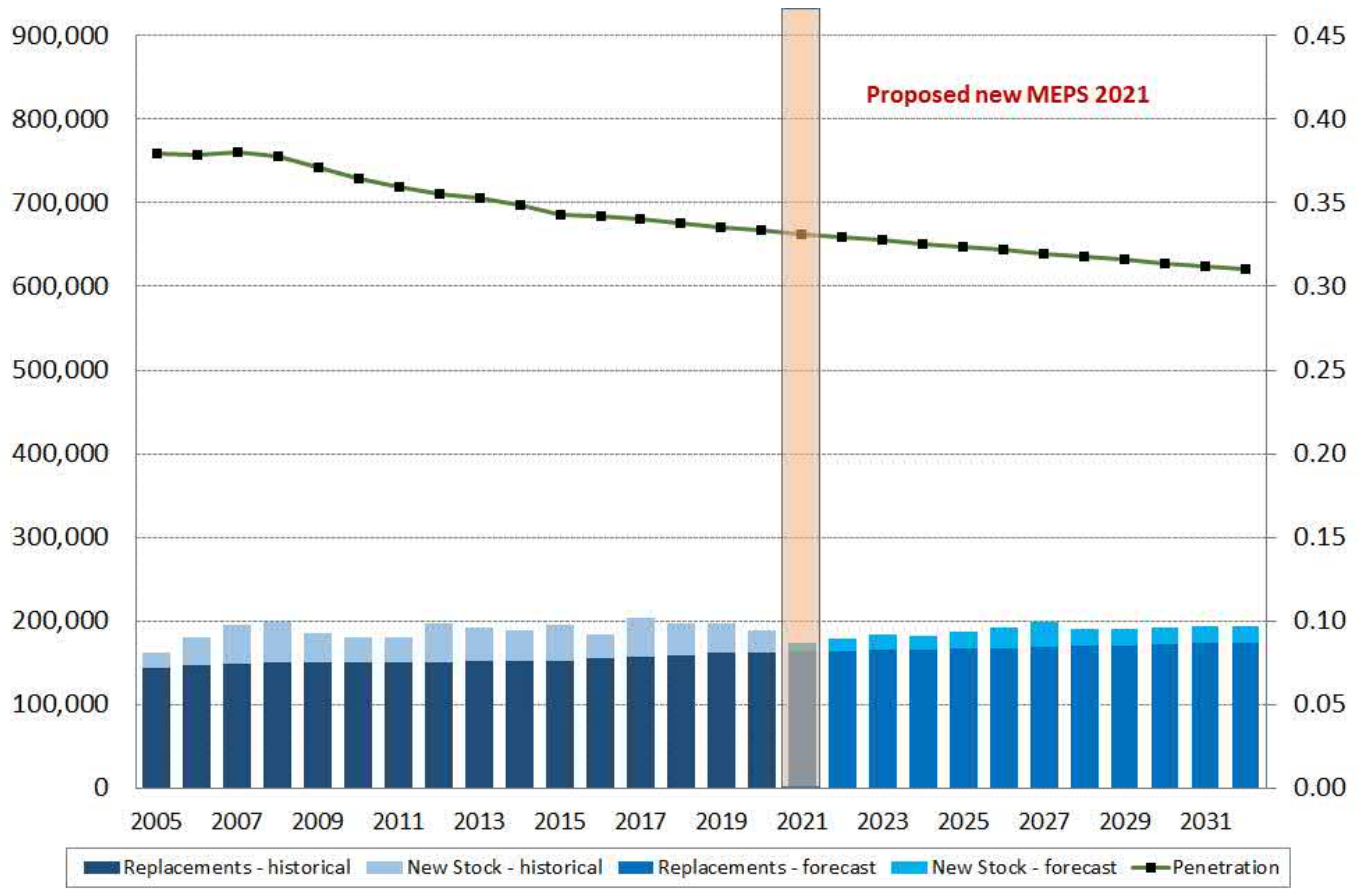
Sales growth in refrigerators and freezers will be somewhat dampened by a period of declining dwelling investment and lower population growth over the next five years.

Figure 7.4: Australian refrigerator sales and dwelling penetration



Source: Historical total sales from E3, segmentation and forecasts from NIEIR.

Figure 7.5: Australian freezer sales and dwelling penetration



Source: Historical total sales from E3, segmentation and forecasts from NIEIR.

7.4.2 MEPS impact

Figure 7.6 contains a summary of the models of refrigerator and freezers on the market in Australia in 2018. MEPS for each individual model of Refrigerator and Freezer are estimated by formula that is contained in the standards. For comparison purposes, each MEPS3 cut-off level for each refrigerator and freezer has been indexed to 100. The ratio of the model's annual energy to their proposed MEPS3 level has been calculated to determine whether the current models will meet the new MEPS3 level in the future (taking into account nominal energy efficiency gains over the next three years).

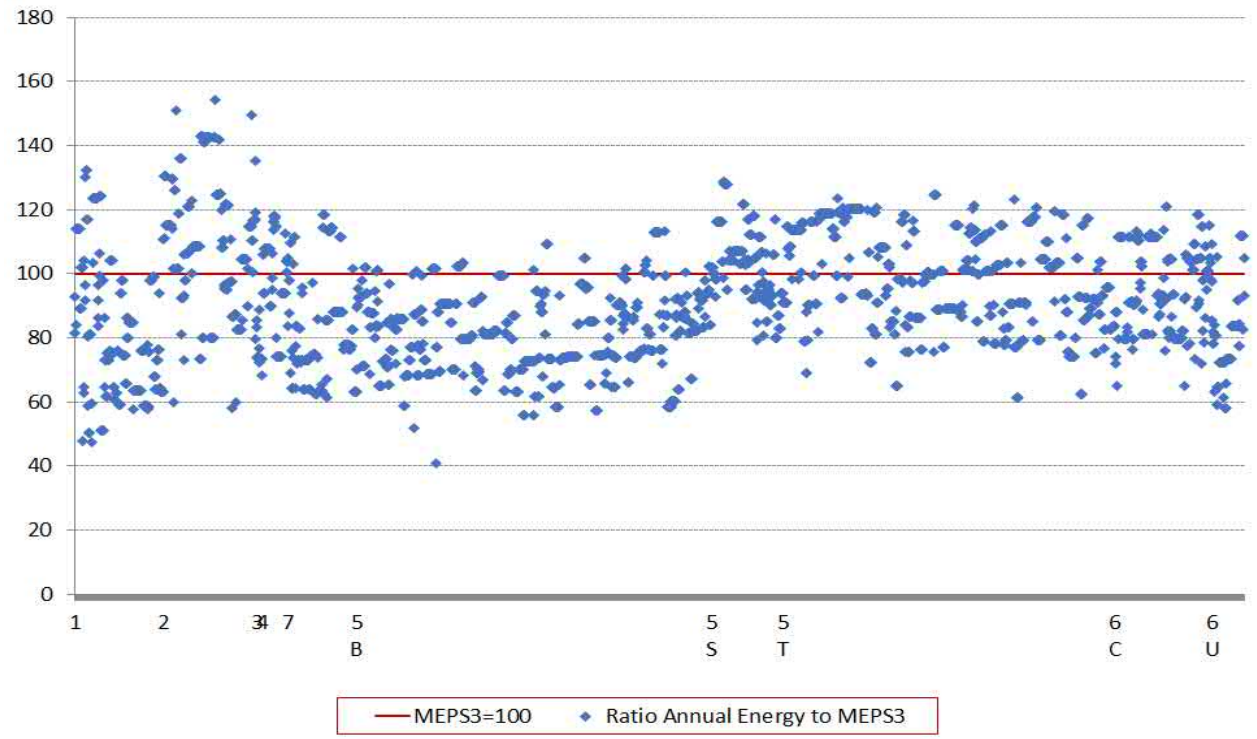
Across all current models, around 72 per cent of will meet the MEPS3 level in 2021. Conversely, 28 per cent of current models will not meet MEPS3 in the current configuration.

The most efficient product class are refrigerators with bottom mount freezers that have an automatic defrost feature (5B). These make up the greatest number of models available on the market with around 37 per cent share, and only a small amount of them will not meet the MEPS3 threshold. This may limit the total impact of MEPS3 for new refrigerators and freezers. However, Top mounted refrigerator/freezers also represent a significant amount of the market at 34.2 per cent. Around 40 per cent of top mounted freezers on the market today will not meet MEPS3.

One of the most common configurations of refrigerator are those that include a bottom mounted freezer. This type of appliance is already highly efficient and 97 per cent of the products within this class will already meet a MEPS3 standard by 2021. MEPS3 is unlikely to directly have much of an impact on reducing annual energy consumption or maximum demands for this class of product. But there may be indirect benefits as people substitute away from less efficient configurations toward more efficient bottom mounted refrigerator/freezers. As MEPS are more likely to remove cheaper products from the market, this will make the bottom mounted refrigerator more appealing.

A summary of the product model analysis is contained in Table 7.9. It shows the market model mix, including each product group's compliance to MEPS.

Figure 7.6: Australian refrigerator and freezer model performance 2021 (MEPS3 = 100)



Note: Models that have a ratio of above 100 consume more annual energy than the proposed MEPS3 level and will be dropped from the market.

Source: NIEIR, based on E3 data.

Table 7.9 Refrigerator and freezer models on market

Type	Group	Models (current) no.	Models (Meet MEPS3) – 2021 no.	Models (Meet MEPS3) – 2021 %	Market Weight %
Refrigerator	1	215	179	83.3	9.2
	2	224	77	34.4	9.5
	3	14	14	100.0	6
Refrigerator/ Freezer	4	62	34	54.8	2.6
	5B	857	832	97.1	36.5
	5S	173	72	41.6	7.4
	5T	803	483	60.1	34.2
Total		**2,348**	**1,691**	**72.0**	**100**
Freezer	6C	235	141	60.0	49.1
	6U	78	68	87.2	16.3
	7	166	141	84.9	34.7
Total		**479**	**350**	**73.1**	**100**

Table 7.10 shows the average annual energy consumption per unit within each class of refrigerator and freezer for the business as usual case. This scenario does not introduce MEPS, but only follows ordinary efficiency improvement.

Table 7.11 shows the corresponding forecasts of average unit energy consumption per class that are impacted by MEPS3 by 2021. This is determined by removing the inefficient models off of the market and recalculation average consumption per class (taking into account general efficiency improvement). As expected, the implementation of MEPS3 reduces the average energy consumption of the stock of models that are available on the market.

Table 7.10 Refrigerators and freezers business-as-usual – average annual energy consumption (kWh) per unit										
	Refrigerator			Refrigerator/Freezer				Freezer		
Year	1	2	3	4	5B	5S	5T	6C	6U	7
Business as usual (No MEPS3)										
2020	242	227	253	297	435	603	384	345	245	409
2021	240	225	250	294	431	597	380	341	243	405
2022	237	223	248	291	426	591	377	338	240	401
2023	235	220	245	288	422	585	373	334	238	397
2024	232	218	243	286	418	579	369	331	236	393
2025	230	216	240	283	414	574	365	328	233	389
2026	228	214	238	280	410	568	362	324	231	385
2027	225	212	235	277	405	562	358	321	229	382
2028	223	210	233	274	401	557	355	318	226	378
2029	221	208	231	272	397	551	351	315	224	374
2030	219	205	228	269	393	545	348	312	222	370
2031	217	203	226	266	389	540	344	309	220	367
2032	214	201	224	264	386	535	341	305	217	363

Table 7.11 Refrigerators and freezers MEPS3 – average annual energy consumption (kWh) per unit										
	Refrigerator			Refrigerator/Freezer				Freezer		
Year	1	2	3	4	5B	5S	5T	6C	6U	7
MEPS3										
2020	242	227	253	297	435	603	384	345	245	409
2021	240	225	250	294	431	597	380	341	243	405
2022	227	185	250	267	425	555	353	304	227	379
2023	225	183	248	264	421	550	349	301	225	375
2024	223	181	245	261	416	544	346	298	223	372
2025	220	179	243	259	412	539	342	295	221	368
2026	218	177	240	256	408	533	339	292	218	364
2027	216	176	238	254	404	528	336	289	216	361
2028	214	174	235	251	400	523	332	286	214	357
2029	212	172	233	249	396	518	329	283	212	354
2030	210	170	231	246	392	512	326	280	210	350
2031	207	169	228	244	388	507	322	278	208	346
2032	205	167	226	241	384	502	319	275	206	343

The following tables contain the annual energy consumption post-modelling adjustments for New South Wales, Endeavour and the three major planning regions. The new MEPS for refrigerators are targeted at domestic refrigerators, rather than commercial refrigerators. Although there may be a small amount in commercial offices that have a residential style refrigerator, this is assumed to be negligible compared to the residential market. Therefore, the following total adjustments are also equal to the residential sector adjustments, while commercial and industrial are zero.

The impacts are estimated by using the forecast sales of refrigerators and freezers, and adjusting the average unit efficiency for the impact of MEPS (weighted by product group). New South Wales and Endeavour regions are weighted from the Australian total by the dwelling share. The Endeavour planning regions are weighted by domestic customers within each region.

Table 7.12	New South Wales and Endeavour Energy post-modelling adjustment – Annual energy consumption (GWh)					
	NSW			Endeavour		
	Refrigerator	Freezer	Total	Refrigerator	Freezer	Total
2021	0.7	0.2	0.9	0.2	0.1	0.3
2022	5.4	1.5	6.9	2.0	0.6	2.5
2023	10.8	3.0	13.8	4.0	1.1	5.1
2024	16.1	4.5	20.5	5.9	1.7	7.6
2025	21.6	6.0	27.6	8.0	2.2	10.2
2026	27.1	7.5	34.6	10.0	2.8	12.8
2027	32.6	9.1	41.7	12.0	3.4	15.4
2028	38.0	10.6	48.6	14.1	3.9	18.0
2029	43.6	12.1	55.7	16.1	4.5	20.6
2030	49.1	13.6	62.7	18.2	5.0	23.2
2031	54.7	15.0	69.8	20.2	5.6	25.8
2032	60.3	16.5	76.8	22.3	6.1	28.4

Table 7.13	New South Wales and Endeavour Energy post-modelling adjustment – Summer maximum demand (MW)					
	NSW			Endeavour		
	Refrigerator	Freezer	Total	Refrigerator	Freezer	Total
2022	0.7	0.2	0.9	0.3	0.1	0.3
2023	1.4	0.4	1.8	0.5	0.1	0.7
2024	2.1	0.6	2.6	0.8	0.2	1.0
2025	2.8	0.8	3.5	1.0	0.3	1.3
2026	3.5	1.0	4.4	1.3	0.4	1.6
2027	4.2	1.2	5.3	1.5	0.4	2.0
2028	4.9	1.4	6.2	1.8	0.5	2.3
2029	5.6	1.6	7.1	2.1	0.6	2.6
2030	6.3	1.7	8.0	2.3	0.6	3.0
2031	7.0	1.9	8.9	2.6	0.7	3.3
2032	7.7	2.1	9.8	2.9	0.8	3.6

Table 7.14	New South Wales and Endeavour Energy post-modelling adjustment – Winter maximum demand (MW)					
	NSW			Endeavour		
	Refrigerator	Freezer	Total	Refrigerator	Freezer	Total
2022	0.5	0.2	0.7	0.2	0.1	0.3
2023	1.1	0.3	1.4	0.4	0.1	0.5
2024	1.6	0.4	2.1	0.6	0.2	0.8
2025	2.2	0.6	2.8	0.8	0.2	1.0
2026	2.7	0.8	3.5	1.0	0.3	1.3
2027	3.3	0.9	4.2	1.2	0.3	1.6
2028	3.8	1.1	4.9	1.4	0.4	1.8
2029	4.4	1.2	5.6	1.6	0.5	2.1
2030	5.0	1.4	6.3	1.8	0.5	2.3
2031	5.5	1.5	7.0	2.0	0.6	2.6
2032	6.1	1.7	7.7	2.2	0.6	2.9

Table 7.15 Total refrigerator and freezer MEPS impact – Annual energy (GWh)				
	Endeavour	Western Sydney	Blue Mountains and Southern Highlands	Illawarra and Shoalhaven
2021	0.4	0.2	0.1	0.1
2022	2.5	1.2	0.8	0.5
2023	5.1	2.4	1.6	1.0
2024	7.6	3.6	2.4	1.6
2025	10.2	4.9	3.3	2.1
2026	12.8	6.1	4.1	2.6
2027	15.4	7.3	4.9	3.1
2028	18.0	8.6	5.8	3.7
2029	20.6	9.8	6.6	4.2
2030	23.2	11.0	7.4	4.7
2031	25.8	12.3	8.2	5.3
2032	28.4	13.5	9.1	5.8

Table 7.16 Total refrigerator and freezer MEPS impact – Summer maximum demand (MW)				
	Endeavour	Western Sydney	Blue Mountains and Southern Highlands	Illawarra and Shoalhaven
2022	0.3	0.2	0.1	0.1
2023	0.7	0.3	0.2	0.1
2024	1.0	0.5	0.3	0.2
2025	1.3	0.6	0.4	0.3
2026	1.6	0.8	0.5	0.3
2027	2.0	0.9	0.6	0.4
2028	2.3	1.1	0.7	0.5
2029	2.6	1.3	0.8	0.5
2030	3.0	1.4	1.0	0.6
2031	3.3	1.6	1.1	0.7
2032	3.6	1.7	1.2	0.7

Table 7.17 Total refrigerator and freezer MEPS impact – Winter maximum demand (MW)				
	Endeavour	Western Sydney	Blue Mountains and Southern Highlands	Illawarra and Shoalhaven
2018	0.3	0.1	0.1	0.1
2019	0.5	0.2	0.2	0.1
2020	0.8	0.4	0.2	0.2
2021	1.0	0.5	0.3	0.2
2022	1.3	0.6	0.4	0.3
2023	1.6	0.7	0.5	0.3
2024	1.8	0.9	0.6	0.4
2025	2.1	1.0	0.7	0.4
2026	2.3	1.1	0.7	0.5
2027	2.6	1.2	0.8	0.5
2028	2.9	1.4	0.9	0.6

7.4.3 Time of day

Refrigerators and freezers are run on a continuous basis to maintain a temperature set by the units' thermostat. If a refrigerator is plugged in and not actively used, it will cycle between cooling the internal compartments and idling when it meets the temperature. When a refrigerator is in use there will be periods of higher demand as doors are opened, defrost technology is used or ice makers are used.[11]

While these intra-daily effects will influence demand by time of day, they will be less apparent on the total stock of refrigerators and freezers within a region. NIEIR have therefore assumed a constant load profile for time of day for refrigerators and freezers equal to the annual demand impacts (MW).

[11] For example, Pipattanasomporn et al (2014), *Load Profiles of Selected Major Household Appliances and Their Demand Response Opportunities,* IEEE TRANSACTIONS ON SMART GRID, VOL. 5, NO. 2, MARCH 2014.

7.5 Lighting

Energy efficiency is based on a minimum light produced per watt of electricity. This for example allows for the installation of Compact Fluorescent Lights (CFLs), Light Emitting Diodes (LEDs) and can include more efficient halogen downlights.

Since 2000 compact fluorescent lamps (CFLs) have been penetrating Australian residential lighting markets and fluorescent fittings of higher energy efficiency have been penetrating business (commercial, industrial) markets. This lighting energy efficiency improvement has accelerated since 2006. In 2010 imports of most incandescent lamps were banned (some speciality incandescent, <40W, were exempt) and higher efficiency lamps (CFLs, later LEDs) were subsidised in New South Wales (from 2006), Victoria and South Australia from 2009 under "white certificate" programs. New energy efficient lighting continues to improve in price, making it an attractive low cost option for energy savings.

Table 7.18 contains a summary of the schedule of lighting sales restrictions in place since 2009. The *LED lighting Product Profile* also contains a proposed schedule over 2017 to 2018 to phase-out more types of incandescent/halogen lamps. The phase-out of halogen has been proposed for many years, but adequate substitute technology (LEDs) and replacement cost have limited any push for implementation. As of 2021, the phase out has still yet to commence. E3 proposes to introduce MEPS for LEDs that address some of the quality issues.

Table 7.18 Phase-out of inefficient lighting in Australia

Lamp type	Sales restriction from
Tungsten filament incandescent general lighting service (GLS) light bulbs. Extra low voltage (ELV) halogen non-reflector lamps. Self-ballasted compact fluorescent lamps (CFLs).	1 November 2009
Greater than 40W candle, fancy round and decorative lamps. ELV halogen reflector lamps (the average measured wattage shall be no more than 37W – effective 14 April 2012).	1 October 2010
Mains voltage halogen (MVH) non-reflector lamps (until 30 September 2016, when tested in accordance with AS/NZS 4934.1, MVH non-reflector lamps may comply with a reduced initial efficacy requirement).	1 January 2011
Greater than 25W candle fancy round and decorative lamps.	1 October 2012

Source: energyrating.gov.au.

Table 7.19 shows the improvement in input (W) across technologies given a fixed level of lighting output (lumens).

Table 7.19 Comparison of lighting technologies

Output (lumens)	Power (watts)			
	Incan-descent	Mains Voltage Halogen	CFL	LED
250	25	18	4 – 6	3 – 4
500	40	28	7 – 9	5 – 8
800	60	42	11 – 14	8 – 12
1100	75	52	14 – 17	11 – 17
1500	100	70	19 – 23	15 – 23

Source: energyrating.gov.au.

The following lighting products are currently regulated for MEPS:

- ballasts for fluorescent lamps;
- compact fluorescent lamps;
- incandescent lamps;
- linear fluorescent lamps;
- street lighting and public lighting; and
- transformers and converters for halogens.

Even though LED Lighting is the most efficient lighting technology on the market, it notably is not currently regulated for MEPS.

E3 continues to pursue further options to improve standards for lighting. In late 2015, E3 released *Commercial Lighting Product Profile* and *LED lighting product profile* with the intention of producing a Regulatory Impact Statement (RIS) in the near future.

The *Commercial Lighting Product Profile* mentions a number of policy options to increase or improve MEPS for commercial lighting in 2 to 3 years, these include increasing MEPS on linear fluorescent lights and introducing new MEPS for circular fluorescent lights. Although lighting represents a large proportion of commercial end-use, E3 estimates relatively small impacts from policy action with an increase on MEPS for linear fluorescent lights worth 11.1 to 47.5 GWh per annum across Australia depending on the action.

The *LED Lighting Product Profile* recognises that there are still significant opportunities to reduce end use lighting energy consumption in the residential sector by encouraging the adoption of LED lighting in place of remaining incandescent and halogen lights. E3 estimate a 91.8 kWh saving per Australian household under a scenario with households having 75 per cent LED lights.

Following on from these reports E3 have released a regulatory impact statement in November 2016 *Consultation Lighting Regulation Impact Statement* which forms the basis of future action on lighting efficiency improvement. Potential pathways for lighting include:

- the introduction of MEPS for LEDs, integrated luminaires or non-integrated commercial luminaires;
- increasing current MEPS on incandescent and halogen lighting; and/or
- introduce mandatory labelling for residential lighting.

The *Decision Lighting Regulation Impact Statement* was released in April, 2018 recommending that Australia adopts further efficiency requirements for lighting. These were proposed to be implemented in September 2020, but have yet to be introduced.

- introduce MEPS for LED Lighting; and
- phase-out mains voltage halogen and incandescent light bulbs.

MEPS for luminaries and mandatory energy labelling have been dropped in the Decision RIS.

It is also possible that only the first option, MEPS for LED lighting, will be implemented. While the second option provides the greatest net benefit to Australian households, there are potential barriers to implement the second option.

The phase out of mains voltage halogen lightbulbs will force households to substitute to LED lighting when halogen lighting becomes unavailable for sale. This may be problematic as not all households electrical circuits are compatible with LED Lighting. In particular, spaces that use dimmable lights cannot necessarily be replaced with an LED substitute. When a dimmable LED light is installed in a one of these circuits it may flicker, and fail earlier than it should have. These circuits will require an electrician to upgrade the wiring.

The phase out, if implemented, will accelerate the adoption of LED lighting. The transition to more energy efficiency lighting has been ongoing for around 10 years. This includes through white-certificate programs, building codes, and improvements in lighting technology. Many businesses and households have already taken advantage of these programs (e.g. ESS).

The cost of LED Lighting has fallen significantly in recent years. The penetration of LED Lighting is likely to continue rise under market forces alone (business as usual), while the penetration of mains voltage halogen is likely to fall. This will continue to happen whether halogens are phased out or not.

LED lights have been troubled by issues of quality that the new MEPS standards will seek to address. This will improve the stock of LED lights and remove the least quality lights from sale and will help the transition to a more efficient lighting stock.

At this stage, additionality with the ESS and beyond business-as-usual factors limit the need for a separate post-modelling lighting adjustment. Efficient lighting replacement has already been heavily incentivised over decades.

7.6 Swimming pool pumps

Swimming pool pumps are used in households with either a swimming pool or a spa and are used to circulate water through a filter and remove contaminants from the pool. In households that have a swimming pool or spa, they represent a significant proportion of annual energy consumption and can use around 16 per cent of household annual energy.

Approximately 1.2 million Australian households have a swimming pool or spa. Around a third of all swimming pools are installed in New South Wales. In order to service this amount of swimming pools NIEIR have estimated the annual sales required, allowing for penetration for new swimming pools. Recent historical sales for Australia, as well as forecast sales are shown in Figure 7.7. Australian annual swimming pool pump sales are between 150,000 and 200,000 per annum. Forecast sales are based on an 8 year asset life, and NIEIR forecasts of dwelling stock (with small declines in household penetration).

Swimming Pool Pumps are currently unregulated for MEPS and are not required to carry an Energy Rating Label, but may do so on a voluntary basis. E3 proposes to introduce MEPS and energy labelling for swimming pool pumps.

Swimming pool pumps were the subject of *Consultation Regulation Impact Statement – Swimming Pool Pumps* (November 2016). The Consultation RIS explores a number of options that have the potential to reduce energy consumption from Australian swimming pool pumps. The options include the following.

- Low level MEPS (2-star equivalent).
- Medium level MEPS (4-star equivalent).
- High level MEPS (5.5-star equivalent).

In December 2018, E3 released a document with updated changes to swimming pool pumps (Decision RIS: Swimming Pool Pumps). The introduction of MEPS to swimming pool pumps is proposed to be at a low level (equivalent of around a 2-star rating) and may be raised at a later date. E3 are also proposing to adopt mandatory Energy Rating Labels that will display the efficiency of the pool pump on a scale of 10 stars.

The current timelines are as follows:

- low level MEPS and mandatory energy rating labelling – 2021; and
- medium level MEPS – around 2023.

However, the introduction of new MEPS regulations for other classes of products has typically been behind any proposed timelines that are suggested by E3. In the absence of any more recent reports with confirmed timelines, NIEIR assumes are more delayed implementation of the medium level MEPS. While Medium level MEPS may be implemented, it is too soon to determine whether or when they will actually be implemented.

Figure 7.7 contains historical and annual forecasts of swimming pool pumps in Australian households. Penetration is expected to decline as land values remain high, and lack of space in new dwellings for pools causes a decline in ownership. Figure 7.8 contains models of pool pumps available on the market with lines marking the low and medium level MEPS. The low-level MEPS shows that only a small amount of the models currently on the market will be withdrawn (or re-engineered) to exceed the requirements.

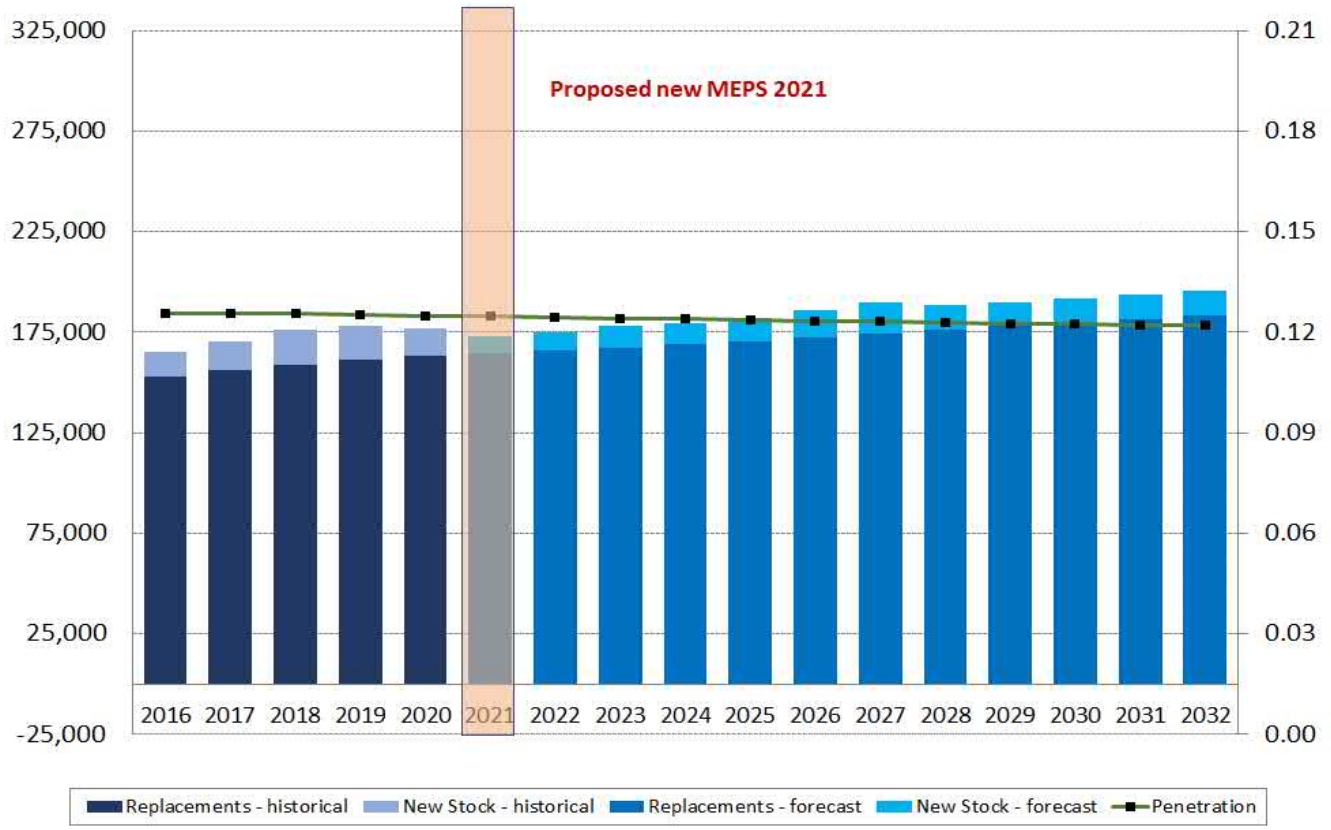
Most swimming pool pumps sold in Australia are between 0.75kW and 1.8kW in size[12]. NIEIR have assumed a current mean sales size of 1.2kW for new pumps. The low-level MEPS will only remove a small number of models from the market. NIEIR assumes a 10 per cent average reduction in annual energy consumption for new swimming pool pumps with level 2 MEPS in place.

The post-modelling adjustments for swimming pool pumps for NSW, Endeavour and the three planning regions are shown in Tables 7.20 to 7.22. The swimming pool pump MEPS are targeted toward residential swimming pool pumps only, hence all of the impact is within the residential sector and no impact is assumed for the commercial and industrial sectors.

Summer maximum demand and winter maximum demand impacts were derived by estimating the total potential improvement in the stock of swimming pool pumps (MW). This was then multiplied by an assumed coincidence factor. Winter impacts are discounted by 50 per cent.

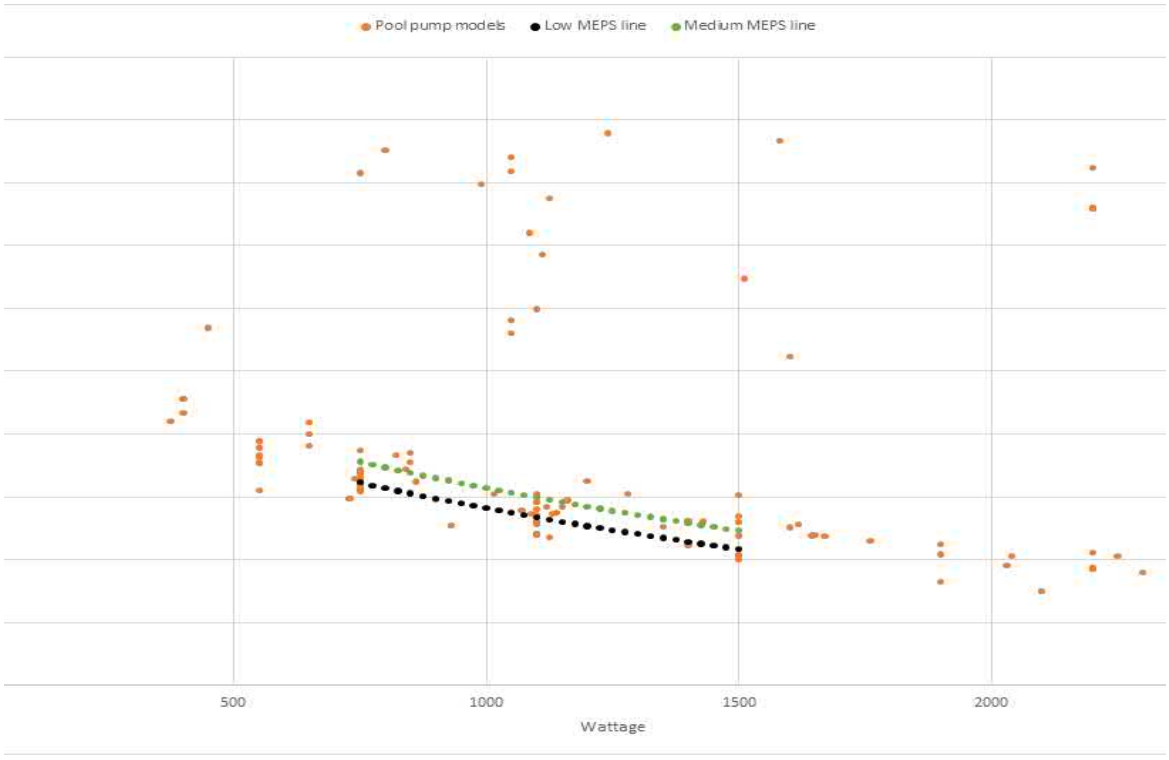
[12] Consultation RIS.

Figure 7.7: Swimming pool pump sales and penetration



Source: NIEIR.

Figure 7.8: Swimming pool pump models



Source: E3, UPDATE: Proposed changes to pool pump regulations, Figure B1.

Table 7.20	Swimming pool pumps – Annual energy reduction (GWh)				
	NSW	Endeavour	Western Sydney	Illawarra and Blue Mountains	Shoalhaven and Wollongong
2022	6.7	2.6	1.2	0.8	0.5
2023	13.4	5.2	2.5	1.7	1.1
2024	20.1	7.8	3.7	2.5	1.6
2025	26.9	10.5	5.0	3.3	2.1
2026	33.7	13.1	6.3	4.2	2.7
2027	40.6	15.8	7.5	5.1	3.2
2028	47.3	18.5	8.8	5.9	3.8
2029	54.1	21.1	10.0	6.7	4.3
2030	60.8	23.7	11.3	7.6	4.8
2031	67.6	26.4	12.5	8.4	5.4
2032	74.3	29.0	13.8	9.3	5.9

Table 7.21	Swimming pool pumps – Summer maximum demand impact (MW) – 5:00 PM				
	NSW	Endeavour	Western Sydney	Illawarra and Blue Mountains	Shoalhaven and Wollongong
2022	1.3	0.5	0.2	0.2	0.1
2023	2.7	1.0	0.5	0.3	0.2
2024	4.0	1.6	0.7	0.5	0.3
2025	5.4	2.1	1.0	0.7	0.4
2026	6.7	2.6	1.3	0.8	0.5
2027	8.1	3.2	1.5	1.0	0.6
2028	9.5	3.7	1.8	1.2	0.8
2029	10.8	4.2	2.0	1.3	0.9
2030	12.2	4.7	2.3	1.5	1.0
2031	13.5	5.3	2.5	1.7	1.1
2032	14.9	5.8	2.8	1.9	1.2

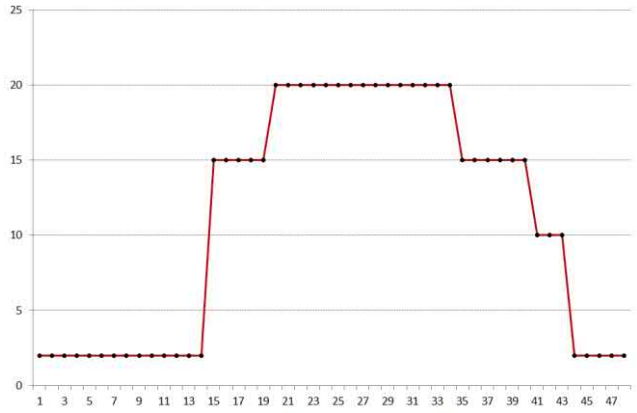
Table 7.22	Swimming pool pumps – Winter maximum demand impact (MW) – 6:00 PM				
	NSW	Endeavour	Western Sydney	Illawarra and Blue Mountains	Shoalhaven and Wollongong
2022	0.5	0.2	0.1	0.1	0.0
2023	1.0	0.4	0.2	0.1	0.1
2024	1.5	0.6	0.3	0.2	0.1
2025	2.0	0.8	0.4	0.3	0.2
2026	2.5	1.0	0.5	0.3	0.2
2027	3.0	1.2	0.6	0.4	0.2
2028	3.5	1.4	0.7	0.4	0.3
2029	4.1	1.6	0.8	0.5	0.3
2030	4.6	1.8	0.8	0.6	0.4
2031	5.1	2.0	0.9	0.6	0.4
2032	5.6	2.2	1.0	0.7	0.4

7.6.1 Time of day

Summer and winter maximum demand impacts are derived from a theoretical profile of the per cent of swimming pool pumps operating in any given interval. The profile was based on several assumptions:

- most people adhere to overnight noise restrictions, and only a small number of households run their pump overnight;
- in summer, a swimming pool pump is run on average from 5 to 6 hours per day. This could be broken up into two to three-hour sessions;
- some households will attempt to match swimming pool pump use to PV generation;
- anecdotally, swimming pool pumps are commonly switched on in the early afternoon. With either a second session in the early morning or early evening; and
- a maximum of 20 per cent of swimming pool pumps are running at the same time.

Figure 7.9: Swimming pool pump summer maximum demand profile (per cent active)



Source: NIEIR.

7.7 Summary MEPS impacts

NIEIR have estimated post-modelling adjustments for a number of product classes that are set to have new MEPS introduced within the next five years. Post-modelling adjustments were found to have been required for air conditioners, refrigerators and freezers, and swimming pool pumps. E3 are also progressing further MEPS or energy labelling requirements for other product classes, but at this stage these are more uncertain in scope and timing.

The largest impacts are expected to be within the residential sector, with only minor impacts in the commercial sector and negligible impacts in the industrial sector.

The summary of results for the total Endeavour Energy network are presented in the following tables. Results are presented by sector for annual energy, and summer and winter maximum demand.

Table 7.23 Summary of MEPS annual energy impacts by sector – Endeavour Energy total (GWh)

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Residential											
Air conditioners	0.8	0.8	0.9	1.0	1.1	1.3	1.5	1.7	2.0	2.3	2.6
Refrigerators and freezers	2.5	5.1	7.6	10.2	12.8	15.4	18.0	20.6	23.2	25.8	28.4
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	2.6	5.2	7.8	10.5	13.1	15.8	18.5	21.1	23.7	26.4	29.0
Sub-total	**6.0**	**11.1**	**16.3**	**21.7**	**27.1**	**32.5**	**38.0**	**43.4**	**48.9**	**54.5**	**60.0**
Commercial											
Air conditioners	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
Refrigerators and freezers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**
Industrial											
Air conditioners	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerators and freezers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total											
Air conditioners	0.9	0.9	1.0	1.1	1.3	1.4	1.7	1.9	2.2	2.6	2.9
Refrigerators and freezers	2.5	5.1	7.6	10.2	12.8	15.4	18.0	20.6	23.2	25.8	28.4
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	2.6	5.2	7.8	10.5	13.1	15.8	18.5	21.1	23.7	26.4	29.0
Grand total	**6.1**	**11.2**	**16.4**	**21.8**	**27.2**	**32.7**	**38.1**	**43.6**	**49.2**	**54.7**	**60.3**

Table 7.24 Summary of MEPS summer demand impacts by sector – Endeavour Energy total (MW)											
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Residential											
Air conditioners	0.6	0.6	0.7	0.7	0.8	0.9	1.1	1.2	1.4	1.6	1.8
Refrigerators and freezers	0.3	0.7	1.0	1.3	1.6	2.0	2.3	2.6	3.0	3.3	3.6
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.5	1.0	1.6	2.1	2.6	3.2	3.7	4.2	4.7	5.3	5.8
Sub-total	**1.5**	**2.3**	**3.2**	**4.1**	**5.1**	**6.1**	**7.1**	**8.1**	**9.1**	**10.2**	**11.3**
Commercial											
Air conditioners	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
Refrigerators and freezers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**
Industrial											
Air conditioners	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerators and freezers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total											
Air conditioners	0.7	0.7	0.7	0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0
Refrigerators and freezers	0.3	0.7	1.0	1.3	1.6	2.0	2.3	2.6	3.0	3.3	3.6
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.5	1.0	1.6	2.1	2.6	3.2	3.7	4.2	4.7	5.3	5.8
Grand total	**1.5**	**2.4**	**3.3**	**4.2**	**5.2**	**6.2**	**7.2**	**8.2**	**9.3**	**10.4**	**11.5**

Table 7.25 Summary of MEPS winter demand impacts by sector – Endeavour Energy total (MW)											
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Residential											
Air conditioners	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerators and freezers	0.3	0.5	0.8	1.0	1.3	1.6	1.8	2.1	2.3	2.6	2.9
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2
Sub-total	**0.5**	**0.9**	**1.4**	**1.8**	**2.3**	**2.7**	**3.2**	**3.7**	**4.1**	**4.6**	**5.0**
Commercial											
Air conditioners	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerators and freezers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Industrial											
Air conditioners	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerators and freezers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total											
Air conditioners	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Refrigerators and freezers	0.3	0.5	0.8	1.0	1.3	1.6	1.8	2.1	2.3	2.6	2.9
Lighting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Swimming pool pump	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2
Grand total	**0.5**	**0.9**	**1.4**	**1.8**	**2.3**	**2.7**	**3.2**	**3.7**	**4.1**	**4.6**	**5.0**

8. Building standards for new residences

Building standards for new homes have been significantly tightened since 2004, resulting in lower energy demands (MWhs, kW) per m^2. In terms of actual energy use per residential unit, this improved design shell/envelope thermal performance has been offset to some extent by increases in conditioned floor area, increased space comfort levels, higher lighting intensities and **as-built** non-compliance with pre-build design on building permits. For example, incorrect installation of insulation and lack of adequate attention to air tightness.

Currently the nationally accepted standard is a 6-star shell. But there are regional variations. For example, inclusion of water heating, supply and use in Victoria, the use of BASIX design criteria in New South Wales.

Accordingly, estimated actual performance is used in NIEIR's new home modelling by taking account of State/Territorial variations and discounting the design performance for non-compliance.

The BASIX (Building Sustainability Index) criteria for new residences in New South Wales, introduced in 2004, are more comprehensive than new building codes in other jurisdictions (under the National Construction Code, previously the Building Code of Australia).

BASIX uses a minimum point rating to attain a target, not a star rating system for new residences, and has separate levels for heating and cooling loads and covers water use, thermal comfort and energy use. Its 12 February 2012 draft upgrade is equivalent to a 5.5 to 6.5 star rating, compared with a minimum 6-star rating in other jurisdictions. The BASIX requirements are likely to have a similar impact on the energy performance of new residences to requirements in other jurisdictions. Although, the BASIX criteria include heating and cooling caps which help balance summer and winter energy consumption, while other jurisdictions currently do not.

8.1 BASIX targets and impact

BASIX compliant new dwellings are designed to achieve a target water and energy reduction below benchmark NSW energy and water consumption. The targets prior to July 2017 included (with some variations):

- up to a 40 per cent reduction in potable water consumption; and
- up to a 40 per cent reduction in energy consumption (expressed in greenhouse gas emissions).

In 2013 and subsequent years the BASIX program was subject to a review and consultation period resulting in an increase to BASIX targets. The end result was an increase of the BASIX targets for residential detached/semi-detached dwellings and multi-storey dwellings.

New targets were introduced for BASIX as of July, 2017. Table 8.1 shows the new targets for zones within New South Wales. The majority of the Endeavour service area is covered by either E1A (Sydney) or E1B. On average, these targets represent an additional increase of around 10 per cent for detached houses and 5 per cent for mid-rise and high-rise buildings compared to previous targets.

Table 8.1 BASIX – Energy target zones

	Zone				
Building type	**E1A**	**E1B**	**E2**	**E3**	**E4**
Detached and semi-detached dwellings	50	50	45	40	35
Low-Rise (3 storey units)	45	40	35	30	25
Mid-Rise (4-5 storey units)	35	30	25	20	15
High-rise (6 storey units or higher)	25	20	15	10	10

Source: https://www.basix.nsw.gov.au/iframe/about-basix/basix-assessment/basix-targets.html.

The targets are set in reference to a benchmark consumption rate. The benchmark is expressed as a rate of water and energy consumption per person. The per person rates of water and energy consumption are combined with occupancy and dwelling size type variables to establish dwelling water and energy benchmarks. The NSW benchmarks for BASIX are 90,340 litres of water per person per year; and the energy benchmark for electricity and gas is expressed as a combined emissions benchmark of 3,292 kg of CO_2 per person per year.

The benchmarks are based on NSW consumption data that was collected prior to the introduction of BASIX (introduced in 2004). A target of a 50 per cent reduction in energy use is in reference to NSW per person energy consumption in 2004.

In 2021 there were several minor improvements to BASIX that are unlikely to have a significant impact[13]. Overall, updates to the BASIX scheme are infrequent. There may be further updates to BASIX to align with the 2022 National Construction Code update, but the extent of any future changes and impact is unclear at this stage.

Improvements to new dwelling thermal performance, water and energy consumption would have occurred through ordinary efficiency improvement regardless of new building standards. Therefore, some of the new improved target will be catching up to the market, rather than new dwellings receiving the full impact.

BASIX addresses energy use primarily through thermal design principals which help to reduce space heating and cooling loads. This can be achieved through house orientation, skylights, window placement and shading, for example. Space heating and cooling load reductions are also a function of the air conditioners and heaters used to achieve the desired temperature. Electric air conditioners for cooling and heating have undergone significant energy efficiency improvement since 2004 through a series of more stringent MEPS. Gas heaters have also improved, but at a slower pace. They are not regulated for MEPS, but most will display energy labelling.

Newer more efficient and affordable appliances will help to achieve the BASIX targets, impacts of which are already covered by MEPS programs and ordinary efficiency improvement.

Similarly, lighting has undergone a phase out of incandescent light bulbs and the market is moving toward the adoption of LED lighting in place of halogen light bulbs. MEPS are also in place for most lighting technologies.

Another factor to consider is the underlying trend in consumption per household is decreasing in part because of a higher mix of new apartment construction in recent years. Overall, average dwelling floor area has been decreasing since the early 2000's. Increases to the size of detached dwellings have also stabilised and fallen marginally over the past 5 years. New South Wales detached dwelling floor area has decreased the most out of any state, with peak average floor areas of around 270 square meters in 2011-12 down to about 230 square meters in 2017[14]. Average energy consumption may continue to fall, but economic factors also contribute.

When new building codes are introduced, they are typically observed as a step-change reduction in new dwelling consumption compared to the previous cohort. There may be continued declines in the following years, but to a lesser degree and due to other factors. Any changes due to the 2017 target revision are already factored into historical energy consumption data.

For the above reasons, a post-modelling adjustment is not required at this time.

[13] https://www.planningportal.nsw.gov.au/news/upgrades-basix-30-april-2021

[14] *Economic Insights: Australian home size hit 20-year low*, CommSec.

8.2 Compliance with building standards

Compliance with designs to meet standards is a significant issue. This means that dwellings, as constructed, fail to meet the energy and water savings targets as calculated at the time of design. We are not aware of any significant BASIX compliance studies but have reviewed non-compliance issues studies in other jurisdictions.

The compliance issue has been the subject of two respected reports, one by CSIRO for the Federal Department of Industry and one by pitt&sherry and Swinburne University of Technology for CoAG. The reports concern the significant non-compliance of new residences with the mandated building code. These reports do not cover the New South Wales BASIX code but it is unlikely that the compliance situation is significantly different in New South Wales. This non-compliance results in higher operating costs for residents/householders and higher greenhouse gas emissions than would be the case if these new residences complied with code requirements.

Despite the findings of these reports there seems to be little action to address compliance issues and the implications widespread non-compliance on potential energy savings.

Key findings from the CSIRO study are summarised below.

Box 2: Some key CSIRO study results

Rating results: Melbourne (Climate Zone 6)

Original design rating:	97 per cent ≥5-stars.
Re-rating (tests on completed residence)	31 per cent ≥5-stars 17 per cent <4-stars.
	Over time (2003 to 2010) as rating requirements increased compliance has decreased.

Meeting star rating requirements: Melbourne

Insulation:	16 per cent in poor condition.
	Large gaps left around downlights (safe light fitting coverings rarely used).
	Internal wall insulation rarely used.
Double glazing:	13.3 per cent in ≥5-stars.
	28 per cent of home owners thought they had double glazing.
Weather sealing:	20 Melbourne homes blower-door tested.
	10 to 15 ACPH at 50 Pa recommended.
	Average of tested homes 19.7 ACPH at 50 Pa.
	Only one home <10 ACPH at 50 Pa.
Lighting:	81 per cent inefficient halogens; 66 per cent thought they had efficient lighting.
Energy use:	50 per cent less gas for space heating in ≥5-stars due to efficiency and reverse cycle air conditioner (RAC) usage.
	8 per cent more electricity use in ≥5-star homes.

Two very important aspects of the CSIRO work are:

- the sample/cohort houses were re-rated by physical testing as-occupied, after construction and the re-rated star-rating results compared with the design star ratings. We have been arguing the need for this over the past 10 years. Re-rating in the future would preferably be undertaken after construction completion but before occupation; and
- it provides a sample/cohort of houses (only detached) that can be monitored over time for energy use trends in these houses as they are modified, equipment/appliance use changes, weather changes and occupation characteristics change.

A key finding of the pitt&sherry/Swinburne study is that the building industry perceives little risk that cutting corners on energy performance will be discovered or, if it is, that there will be any serious consequences.

In the *Consultation Regulation Impact Statement: Energy efficiency for residential buildings* (released 2018*)* the report cites that 70 per cent of new dwelling designs are compliant with the National Construction Code. The main problem addressed in the report is to include heating and cooling caps within the code, as dwellings tend to prioritise one season over the other (e.g. efficient heating in winter, but poor cooling performance in summer). However, the NSW BASIX program already includes requirements for heating and cooling caps.

9. Other government programs

9.1 Renewable Energy Targets

9.1.1 Federal Renewable Energy Target

The Renewable Energy Target (RET) is designed to stimulate investment into small and large-scale renewable energy systems by providing financial incentives to owners of renewable electricity generators. This is toward the ultimate goal of increasing the overall proportion of electricity consumed from renewable sources, and reducing greenhouse gas emissions from the electricity sector.

The scheme has operated in two distinct parts since 2011:

- the Large-scale Renewable Energy Target (LRET); and
- the Small-scale Renewable Energy Target (SRES).

The LRET provided ongoing financial incentives to renewable generators through facilitating a market for the creation of tradable certificates. Large-scale generators create certificates for each megawatt hour of electricity they generate. Purchasers of wholesale electricity, such as energy retailers, are required to meet a regulated number of certificates each year. The balance of the supply and demand of large-scale generation certificates creates the price. The certificates subsidise the greater cost of providing electricity from renewable projects compared with the cost of generating from established coal and gas generator technologies.

The **LRET** aimed to achieve 33,000 GWh of additional renewable energy generation by 2020 from new large-scale renewable generators such as wind and solar farms. This target has since been met prior to the cut-off date. The scheme is still running out to 2030, but the government has not increased the target.

> "*The Regulator has advised there are now sufficient projects approved to meet and exceed the 2020 target of 33,000 gigawatt hours of additional renewable electricity. The annual target will remain at 33,000 gigawatt hours until the scheme ends in 2030.*"
>
> https://www.industry.gov.au/funding-and-incentives/renewable-energy-target-scheme

The **SRES** is aimed at smaller systems such as solar panels, solar water heaters and small-scale wind and hydro generation. The SRES provides incentives for households and small businesses to install renewable systems through the creation of tradeable certificates.

The scheme operates in a similar manner to the LRET; however, certificates are not based on the actual generation of the systems, but the expected (or deemed) level of generation over the assets lifetime. During 2016 this is set at the expected generation over 15 years but is declining from 1 January 2017 from 15 to 14 year deeming period. The deeming period will continue to decline by one year for each year until the SRES expires in 2030. Energy retailers, for example, are also required to purchase a set number of small-scale certificates.

The value of the certificates subsidises the upfront cost of installing a system. Installers often offer a discount on the installation cost to the value of the certificates.

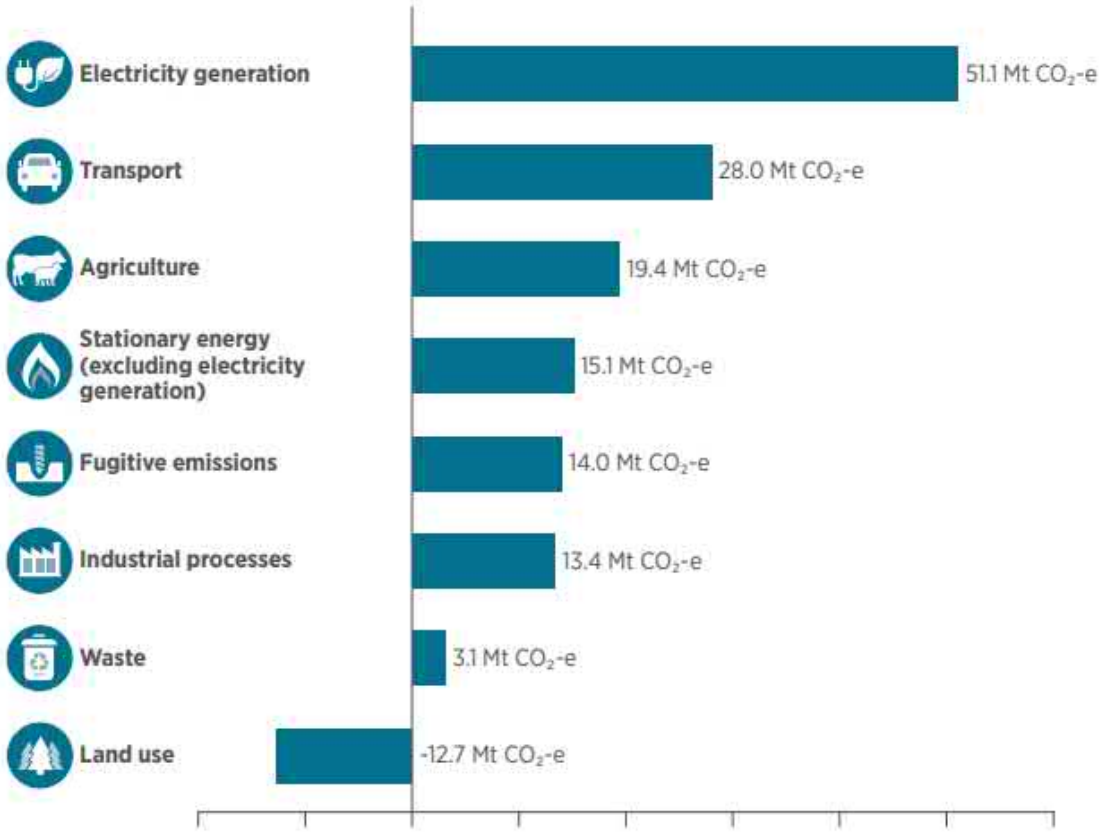
9.2 NSW net zero emissions by 2050

The NSW government has set an "aspirational" target of achieving net zero emissions by 2050 for the state. The target is no legislated, but will help guide NSW toward reducing emissions over the coming decades. If current emissions reduction trends from the past five years are continued for NSW until 2050, the net zero emissions target will almost be achieved by 2050 anyway.[15] However, the NSW government projects that emissions levels will stabilise in the coming years if no further action is taken.[16]

The plan for NSW to reduce emissions over the next ten years by 35 per cent by 2030 compared to 2005 levels is contained in the Department of Planning, Industry and Environment's *Net Zero Plan Stage 1: 2020–2030.* The plan is outlined in four areas.

1. Drive uptake of proven emissions reduction technologies that grow the economy, create new jobs or reduce the cost of living.
2. Empower consumers and businesses to make sustainable choices.
3. Invest in the next wave of emissions reduction innovation to ensure economic prosperity from decarbonisation beyond 2030.
4. Ensure the NSW Government leads by example.

Figure 9.1: NSW emission by sector 2017



Source: Department of Planning, Industry and Environment, Net Zero Plan Stage 1: 2020–2030

[15] Office of Environment and Heritage, Fact Sheet Achieving Net-Zero Emissions by 2050

[16] Department of Planning, Industry and Environment, Net Zero Plan Stage 1: 2020–2030

9.3 Other Federal renewable energy incentives

There are two primary agencies that support the adoption of renewable energy in Australia:

- the Australian Renewable Energy Agency (ARENA); and
- the Clean Energy Finance Corporation.

The **Australian Renewable Energy Agency** (ARENA) provides funding and grants to projects and research that will reduce the cost and increase the amount of renewable energy in Australia. All grants received from ARENA are required to be matched by funding provided by the recipient. Established in July 2012, the independent agency has around 2 billion in funding. In 2021 the most recent projects that have received funding include the areas:

- Hydropower and Pumped Hydro Energy Storage
- Concentrated solar thermal;
- Distributed energy resources;
- Battery storage;
- Electric vehicles; and
- Solar PV Research and Development.

In previous years there have been significant rounds of funding toward large scale solar systems, which are now being completed at a historically rapid pace. Examples of projects supported by ARENA in New South Wales include the 25 MW Dubbo Solar Hub and Manildra Solar Farm. Queensland was the major beneficiary of the latest competitive round of funding for large solar.

The **Clean Energy Finance Corporation** (CEFC) provides financing options to renewable energy, energy efficiency and low emission projects. The finance can be in the form of equity or debt. They seek financing solutions exclusively for the clean energy sector, such as co-financing and investing directly in projects. Unlike ARENA, CEFC does not provide grants to projects.

9.4 Emissions Reduction Fund

The Emissions Reduction Fund (ERF) is the Federal governments' primary policy framework to reduce carbon emissions. The program operates by funding projects through a reverse auction process, where the lowest cost reductions are selected by the government. The types of projects that can be funded are limited by the methods that are released by the Department of the Environment. These methods set out the rules in which projects can use to reduce emissions.

Projects are funded through rounds of biannual auctions held in approximately every six months since April, 2015. The latest auction was held in April, 2021. Most of the successful projects relate to vegetation-based activities which will have little impact on energy sales or maximum demand.

Later rounds have also introduced energy efficiency methods, but these have had only limited uptake and will not have a large impact on energy or maximum demand projections. Currently methods available for energy efficiency include:

- aggregated small energy users;
- commercial and public lighting;
- commercial building energy efficiency; and
- industrial electricity and fuel efficiency.

Table 9.1 contains the distribution of projects awarded through all of the auction rounds up to and including April 2021.

The majority of the contracts have been concentrated into Queensland and New South Wales. New South Wales has been awarded the most contracts with 375 projects funded under contract, while Queensland has 325 projects funded under contract. Together New South Wales and Queensland have 60 per cent of the total projects funded through the ERF. (This only includes contracts that were based solely within each respective state. There are also interstate projects that cover multiple project sites across Australia.)

Most of New South Wales's projects are related to vegetation, waste and savanna burning and are unlikely to have a substantial impact of electricity use. Energy efficiency projects supported at the national level may have a very minor impact on New South Wales energy use. These projects relate to replacement lighting, and upgrading industrial equipment.

Table 9.1 Summary of contracted projects for the Emissions Reduction Fund

Project location	Method type	Total
Number of contracted projects		
Nation Wide or multiple States/Territories	Agriculture	5
	Energy Efficiency	35
	Savanna Burning	2
	Transport	7
	Vegetation	8
	Waste	4
New South Wales	Agriculture	51
	Energy Efficiency	5
	Facilities	3
	Industrial Fugitives	11
	Vegetation	247
	Waste	58
Victoria	Agriculture	50
	Energy Efficiency	16
	Transport	1
	Vegetation	32
	Waste	18
Queensland	Agriculture	34
	Energy Efficiency	9
	Industrial Fugitives	6
	Savanna Burning	47
	Transport	1
	Vegetation	186
	Waste	42
South Australia	Agriculture	9
	Energy Efficiency	2
	Transport	1
	Vegetation	30
	Waste	10
Western Australia	Agriculture	4
	Energy Efficiency	8
	Savanna Burning	16
	Vegetation	119
	Waste	14
Tasmania	Agriculture	15
	Energy Efficiency	2
	Vegetation	17
	Waste	8
Northern Territory	Energy Efficiency	1
	Savanna Burning	29
	Waste	1
Australian Capital Territory	Vegetation	2
	Waste	4
Total		**1,170**
Per cent of contracted projects		
Nation Wide or multiple States/ Territories		5%
New South Wales		32%
Victoria		10%
Queensland		28%
South Australia		4%
Western Australia		14%
Tasmania		4%
Northern Territory		3%
Australian Capital Territory		1%
Total		**100%**

Source: Clean Energy Regulator.

9.5 Demand side programs

Demand response programs are designed to reduce consumer demand (kW) during peak intervals. The first common type of demand response programs offer incentives to individual customers to reduce their electricity demand during peak intervals. Incentives could be in the form or price signals or financial incentive. The second common type of demand response program uses technology, such as smart meters or smart controllers, to temporarily reduce customer load during peak times. Technology based solutions may or may not offer incentives to customers to load reduction.

Demand response initiatives are gaining more prominence as an alternative to investing in additional physical infrastructure to meet peak demand. Demand response programs have been in place for some time, particularly targeted at large energy consuming customers. In recent years they have become more widespread as initiatives have widened to include other customer classes, such as residential and smaller commercial customers.

The new Peak Demand Reduction Scheme is reviewed in Chapter 4.

9.5.1 ARENA demand response initiative

The Australian Renewable Energy Agency together with AEMO have awarded funding to ten pilot projects in New South Wales, Victoria and South Australia. Together these programs are expected to make available 200 MW in capacity savings during peak periods by 2020, with up to 143 MW available in summer 2019 during peak periods.

ARENA and AEMO have awarded funding to a diverse range of projects that have been initiated by distributors, retailers, and technology companies. These projects have a diverse set of customers that cover residential, commercial and industrial customer classes.

Table 9.2 summarises the ten pilot projects across Australia. The outcomes and success of each of these programs should be monitored for potential applications to Endeavour Energy.

Table 9.2 ARENA funded demand response pilot programs

Project	State	Funding ($million)	Details
AGL	NSW	5.25	Measures for retail customers – residential, commercial and industrial.
EnergyAustralia	NSW	3.94	Measures for retail customers – residential, commercial and industrial.
EnerNOC	NSW	3.6	Industrial and commercial customers load reduction.
Flow Power	NSW	2.64	Smart controller for 95 commercial and industrial customers.
United Energy Distribution Pty. Ltd.	VIC	5.76	Voltage reduction at substations, using substation and customer smart meters.
EnerNOC	VIC	5.4	Industrial and commercial customers load reduction.
Powershop Australia Pty. Ltd.	VIC	0.995	Incentives to reduce load for retail customers.
EnergyAustralia	VIC and SA	6.93	Measures for retail customers – residential, commercial and industrial.
Zen Ecosystems	VIC and SA	1.96	Thermostat to control heating and cooling load for commercial and residential buildings.
Intercast & Forge	SA	0.323	Single industrial customer of metal castings. Power down furnaces during peak intervals.

Source: ARENA, https://arena.gov.au/blog/demand-response-4/.

10. The impact of tariff reform by Endeavour Energy

In 2018, NIEIR undertook an assessment of the impact of new tariff structures being introduced by Endeavour Energy from July 2019 to June 2024.

For the 2021 post-modelling report update, NIEIR has not fully updated this analysis as there is no substantial data or information yet available on the impact of tariff reform. Once there is sufficient internal data available in two to three years, a more detailed analysis will be possible.

A description of the tariff reforms were outlined in Chapter 10 of the Post-modelling adjustment report (2018). In the 2018 report, the impact of tariff reform measures on energy sales was reported as negligible.

The impact of tariff reform on electricity demands is provided below and is extended out to 2032.

The impact on electricity demands

The impact of Endeavour Energy's new tariff structures on electricity demands is uncertain. Shifting, however, from a fixed charge and energy tariff only to a fixed charge energy and demand tariff will make residential and business consumers more aware of their peak energy use.

In the long-run, demand charges could induce a shift in consumer business preferences to more energy efficient space heating and cooling equipment. A short-run demand reduction response is also likely. In addition, Endeavour Energy's revenue could become more unstable, as peak demands are more sensitive to underlying weather conditions.

Assuming the short-run response of around 5 per cent and a long-run response of 10 per cent (spread out over 15 years to allow for appliance lives). Figures 10.1 and 10.2 show the estimated impact on Endeavour Energy summer and winter peak demands to 2032.

Figure 10.1: The annual impact on Endeavour Energy's peak summer demands

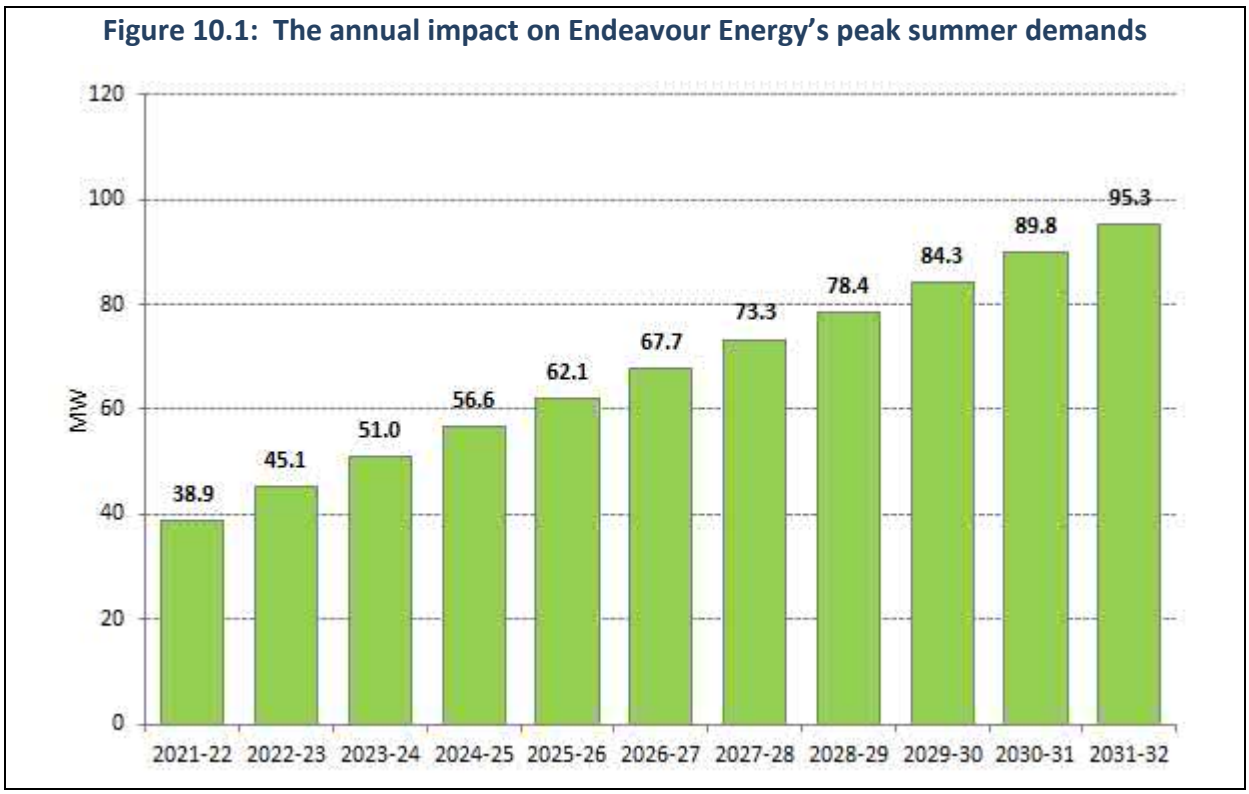
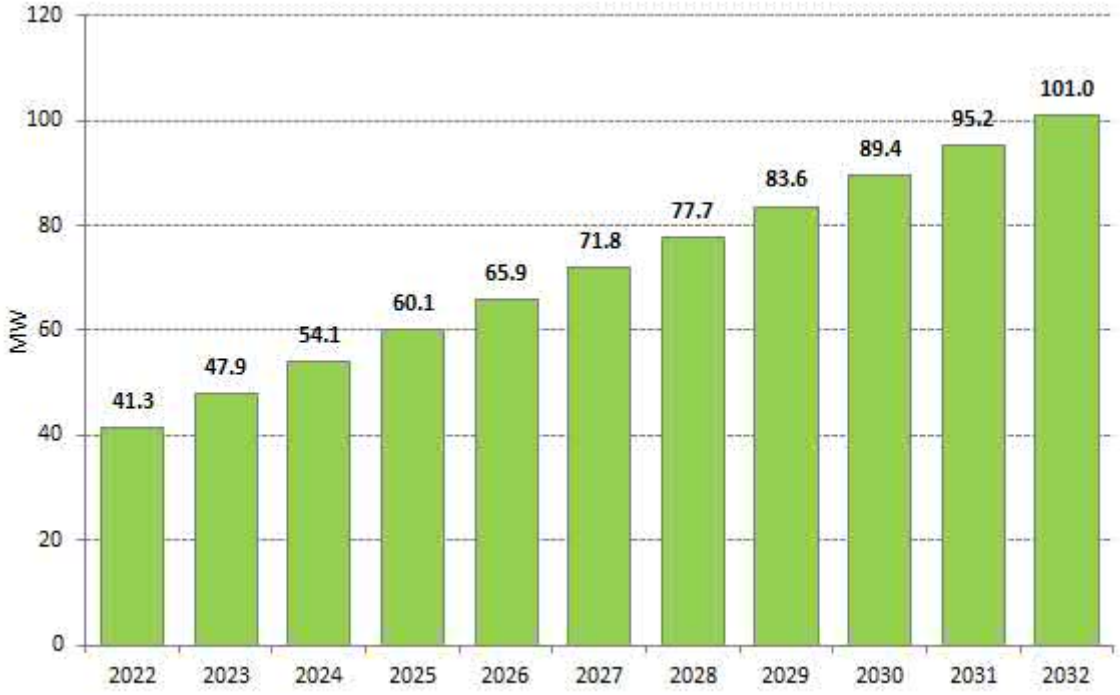


Figure 10.2: The annual impact on Endeavour Energy's peak winter demands



Appendix A:

Detailed tables of cumulative customers, cumulative capacity and total in-house use by PV systems by zone substation – Endeavour Energy

Table A.1 Cumulative customers by zone substation – Endeavour Energy – Residential												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	2116	2365	2578	2777	2974	3156	3343	3531	3723	3927	4152	4384
ALBION PARK	2723	3045	3317	3567	3811	4034	4259	4481	4706	4940	5194	5452
AMBARVALE	1977	2240	2462	2669	2872	3059	3248	3437	3629	3830	4050	4275
ANZAC VILLAGE	1521	1727	1902	2066	2228	2378	2531	2684	2841	3007	3189	3377
APPIN	434	550	647	737	826	906	988	1068	1150	1236	1328	1423
ARNDELL PARK	751	862	957	1044	1131	1211	1292	1373	1455	1542	1637	1735
BAULKHAM HILLS 11KV	1642	1854	2035	2204	2371	2526	2683	2841	3003	3174	3361	3554
BELLA VISTA	2419	2742	3018	3276	3530	3764	4003	4243	4488	4746	5028	5319
BERRY	877	1007	1116	1217	1315	1405	1496	1587	1678	1773	1877	1982
BLACKHEATH	629	687	736	780	824	863	903	942	981	1022	1066	1111
BLACKMANS FLAT	231	321	397	468	536	599	662	724	787	853	924	996
BLAXLAND	1746	1836	1911	1980	2047	2108	2169	2229	2290	2353	2421	2490
BOLONG	177	213	244	272	300	325	351	376	402	428	457	487
BOMADERRY	1803	2006	2177	2335	2490	2631	2773	2914	3056	3205	3365	3529
BONNYRIGG	2164	2459	2710	2942	3170	3379	3592	3804	4019	4245	4491	4744
BOSSLEY PARK	1520	1640	1741	1833	1923	2005	2087	2168	2249	2334	2425	2517
BOW BOWING	765	887	989	1084	1177	1261	1347	1431	1517	1606	1703	1802
BOWRAL	1199	1436	1636	1820	2000	2165	2331	2495	2661	2835	3023	3214
BRINGELLY	318	461	585	702	819	929	1042	1158	1278	1407	1551	1701
BULLI	1137	1475	1762	2028	2289	2529	2773	3016	3263	3522	3805	4097
BYLONG	16	26	34	42	50	56	63	70	77	84	92	99
CABRAMATTA	607	724	822	914	1004	1086	1170	1253	1338	1427	1524	1623
CAMBRIDGE PARK	2080	2365	2606	2831	3052	3254	3460	3665	3874	4093	4331	4576
CAMPBELLTOWN	1260	1511	1726	1928	2129	2316	2508	2702	2901	3114	3348	3593
CANLEY VALE	1755	1987	2183	2364	2541	2703	2866	3027	3191	3362	3547	3736
CARRAMAR	543	670	777	875	971	1058	1145	1231	1318	1408	1505	1604
CASTLE HILL	615	1012	1347	1658	1962	2240	2521	2800	3083	3379	3700	4028
CASULA	1931	2296	2605	2891	3172	3430	3691	3951	4215	4492	4793	5101
CATTAI	470	584	681	771	858	938	1019	1099	1180	1265	1357	1450
CAWDOR	1090	1344	1564	1773	1983	2181	2385	2594	2812	3045	3306	3581
CHERITON AVENUE	1139	1404	1632	1845	2058	2255	2458	2663	2874	3098	3346	3604
CHIPPING NORTON	890	993	1081	1163	1245	1321	1399	1477	1558	1644	1739	1838
CLAREMONT MEADOWS	1251	1540	1787	2018	2246	2458	2674	2892	3115	3351	3611	3880
CORRIMAL	1329	1569	1772	1958	2139	2303	2469	2632	2796	2967	3151	3338
CRANEBROOK	1044	1253	1429	1593	1754	1901	2051	2200	2351	2509	2682	2858
CULBURRA	1024	1185	1321	1446	1568	1679	1792	1903	2016	2133	2261	2390
DAPTO	3339	3694	3993	4269	4537	4782	5028	5273	5519	5775	6052	6335
DARKES FOREST	5	33	56	78	99	118	137	156	176	196	218	241
DOONSIDE	3996	4605	5122	5604	6079	6516	6961	7406	7859	8336	8857	9393
DUNDAS	1486	1812	2089	2347	2600	2832	3068	3304	3543	3795	4069	4350
EAST RICHMOND	688	827	945	1053	1159	1255	1353	1450	1548	1650	1761	1874
EASTERN CREEK	13	15	17	19	21	23	24	26	28	29	31	33
EDMONDSON PARK	542	689	815	930	1044	1149	1254	1360	1467	1579	1701	1825
EMU PLAINS	1415	1536	1638	1732	1823	1907	1991	2075	2159	2247	2343	2440
FAIRFIELD	740	815	878	936	992	1043	1095	1146	1197	1251	1309	1367
FIGTREE	1826	2110	2349	2569	2782	2977	3172	3365	3559	3761	3978	4199
GERRINGONG	654	716	767	815	862	906	949	992	1036	1082	1132	1183
GLENMORE PARK	2442	2661	2847	3019	3189	3344	3502	3660	3820	3988	4171	4359
GLENORIE	264	318	363	406	448	487	527	566	607	650	697	745
GLOSSODIA	706	840	952	1056	1157	1249	1342	1434	1527	1623	1727	1833
GRANVILLE	669	800	912	1016	1120	1215	1312	1410	1510	1616	1732	1852
GREYSTANES	970	1090	1193	1289	1383	1470	1559	1647	1737	1832	1936	2043
HARTLEY VALE	36	41	46	50	53	57	60	64	67	71	75	79
HAZELBROOK	1083	1150	1206	1258	1309	1355	1401	1447	1493	1540	1592	1644
HELENSBURGH	531	611	678	740	800	855	910	964	1018	1075	1136	1198

Table A.1 Cumulative customers by zone substation – Endeavour Energy – Residential (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	2961	3321	3629	3917	4201	4464	4731	5000	5275	5565	5883	6211
HOLROYD	1655	2007	2307	2587	2863	3117	3377	3638	3904	4184	4492	4808
HOMEPRIDE	383	550	693	826	958	1080	1204	1329	1457	1592	1740	1892
HORSLEY PARK	208	233	253	273	291	309	326	343	361	380	400	420
HUNTINGWOOD	234	263	287	310	332	352	373	393	413	435	458	482
HUSKISSON	1777	2027	2238	2432	2622	2796	2970	3144	3319	3501	3699	3900
ILFORD HALL	40	55	67	79	90	100	110	120	130	140	152	163
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	251	299	339	377	414	447	482	516	550	586	625	665
JASPER RD	1761	1968	2146	2311	2475	2627	2782	2938	3097	3266	3450	3641
JORDAN SPRINGS	1271	1438	1579	1710	1839	1957	2076	2195	2316	2442	2579	2720
KANDOS	299	470	614	746	874	991	1108	1224	1340	1461	1591	1723
KANGAROO VALLEY	197	241	279	314	348	378	410	441	472	504	540	575
KATOOMBA	1084	1175	1251	1321	1389	1452	1515	1577	1640	1705	1776	1848
KELLYVILLE	1173	1330	1465	1591	1715	1830	1948	2066	2186	2314	2454	2598
KEMBLA GRANGE	456	538	608	672	736	793	852	910	970	1032	1099	1169
KEMPS CREEK	271	337	393	445	497	544	593	641	690	742	799	857
KENNY STREET	12	13	14	15	15	16	17	17	18	18	19	20
KENTHURST	868	1079	1259	1428	1594	1748	1905	2062	2223	2393	2579	2771
KENTLYN	2688	3063	3381	3674	3961	4224	4490	4755	5022	5302	5606	5917
KIAMA	1475	1669	1833	1986	2135	2272	2411	2550	2690	2837	2997	3161
KINGSWOOD	1713	2081	2394	2684	2969	3231	3497	3762	4032	4314	4622	4938
KURRAJONG	836	999	1137	1264	1387	1500	1613	1725	1838	1956	2083	2213
LEABONS LANE	1057	1286	1480	1662	1840	2005	2172	2340	2510	2690	2886	3088
LENNOX	166	231	287	339	391	438	487	535	585	638	696	756
LITHGOW	1222	1420	1586	1738	1887	2022	2158	2292	2427	2567	2718	2872
LIVERPOOL 11KV	1242	1526	1768	1995	2218	2425	2636	2847	3064	3292	3542	3800
LUDDENHAM	240	358	461	557	653	743	836	930	1028	1132	1248	1369
MACQUARIE FIELDS	2343	2771	3131	3464	3789	4086	4386	4684	4985	5299	5639	5986
MALDON	1260	1559	1812	2048	2280	2493	2710	2926	3146	3378	3630	3890
MAMRE	2242	2499	2718	2921	3121	3304	3491	3677	3867	4066	4283	4506
MARAYONG	953	1162	1340	1505	1668	1818	1971	2124	2280	2443	2622	2806
MARSDEN PARK	1287	1409	1513	1608	1702	1788	1875	1962	2050	2142	2242	2345
MEADOW FLAT	89	104	116	128	139	149	159	170	180	190	201	213
MINTO	3851	4218	4528	4815	5095	5350	5608	5864	6123	6393	6685	6984
MITTAGONG	1476	1665	1826	1976	2123	2258	2395	2533	2672	2819	2979	3144
MOOREBANK	547	649	736	817	897	971	1046	1122	1199	1281	1370	1462
MOSS VALE	1258	1463	1637	1797	1954	2097	2241	2384	2528	2679	2842	3008
MOUNT OUSLEY	875	1037	1173	1298	1420	1530	1642	1751	1862	1977	2101	2226
MUNGERIE PARK	5176	5829	6385	6903	7414	7885	8365	8845	9335	9850	10415	10995
NARELLAN	3547	3896	4203	4497	4795	5079	5376	5683	6006	6357	6753	7173
NEPEAN 11KV	2482	2850	3173	3484	3799	4099	4414	4739	5082	5454	5874	6321
NEWTON	918	1002	1074	1140	1206	1267	1328	1390	1453	1519	1591	1665
NORTH EASTERN CREEK	12	14	16	17	19	20	22	23	25	26	28	30
NORTH LEPPINGTON	168	258	336	408	480	547	615	684	755	830	913	998
NORTH PARRAMATTA	563	668	759	843	927	1005	1084	1165	1247	1334	1429	1528
NORTH RICHMOND	654	775	878	972	1064	1148	1233	1317	1402	1490	1586	1684
NORTH ROCKS	849	977	1087	1189	1290	1384	1480	1577	1675	1780	1894	2013
NORTH WARRAGAMBA	650	834	990	1136	1279	1411	1544	1678	1815	1958	2115	2276
NORTH WOLLONGONG	231	298	354	406	456	502	548	593	639	686	737	789
NORTHMEAD	814	962	1089	1208	1325	1434	1545	1656	1771	1891	2024	2161
NOWRA	1388	1633	1839	2030	2216	2386	2557	2727	2899	3078	3273	3471
OAKDALE	158	238	305	368	430	487	545	603	661	723	791	861
ORAN PARK	1994	2508	2960	3393	3833	4252	4692	5147	5625	6144	6731	7354
PARKLEA	5923	6456	6911	7337	7757	8146	8543	8942	9350	9782	10255	10744
PENRITH 11KV	383	486	574	656	736	810	885	959	1035	1115	1201	1290
PLUMPTON	2546	2919	3236	3531	3821	4089	4361	4634	4911	5203	5521	5849

Table A.1 Cumulative customers by zone substation – Endeavour Energy – Residential (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	326	412	484	551	616	676	736	795	855	918	986	1055
PORT KEMBLA	834	1077	1281	1470	1654	1821	1991	2158	2328	2504	2695	2890
PORTLAND	313	346	375	401	426	449	473	495	518	542	568	595
PRESTONS	2581	2843	3068	3280	3490	3686	3887	4090	4300	4522	4768	5023
PROSPECT	1121	1198	1264	1325	1385	1442	1499	1556	1615	1677	1745	1815
QUAKERS HILL	2941	3376	3746	4090	4430	4742	5060	5379	5703	6044	6417	6801
QUARRIES	577	660	730	795	859	918	979	1039	1101	1166	1237	1310
RINGWOOD	660	738	803	863	921	975	1029	1083	1137	1193	1254	1317
RIVERSTONE	1358	1540	1695	1838	1979	2109	2240	2371	2504	2643	2796	2952
ROBERTSON	360	477	577	669	760	845	930	1016	1103	1194	1295	1398
ROOTY HILL	2442	2779	3065	3332	3594	3836	4082	4328	4579	4842	5130	5426
ROSEHILL	85	117	143	169	193	216	240	263	287	313	341	369
RUSSELL VALE	1187	1419	1615	1795	1969	2129	2288	2446	2605	2770	2948	3129
RYDALMERE	1032	1252	1440	1616	1790	1951	2115	2280	2448	2626	2822	3023
SCHOFIELDS	2629	2999	3314	3606	3895	4161	4431	4701	4977	5267	5583	5909
SEVEN HILLS	794	900	989	1073	1155	1231	1308	1385	1464	1547	1637	1731
SHELLHARBOUR	2297	2679	3002	3301	3595	3864	4136	4407	4681	4968	5281	5600
SHERWOOD	970	1104	1218	1323	1427	1522	1618	1715	1813	1916	2028	2143
SMITHFIELD	2055	2264	2440	2601	2757	2900	3043	3184	3326	3474	3633	3794
SOUTH GRANVILLE	644	805	943	1070	1196	1311	1428	1546	1665	1790	1927	2068
SOUTH LEPPINGTON	1390	1635	1844	2038	2229	2404	2583	2761	2943	3135	3344	3559
SOUTH MARSDEN PARK	306	422	521	615	709	797	888	980	1075	1177	1290	1409
SOUTH NOWRA	332	380	421	458	495	529	563	596	630	665	704	743
SOUTH WINDSOR	1277	1476	1644	1800	1952	2092	2233	2373	2515	2664	2825	2990
SOUTH WOLLONGONG	218	268	311	349	387	421	456	490	524	560	598	637
SPRINGWOOD	2006	2130	2233	2328	2420	2504	2589	2672	2756	2843	2937	3032
ST MARYS	1569	1896	2174	2432	2686	2919	3156	3393	3633	3886	4161	4444
SUSSEX INLET	644	815	960	1095	1227	1348	1471	1594	1718	1849	1990	2136
TAHMOOR	1398	1740	2031	2301	2566	2810	3058	3306	3558	3822	4111	4407
THE OAKS	435	529	611	688	765	838	913	989	1069	1155	1250	1350
TOMERONG	1152	1241	1317	1387	1455	1518	1580	1643	1706	1771	1842	1915
ULLADULLA	2450	2785	3068	3329	3583	3815	4049	4281	4515	4760	5024	5293
UNANDERRA	331	413	482	545	607	663	720	775	831	890	952	1016
WARILLA	1725	2038	2302	2547	2786	3005	3227	3447	3670	3903	4157	4416
WENTWORTH FALLS	697	765	822	874	926	974	1021	1069	1118	1168	1223	1279
WERRINGTON	1209	1493	1735	1959	2180	2383	2589	2794	3004	3224	3463	3709
WEST CASTLE HILL	1226	1436	1615	1783	1948	2101	2258	2415	2576	2746	2932	3124
WEST LIVERPOOL 11KV	1458	1707	1919	2117	2312	2492	2676	2860	3048	3246	3463	3687
WEST PARRAMATTA	11	13	15	17	19	21	23	25	27	29	31	34
WEST PENNANT HILLS	1487	1685	1854	2013	2169	2314	2462	2610	2762	2923	3099	3281
WEST WETHERILL PARK 11KV	4	4	4	4	4	4	4	4	4	5	5	5
WEST WOLLONGONG	704	867	1004	1130	1253	1364	1476	1587	1698	1814	1939	2066
WESTMEAD	95	113	128	142	155	168	181	194	208	222	238	254
WETHERILL PARK	143	148	153	157	162	165	169	173	177	181	186	190
WHALAN	1360	1495	1609	1716	1821	1917	2016	2114	2215	2320	2435	2554
WILTON	346	393	433	470	506	540	573	607	642	677	717	757
WINDSOR	618	751	863	967	1067	1160	1252	1345	1438	1535	1640	1747
WISEMANS	153	224	285	340	395	444	494	544	594	646	703	761
WOMBARRA	617	710	788	860	930	993	1057	1120	1183	1249	1320	1392
WOODPARK	36	45	53	61	68	74	81	88	95	102	110	118
YATTE YATTAH	360	517	650	774	896	1008	1122	1236	1352	1474	1607	1744
YENNORA	783	935	1063	1180	1294	1398	1503	1606	1710	1818	1935	2053
TOTAL	**186523**	**215811**	**240706**	**263848**	**286617**	**307578**	**328883**	**350190**	**371887**	**394703**	**419637**	**445282**

Table A.2 Cumulative customers by zone substation – Endeavour Energy – Commercial												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	42	47	51	55	59	63	66	70	74	78	82	87
ALBION PARK	231	259	282	303	324	343	362	381	400	420	441	463
AMBARVALE	31	35	38	41	45	48	50	53	56	60	63	66
ANZAC VILLAGE	87	99	109	118	127	136	145	153	162	172	182	193
APPIN	29	37	43	50	55	61	66	72	77	83	89	96
ARNDELL PARK	113	129	143	156	169	181	193	206	218	231	245	260
BAULKHAM HILLS 11KV	133	150	164	178	191	204	217	229	243	256	271	287
BELLA VISTA	264	299	329	357	385	411	437	463	490	518	549	580
BERRY	86	99	110	120	129	138	147	156	165	174	185	195
BLACKHEATH	50	55	59	62	66	69	72	75	78	81	85	89
BLACKMANS FLAT	21	29	36	42	48	54	59	65	70	76	83	89
BLAXLAND	104	110	114	118	122	126	130	133	137	141	145	149
BOLONG	11	14	16	18	19	21	23	24	26	28	30	31
BOMADERRY	213	237	257	276	294	311	328	344	361	379	398	417
BONNYRIGG	92	104	115	125	134	143	152	161	171	180	191	201
BOSSLEY PARK	189	204	217	228	239	249	260	270	280	290	302	313
BOW BOWING	138	160	179	196	212	228	243	258	274	290	307	325
BOWRAL	139	166	190	211	232	251	270	289	308	329	350	373
BRINGELLY	48	69	88	106	123	140	157	174	193	212	234	256
BULLI	70	91	109	126	142	157	172	187	202	218	236	254
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	79	94	106	118	130	140	151	162	173	184	197	210
CAMBRIDGE PARK	217	247	272	295	318	339	361	382	404	427	452	477
CAMPBELLTOWN	220	264	301	337	372	404	438	472	507	544	585	627
CANLEY VALE	134	152	167	181	195	207	219	232	244	258	272	286
CARRAMAR	57	70	81	91	101	110	119	128	137	147	157	167
CASTLE HILL	58	95	127	156	185	211	237	263	290	318	348	379
CASULA	105	125	141	157	172	186	200	214	229	244	260	277
CATTAI	54	67	78	89	99	108	117	126	136	145	156	167
CAWDOR	64	79	92	104	116	128	140	152	165	178	194	210
CHERITON AVENUE	145	179	208	235	262	287	313	339	366	395	426	459
CHIPPING NORTON	139	155	168	181	194	206	218	230	243	256	271	286
CLAREMONT MEADOWS	66	81	94	107	119	130	141	153	165	177	191	205
CORRIMAL	122	144	163	180	197	212	227	242	257	273	290	307
CRANEBROOK	110	132	150	167	184	200	215	231	247	264	282	300
CULBURRA	47	55	61	67	73	78	83	88	93	99	105	111
DAPTO	224	248	268	286	304	321	337	354	370	387	406	425
DARKES FOREST	2	11	19	26	33	39	46	52	59	65	73	80
DOONSIDE	155	178	198	217	235	252	269	287	304	323	343	363
DUNDAS	119	145	167	188	208	227	246	264	284	304	326	348
EAST RICHMOND	109	132	150	167	184	200	215	231	246	263	280	298
EASTERN CREEK	76	90	101	112	122	132	142	151	161	172	183	195
EDMONDSON PARK	24	30	36	41	46	50	55	59	64	69	74	80
EMU PLAINS	84	91	97	103	108	113	118	123	128	133	139	145
FAIRFIELD	162	178	192	204	217	228	239	250	262	273	286	299
FIGTREE	178	206	229	251	272	291	310	329	348	367	388	410
GERRINGONG	58	64	68	73	77	81	85	88	92	96	101	105
GLENMORE PARK	146	159	170	181	191	200	210	219	229	239	250	261
GLENORIE	31	38	43	48	53	57	62	67	72	77	82	88
GLOSSODIA	42	50	57	63	69	75	80	86	91	97	103	109
GRANVILLE	103	123	140	156	172	187	202	217	232	249	266	285
GREYSTANES	72	82	89	96	103	110	117	123	130	137	145	153
HARTLEY VALE	2	3	3	3	3	3	4	4	4	4	5	5
HAZELBROOK	63	67	70	73	76	79	81	84	87	90	92	96
HELENSBURGH	59	68	76	83	89	96	102	108	114	120	127	134

Table A.2 Cumulative customers by zone substation – Endeavour Energy – Commercial (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	218	245	268	289	310	329	349	369	389	411	434	458
HOLROYD	230	279	320	359	397	433	469	505	542	581	624	668
HOMEPRIDE	242	347	437	521	605	682	760	839	919	1004	1098	1194
HORSLEY PARK	41	46	50	54	58	62	65	68	72	76	80	84
HUNTINGWOOD	83	93	101	109	117	124	131	139	146	153	162	170
HUSKISSON	287	327	361	392	423	451	479	507	535	565	597	629
ILFORD HALL	6	8	10	12	13	15	16	18	19	21	22	24
INNER HARBOUR	16	16	17	17	17	17	17	18	18	18	18	18
JAMBEROO	17	20	23	26	28	30	33	35	37	40	42	45
JASPER RD	46	52	56	61	65	69	73	77	81	86	91	96
JORDAN SPRINGS	47	53	58	63	68	72	76	81	85	90	95	100
KANDOS	28	44	57	69	81	92	103	114	125	136	148	160
KANGAROO VALLEY	18	22	25	28	31	34	37	39	42	45	48	51
KATOOMBA	133	144	153	162	170	178	186	193	201	209	217	226
KELLYVILLE	17	19	21	23	25	26	28	30	31	33	35	37
KEMBLA GRANGE	23	27	31	34	38	41	43	46	49	53	56	60
KEMPS CREEK	66	82	96	109	121	133	145	156	168	181	195	209
KENNY STREET	86	92	97	102	106	110	115	119	123	127	132	137
KENTHURST	123	153	178	202	226	248	270	292	315	339	365	393
KENTLYN	263	299	330	359	387	413	439	464	491	518	548	578
KIAMA	126	143	157	170	183	195	206	218	230	243	257	271
KINGSWOOD	244	297	342	383	424	461	499	537	575	616	660	705
KURRAJONG	70	84	96	106	117	126	136	145	155	164	175	186
LEABONS LANE	45	55	63	71	78	85	92	99	107	114	123	131
LENNOX	123	171	213	251	289	325	361	397	434	473	516	560
LITHGOW	144	167	186	204	222	238	254	269	285	302	319	337
LIVERPOOL 11KV	303	373	432	487	542	592	644	695	748	804	865	928
LUDDENHAM	26	39	50	60	70	80	90	100	111	122	134	147
MACQUARIE FIELDS	256	303	343	379	415	447	480	513	546	580	617	655
MALDON	144	178	207	234	261	285	310	334	360	386	415	444
MAMRE	200	223	243	261	279	295	312	328	345	363	382	402
MARAYONG	121	148	171	192	213	232	251	271	290	311	334	358
MARSDEN PARK	15	17	18	19	20	21	22	23	25	26	27	28
MEADOW FLAT	10	12	13	14	16	17	18	19	20	22	23	24
MINTO	319	349	375	399	422	443	464	485	507	529	553	578
MITTAGONG	181	204	224	242	260	276	293	310	327	345	365	385
MOOREBANK	104	123	140	155	170	184	198	213	228	243	260	278
MOSS VALE	167	194	217	238	259	278	297	316	335	355	377	399
MOUNT OUSLEY	111	132	149	165	180	194	208	222	236	251	266	282
MUNGERIE PARK	465	524	574	621	667	709	752	795	839	886	936	989
NARELLAN	423	465	502	537	573	606	642	679	717	759	806	856
NEPEAN 11KV	320	368	410	450	490	529	570	612	656	704	758	816
NEWTON	245	267	286	304	322	338	354	371	387	405	424	444
NORTH EASTERN CREEK	55	65	72	80	87	94	100	107	114	121	129	137
NORTH LEPPINGTON	7	11	15	18	21	24	27	30	33	36	40	44
NORTH PARRAMATTA	133	157	179	199	218	237	255	274	294	314	337	360
NORTH RICHMOND	67	79	90	100	109	118	126	135	144	153	163	173
NORTH ROCKS	50	58	64	70	76	82	88	93	99	105	112	119
NORTH WARRAGAMBA	53	68	81	93	104	115	126	137	148	160	173	186
NORTH WOLLONGONG	120	155	184	211	237	260	284	308	332	356	383	410
NORTHMEAD	76	90	102	113	124	134	145	155	166	177	190	203
NOWRA	122	143	161	178	194	209	224	239	254	270	287	305
OAKDALE	9	14	18	22	26	29	32	36	39	43	47	51
ORAN PARK	54	68	81	92	104	116	128	140	153	167	183	200
PARKLEA	388	423	453	481	509	534	560	586	613	642	673	705
PENRITH 11KV	228	290	342	391	439	482	527	571	617	664	716	769
PLUMPTON	163	187	207	226	244	261	279	296	314	333	353	374

Table A.2 Cumulative customers by zone substation – Endeavour Energy – Commercial (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	82	103	122	139	155	170	185	200	215	231	248	265
PORT KEMBLA	92	119	142	163	183	202	221	239	258	278	299	320
PORTLAND	40	44	48	51	55	58	61	63	66	69	73	76
PRESTONS	125	138	149	159	170	179	189	199	209	220	232	244
PROSPECT	110	118	124	130	136	142	147	153	159	165	172	179
QUAKERS HILL	190	218	242	264	286	306	326	347	368	390	414	439
QUARRIES	75	86	95	103	112	119	127	135	143	152	161	170
RINGWOOD	70	78	85	91	97	103	108	114	120	126	132	139
RIVERSTONE	317	360	396	430	462	493	523	554	585	618	653	690
ROBERTSON	37	49	60	69	79	87	96	105	114	124	134	145
ROOTY HILL	295	336	371	403	435	464	494	523	554	586	620	656
ROSEHILL	91	125	154	181	207	232	257	282	308	335	365	396
RUSSELL VALE	103	123	140	156	171	185	199	213	226	241	256	272
RYDALMERE	236	286	329	369	409	446	483	521	559	600	644	690
SCHOFIELDS	138	158	175	190	205	219	233	248	262	277	294	311
SEVEN HILLS	251	285	313	339	365	389	414	438	463	489	518	547
SHELLHARBOUR	216	252	283	311	338	364	389	415	441	468	497	527
SHERWOOD	154	176	194	210	227	242	257	273	288	305	322	341
SMITHFIELD	130	143	154	165	174	183	193	201	210	220	230	240
SOUTH GRANVILLE	56	70	82	94	105	115	125	135	146	157	169	181
SOUTH LEPPINGTON	90	105	119	131	144	155	167	178	190	202	216	230
SOUTH MARSDEN PARK	39	54	66	78	90	102	113	125	137	150	165	180
SOUTH NOWRA	87	100	110	120	130	138	147	156	165	174	184	194
SOUTH WINDSOR	301	348	388	425	461	494	527	560	594	629	667	706
SOUTH WOLLONGONG	86	105	122	137	152	165	179	192	206	220	235	250
SPRINGWOOD	123	131	137	143	149	154	159	164	169	175	181	186
ST MARYS	134	162	186	208	229	249	269	290	310	332	355	379
SUSSEX INLET	29	37	44	50	56	61	67	73	78	84	91	97
TAHMOOR	102	127	149	169	188	206	224	242	261	280	301	323
THE OAKS	15	18	20	23	26	28	30	33	36	39	42	45
TOMERONG	40	43	46	48	51	53	55	57	59	62	64	67
ULLADULLA	269	305	336	365	393	418	444	469	495	522	551	580
UNANDERRA	129	161	188	213	237	259	281	303	324	347	372	397
WARILLA	116	137	155	171	187	202	217	231	246	262	279	296
WENTWORTH FALLS	51	55	60	63	67	71	74	78	81	85	89	93
WERRINGTON	232	287	333	377	419	458	498	537	577	620	666	713
WEST CASTLE HILL	95	111	125	138	150	162	174	186	199	212	226	241
WEST LIVERPOOL 11KV	234	274	308	340	371	400	430	459	489	521	556	592
WEST PARRAMATTA	132	164	192	217	243	266	290	314	339	365	393	423
WEST PENNANT HILLS	57	65	72	78	84	89	95	101	107	113	120	127
WEST WETHERILL PARK 11KV	172	175	177	179	181	183	185	187	189	191	193	195
WEST WOLLONGONG	34	41	48	54	60	65	70	76	81	87	92	99
WESTMEAD	23	27	30	33	37	40	43	46	49	52	56	60
WETHERILL PARK	163	170	175	180	185	190	194	199	203	208	213	218
WHALAN	107	118	127	136	144	151	159	167	175	183	192	202
WILTON	21	24	26	28	31	33	35	37	39	41	43	46
WINDSOR	102	124	142	159	176	191	206	221	236	252	270	287
WISEMANS	35	51	64	77	89	101	112	123	134	146	159	172
WOMBARRA	51	59	66	72	78	83	88	93	99	104	110	116
WOODPARK	108	136	160	182	203	223	244	264	285	306	330	354
YATTE YATTAH	9	12	16	19	21	24	27	30	32	35	38	42
YENNORA	143	170	194	215	236	255	274	293	312	331	353	374
TOTAL	**19237**	**22469**	**25217**	**27770**	**30281**	**32593**	**34941**	**37289**	**39679**	**42192**	**44936**	**47758**

Table A.3 Cumulative customers by zone substation – Endeavour Energy – Industrial (other)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0	0	0	0	0	0	0	0	0	0	0	0
ALBION PARK	13	14	16	17	18	19	20	21	22	23	24	26
AMBARVALE	0	0	0	0	0	0	0	0	0	0	0	0
ANZAC VILLAGE	4	5	5	6	6	7	7	7	8	8	9	9
APPIN	1	1	1	2	2	2	2	2	2	3	3	3
ARNDELL PARK	0	0	0	0	0	0	0	0	0	0	0	0
BAULKHAM HILLS 11KV	4	5	5	6	6	6	7	7	8	8	9	9
BELLA VISTA	19	21	23	26	27	29	31	33	35	37	39	41
BERRY	4	5	5	6	6	6	7	7	8	8	9	9
BLACKHEATH	3	3	3	3	4	4	4	4	4	4	5	5
BLACKMANS FLAT	1	1	1	1	2	2	2	2	2	3	3	3
BLAXLAND	7	7	7	8	8	8	8	9	9	9	9	10
BOLONG	0	0	0	0	0	0	0	0	0	0	0	0
BOMADERRY	12	14	15	16	17	18	19	20	21	22	23	24
BONNYRIGG	3	4	4	5	5	5	6	6	6	7	7	7
BOSSLEY PARK	13	14	15	15	16	17	17	18	19	20	20	21
BOW BOWING	0	0	0	0	0	0	0	0	0	0	0	0
BOWRAL	6	7	8	9	10	10	11	12	13	14	14	15
BRINGELLY	1	1	1	1	2	2	2	2	2	3	3	3
BULLI	2	3	4	4	5	5	6	6	7	7	8	8
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
CAMBRIDGE PARK	22	25	27	30	32	34	36	39	41	43	46	48
CAMPBELLTOWN	1	1	1	1	1	2	2	2	2	2	2	2
CANLEY VALE	7	8	9	10	11	11	12	13	13	14	15	16
CARRAMAR	0	0	0	0	0	0	0	0	0	0	0	0
CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
CASULA	3	4	4	5	5	6	6	7	7	7	8	8
CATTAI	0	0	0	0	0	0	0	0	0	0	0	0
CAWDOR	0	0	0	0	0	0	0	0	0	0	0	0
CHERITON AVENUE	11	14	16	18	20	22	24	26	28	31	33	36
CHIPPING NORTON	0	0	0	0	0	0	0	0	0	0	0	0
CLAREMONT MEADOWS	1	1	1	1	1	1	2	2	2	2	2	2
CORRIMAL	5	6	7	8	8	9	10	10	11	12	12	13
CRANEBROOK	7	8	9	10	11	12	13	14	15	16	17	18
CULBURRA	0	0	0	0	0	0	0	0	0	0	0	0
DAPTO	17	18	20	21	22	24	25	26	27	29	30	31
DARKES FOREST	0	0	0	0	0	0	0	0	0	0	0	0
DOONSIDE	7	9	10	10	11	12	13	14	15	16	17	18
DUNDAS	7	8	10	11	12	13	14	15	17	18	19	20
EAST RICHMOND	5	6	7	8	9	9	10	11	12	12	13	14
EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
EDMONDSON PARK	0	0	0	0	0	0	0	0	0	0	0	0
EMU PLAINS	0	0	0	0	0	0	0	0	0	0	0	0
FAIRFIELD	6	6	7	7	8	8	8	9	9	10	10	10
FIGTREE	11	13	15	16	17	18	20	21	22	23	25	26
GERRINGONG	3	3	3	3	3	3	4	4	4	4	4	5
GLENMORE PARK	12	13	14	15	16	16	17	18	19	20	20	21
GLENORIE	2	2	2	2	3	3	3	3	4	4	4	5
GLOSSODIA	0	0	0	0	0	0	1	1	1	1	1	1
GRANVILLE	2	3	3	3	4	4	4	5	5	5	6	6
GREYSTANES	0	0	0	0	0	0	0	0	0	0	0	0
HARTLEY VALE	0	0	0	0	0	0	0	0	0	0	0	0
HAZELBROOK	4	4	4	4	4	4	5	5	5	5	5	5
HELENSBURGH	4	4	5	5	6	6	6	7	7	8	8	8

Table A.3 Cumulative customers by zone substation – Endeavour Energy – Industrial (other) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	12	14	15	16	18	19	20	21	22	23	25	26
HOLROYD	16	19	22	25	28	30	33	35	38	40	43	46
HOMEPRIDE	0	0	0	0	0	0	0	0	0	0	0	0
HORSLEY PARK	1	1	1	1	1	1	1	1	1	1	1	1
HUNTINGWOOD	0	0	0	0	0	0	0	0	0	0	0	0
HUSKISSON	25	28	31	34	36	39	41	44	46	48	51	54
ILFORD HALL	0	0	0	0	0	0	1	1	1	1	1	1
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	0	0	0	0	0	0	0	0	0	0	0	0
JASPER RD	0	0	0	0	0	0	0	0	0	0	0	0
JORDAN SPRINGS	0	0	0	0	0	0	0	0	0	0	0	0
KANDOS	0	0	0	0	0	0	0	0	0	0	0	0
KANGAROO VALLEY	0	0	0	0	0	0	0	0	0	0	0	0
KATOOMBA	5	5	6	6	6	6	7	7	7	8	8	8
KELLYVILLE	0	0	0	0	0	0	0	0	0	0	0	0
KEMBLA GRANGE	0	0	0	0	0	0	0	0	0	0	0	0
KEMPS CREEK	1	1	1	2	2	2	2	2	2	3	3	3
KENNY STREET	0	0	0	0	0	0	0	0	0	0	0	0
KENTHURST	6	8	9	11	12	13	14	15	17	18	19	21
KENTLYN	25	28	31	34	36	39	41	43	46	49	51	54
KIAMA	8	9	10	11	12	13	13	14	15	16	17	17
KINGSWOOD	13	16	18	21	23	25	27	29	31	33	35	38
KURRAJONG	3	4	4	5	5	6	6	7	7	8	8	9
LEABONS LANE	0	0	0	0	0	0	0	0	0	0	0	0
LENNOX	1	1	1	2	2	2	2	3	3	3	3	4
LITHGOW	6	7	8	9	9	10	11	11	12	13	13	14
LIVERPOOL 11KV	23	29	33	38	42	46	50	54	58	62	67	72
LUDDENHAM	0	0	0	0	0	0	0	0	0	0	0	0
MACQUARIE FIELDS	19	23	26	28	31	33	36	38	41	43	46	49
MALDON	6	8	9	10	12	13	14	15	16	17	18	20
MAMRE	11	12	13	14	15	16	17	18	18	19	20	22
MARAYONG	0	0	0	0	0	0	0	0	0	0	0	0
MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
MEADOW FLAT	0	0	0	0	0	0	1	1	1	1	1	1
MINTO	15	16	17	18	19	20	21	22	23	24	25	26
MITTAGONG	8	9	10	11	11	12	13	14	14	15	16	17
MOOREBANK	0	0	0	0	0	0	0	0	0	0	0	0
MOSS VALE	7	8	9	10	11	12	13	14	15	15	16	17
MOUNT OUSLEY	5	5	6	7	7	8	9	9	10	10	11	12
MUNGERIE PARK	33	37	41	44	47	50	54	57	60	63	67	70
NARELLAN	25	28	30	32	34	36	38	41	43	46	48	51
NEPEAN 11KV	25	29	32	35	38	42	45	48	51	55	60	64
NEWTON	15	17	18	19	20	21	22	23	24	25	26	27
NORTH EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
NORTH LEPPINGTON	0	0	0	0	0	0	0	0	0	0	0	0
NORTH PARRAMATTA	4	5	5	6	6	7	7	8	9	9	10	11
NORTH RICHMOND	3	4	4	5	5	6	6	6	7	7	8	8
NORTH ROCKS	0	0	0	0	0	0	0	0	0	0	0	0
NORTH WARRAGAMBA	3	3	4	4	5	6	6	7	7	8	8	9
NORTH WOLLONGONG	5	7	8	9	11	12	13	14	15	16	17	18
NORTHMEAD	1	2	2	2	2	3	3	3	3	3	4	4
NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
OAKDALE	0	0	0	0	0	0	0	0	0	0	0	0
ORAN PARK	0	0	0	0	0	0	0	0	0	0	0	0
PARKLEA	19	21	22	23	25	26	27	29	30	31	33	34
PENRITH 11KV	0	0	0	0	0	0	0	0	0	0	0	0
PLUMPTON	13	15	16	18	19	21	22	24	25	26	28	30

Table A.3 Cumulative customers by zone substation – Endeavour Energy – Industrial (other) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	2	2	2	3	3	3	4	4	4	5	5	5
PORT KEMBLA	3	4	4	5	6	6	7	7	8	8	9	10
PORTLAND	3	3	3	4	4	4	4	5	5	5	5	5
PRESTONS	9	10	11	11	12	13	14	14	15	16	17	18
PROSPECT	0	0	0	0	0	0	0	0	0	0	0	0
QUAKERS HILL	11	12	13	15	16	17	18	19	21	22	23	24
QUARRIES	0	0	0	0	0	0	0	0	0	0	0	0
RINGWOOD	2	3	3	3	3	4	4	4	4	4	5	5
RIVERSTONE	27	30	33	36	39	42	44	47	49	52	55	58
ROBERTSON	0	0	0	0	0	0	0	0	0	0	0	0
ROOTY HILL	17	19	21	23	25	26	28	30	31	33	35	37
ROSEHILL	0	0	0	0	0	0	0	0	0	0	0	0
RUSSELL VALE	4	5	6	7	7	8	9	9	10	10	11	12
RYDALMERE	7	9	10	11	12	13	14	16	17	18	19	21
SCHOFIELDS	12	14	15	17	18	19	21	22	23	24	26	27
SEVEN HILLS	10	12	13	14	15	16	17	18	19	20	21	22
SHELLHARBOUR	10	12	14	15	16	18	19	20	21	23	24	25
SHERWOOD	12	14	15	16	18	19	20	21	23	24	25	27
SMITHFIELD	4	5	5	6	6	6	6	7	7	7	8	8
SOUTH GRANVILLE	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH LEPPINGTON	8	9	10	11	12	13	14	15	16	17	18	19
SOUTH MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH WINDSOR	13	15	16	18	19	21	22	24	25	26	28	30
SOUTH WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
SPRINGWOOD	8	8	9	9	9	10	10	10	11	11	11	12
ST MARYS	9	11	12	14	15	17	18	19	21	22	24	26
SUSSEX INLET	0	0	0	0	0	0	0	0	0	0	0	0
TAHMOOR	6	8	9	11	12	13	14	15	16	18	19	20
THE OAKS	0	0	0	0	0	0	0	0	0	0	0	0
TOMERONG	0	0	0	0	0	0	0	0	0	0	0	0
ULLADULLA	13	14	16	17	19	20	21	22	24	25	26	28
UNANDERRA	2	3	3	4	4	4	5	5	6	6	6	7
WARILLA	6	6	7	8	9	10	10	11	12	12	13	14
WENTWORTH FALLS	3	3	3	3	4	4	4	4	4	4	5	5
WERRINGTON	0	0	0	0	0	0	0	0	0	0	0	0
WEST CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
WEST LIVERPOOL 11KV	9	11	12	13	15	16	17	18	19	21	22	23
WEST PARRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
WEST PENNANT HILLS	4	5	5	6	6	7	7	7	8	8	9	9
WEST WETHERILL PARK 11KV	0	0	0	0	0	0	0	0	0	0	0	0
WEST WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
WESTMEAD	0	0	0	0	0	0	0	0	0	0	0	0
WETHERILL PARK	0	0	0	0	0	0	0	0	0	0	0	0
WHALAN	0	0	0	0	0	0	0	0	0	0	0	0
WILTON	0	0	0	0	0	0	0	0	0	0	0	0
WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0
WISEMANS	0	0	0	1	1	1	1	1	1	1	1	1
WOMBARRA	4	4	5	5	6	6	6	7	7	8	8	8
WOODPARK	0	0	0	0	0	0	0	0	0	0	0	0
YATTE YATTAH	0	0	0	0	0	0	0	0	0	0	0	0
YENNORA	1	1	1	1	1	1	1	1	1	1	2	2
TOTAL	**810**	**931**	**1034**	**1129**	**1223**	**1310**	**1398**	**1485**	**1575**	**1669**	**1771**	**1877**

Table A.4 Cumulative customers by zone substation – Endeavour Energy – Total ZSS												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	2159	2412	2629	2832	3033	3219	3409	3601	3797	4005	4234	4471
ALBION PARK	2968	3318	3614	3887	4153	4396	4640	4883	5128	5383	5660	5941
AMBARVALE	2008	2275	2501	2711	2917	3106	3299	3490	3685	3890	4113	4342
ANZAC VILLAGE	1613	1830	2016	2190	2362	2520	2682	2845	3012	3187	3380	3579
APPIN	465	588	692	788	883	969	1056	1142	1230	1321	1420	1522
ARNDELL PARK	864	991	1100	1201	1300	1392	1485	1578	1673	1773	1882	1994
BAULKHAM HILLS 11KV	1779	2008	2205	2388	2569	2736	2907	3078	3253	3438	3641	3850
BELLA VISTA	2702	3063	3371	3659	3942	4204	4471	4739	5012	5300	5616	5941
BERRY	968	1110	1231	1342	1451	1550	1650	1750	1851	1956	2070	2186
BLACKHEATH	682	745	797	846	893	936	979	1021	1064	1108	1156	1205
BLACKMANS FLAT	252	351	434	511	586	654	723	791	860	932	1009	1088
BLAXLAND	1858	1953	2032	2106	2177	2242	2307	2371	2436	2503	2575	2649
BOLONG	188	227	260	290	319	346	374	401	428	456	487	518
BOMADERRY	2028	2257	2450	2628	2801	2960	3120	3278	3439	3606	3786	3971
BONNYRIGG	2260	2567	2829	3071	3309	3528	3750	3971	4196	4432	4689	4953
BOSSLEY PARK	1722	1858	1972	2077	2178	2271	2364	2456	2548	2643	2747	2851
BOW BOWING	904	1047	1168	1280	1389	1489	1590	1690	1791	1896	2010	2127
BOWRAL	1344	1609	1833	2040	2241	2426	2612	2796	2983	3177	3388	3602
BRINGELLY	367	531	674	809	944	1070	1201	1335	1473	1622	1787	1960
BULLI	1210	1570	1875	2158	2436	2691	2950	3208	3471	3747	4049	4359
BYLONG	16	26	34	42	50	56	63	70	77	84	92	99
CABRAMATTA	686	817	929	1032	1134	1227	1321	1415	1511	1611	1721	1833
CAMBRIDGE PARK	2319	2636	2906	3156	3402	3628	3857	4086	4319	4563	4828	5101
CAMPBELLTOWN	1481	1776	2029	2267	2503	2722	2947	3175	3410	3659	3935	4223
CANLEY VALE	1897	2148	2359	2555	2746	2921	3097	3272	3449	3634	3834	4038
CARRAMAR	600	740	858	967	1072	1168	1265	1360	1456	1555	1662	1771
CASTLE HILL	673	1107	1474	1814	2146	2450	2758	3064	3373	3697	4048	4407
CASULA	2039	2424	2750	3053	3349	3622	3897	4172	4451	4743	5061	5387
CATTAI	524	652	760	860	957	1046	1136	1226	1316	1410	1513	1617
CAWDOR	1154	1423	1656	1877	2100	2308	2525	2746	2976	3224	3500	3791
CHERITON AVENUE	1296	1597	1855	2098	2340	2565	2795	3029	3269	3524	3805	4098
CHIPPING NORTON	1029	1147	1249	1344	1438	1526	1616	1707	1801	1900	2010	2124
CLAREMONT MEADOWS	1318	1622	1882	2125	2366	2589	2817	3046	3282	3530	3804	4087
CORRIMAL	1456	1720	1942	2145	2344	2524	2705	2884	3064	3251	3453	3659
CRANEBROOK	1161	1392	1589	1771	1949	2113	2279	2445	2613	2789	2980	3176
CULBURRA	1072	1240	1382	1513	1640	1757	1875	1991	2109	2232	2365	2501
DAPTO	3580	3960	4281	4576	4864	5126	5391	5653	5916	6191	6488	6791
DARKES FOREST	7	44	75	104	132	157	183	209	235	262	291	321
DOONSIDE	4159	4792	5330	5832	6325	6780	7243	7706	8178	8674	9216	9774
DUNDAS	1612	1966	2266	2546	2820	3072	3328	3584	3844	4116	4414	4719
EAST RICHMOND	803	965	1102	1228	1352	1465	1578	1692	1806	1925	2054	2186
EASTERN CREEK	90	105	118	131	143	154	166	177	189	201	215	229
EDMONDSON PARK	566	720	850	971	1090	1199	1309	1419	1531	1648	1775	1905
EMU PLAINS	1500	1627	1735	1835	1932	2020	2110	2198	2288	2381	2482	2585
FAIRFIELD	908	999	1076	1147	1216	1279	1342	1405	1468	1534	1604	1677
FIGTREE	2016	2329	2593	2836	3071	3286	3501	3714	3929	4151	4392	4636
GERRINGONG	715	782	839	891	943	990	1037	1085	1133	1183	1237	1293
GLENMORE PARK	2600	2833	3031	3215	3395	3561	3729	3897	4067	4246	4441	4641
GLENORIE	297	357	408	456	504	547	592	637	682	730	783	838
GLOSSODIA	748	890	1010	1120	1227	1325	1423	1520	1618	1720	1831	1943
GRANVILLE	775	926	1055	1176	1296	1406	1519	1632	1748	1870	2004	2143
GREYSTANES	1042	1172	1283	1385	1487	1580	1675	1770	1867	1969	2081	2196
HARTLEY VALE	39	44	48	53	57	60	64	68	72	75	79	84
HAZELBROOK	1149	1221	1281	1336	1389	1438	1487	1536	1584	1635	1689	1745
HELENSBURGH	595	684	759	828	895	956	1018	1078	1140	1203	1271	1341

Table A.4 Cumulative customers by zone substation – Endeavour Energy – Total ZSS (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	3192	3580	3913	4222	4529	4812	5100	5390	5687	5999	6342	6696
HOLROYD	1901	2305	2649	2971	3288	3580	3879	4178	4483	4806	5158	5522
HOMEPRIDE	625	897	1130	1348	1563	1762	1964	2168	2376	2596	2837	3086
HORSLEY PARK	250	280	305	328	350	371	392	413	434	456	480	505
HUNTINGWOOD	317	356	389	419	449	476	504	531	559	588	619	652
HUSKISSON	2089	2382	2630	2858	3082	3285	3491	3694	3900	4114	4347	4583
ILFORD HALL	47	63	78	91	104	115	127	138	150	162	175	188
INNER HARBOUR	16	16	17	17	17	17	17	18	18	18	18	18
JAMBEROO	268	319	362	402	442	478	514	550	587	626	667	710
JASPER RD	1807	2020	2202	2372	2540	2696	2855	3015	3179	3351	3541	3737
JORDAN SPRINGS	1318	1491	1637	1773	1906	2028	2152	2276	2401	2532	2674	2820
KANDOS	327	514	671	816	956	1083	1211	1338	1465	1597	1739	1883
KANGAROO VALLEY	215	263	304	342	379	412	446	480	514	549	588	627
KATOOMBA	1222	1324	1410	1489	1566	1636	1707	1777	1848	1921	2001	2082
KELLYVILLE	1190	1349	1486	1613	1740	1856	1976	2095	2218	2347	2489	2635
KEMBLA GRANGE	479	566	639	707	773	834	896	957	1019	1084	1155	1228
KEMPS CREEK	338	420	490	555	620	679	739	800	861	926	997	1070
KENNY STREET	98	105	111	116	122	126	131	136	141	146	151	157
KENTHURST	998	1240	1447	1641	1832	2008	2189	2370	2554	2750	2964	3184
KENTLYN	2976	3391	3742	4066	4384	4676	4970	5263	5559	5869	6205	6549
KIAMA	1610	1821	2001	2167	2330	2479	2631	2782	2935	3096	3270	3449
KINGSWOOD	1971	2394	2754	3088	3416	3717	4023	4328	4638	4963	5317	5681
KURRAJONG	910	1087	1237	1375	1509	1632	1755	1877	2000	2128	2267	2408
LEABONS LANE	1102	1340	1543	1732	1919	2090	2265	2439	2617	2804	3009	3219
LENNOX	290	404	501	592	682	765	850	935	1022	1114	1215	1319
LITHGOW	1372	1593	1780	1951	2118	2270	2422	2573	2724	2881	3051	3224
LIVERPOOL 11KV	1569	1927	2234	2519	2802	3063	3329	3596	3869	4157	4473	4799
LUDDENHAM	266	397	510	617	724	823	926	1030	1138	1254	1382	1516
MACQUARIE FIELDS	2619	3096	3499	3871	4235	4567	4902	5235	5571	5922	6302	6690
MALDON	1411	1745	2029	2293	2552	2791	3033	3275	3522	3781	4064	4354
MAMRE	2453	2734	2973	3196	3414	3615	3819	4023	4230	4448	4686	4930
MARAYONG	1075	1310	1511	1697	1881	2050	2222	2395	2570	2755	2956	3164
MARSDEN PARK	1303	1426	1531	1628	1723	1810	1898	1986	2075	2168	2269	2373
MEADOW FLAT	100	116	130	143	155	167	178	189	201	212	225	238
MINTO	4184	4583	4920	5232	5536	5813	6094	6372	6653	6946	7264	7588
MITTAGONG	1665	1878	2059	2228	2394	2546	2701	2856	3014	3179	3360	3546
MOOREBANK	651	772	875	972	1067	1155	1245	1335	1427	1524	1630	1740
MOSS VALE	1432	1666	1864	2046	2224	2387	2551	2714	2878	3049	3235	3425
MOUNT OUSLEY	991	1174	1328	1470	1607	1733	1858	1983	2108	2238	2378	2520
MUNGERIE PARK	5675	6390	7000	7568	8128	8645	9170	9697	10234	10799	11418	12054
NARELLAN	3996	4389	4735	5066	5402	5722	6057	6403	6767	7161	7607	8080
NEPEAN 11KV	2828	3247	3615	3968	4328	4669	5028	5399	5789	6213	6692	7201
NEWTON	1178	1286	1378	1463	1548	1625	1704	1783	1864	1949	2041	2137
NORTH EASTERN CREEK	68	79	88	97	106	114	122	130	139	148	157	167
NORTH LEPPINGTON	175	269	350	426	501	571	642	714	788	866	952	1042
NORTH PARRAMATTA	700	830	943	1048	1152	1248	1347	1447	1549	1657	1776	1899
NORTH RICHMOND	724	858	972	1076	1178	1271	1365	1458	1552	1650	1756	1865
NORTH ROCKS	900	1035	1151	1260	1367	1466	1568	1670	1775	1885	2006	2132
NORTH WARRAGAMBA	706	906	1075	1233	1388	1531	1677	1822	1970	2126	2296	2471
NORTH WOLLONGONG	357	460	546	626	703	774	845	915	985	1058	1137	1217
NORTHMEAD	892	1054	1193	1323	1452	1571	1692	1815	1940	2072	2217	2367
NOWRA	1510	1776	2001	2208	2410	2595	2782	2967	3154	3349	3560	3775
OAKDALE	168	252	323	390	455	516	577	638	701	767	838	912
ORAN PARK	2049	2576	3040	3485	3938	4368	4820	5287	5778	6311	6914	7554
PARKLEA	6330	6900	7387	7841	8291	8706	9131	9557	9994	10454	10961	11483
PENRITH 11KV	611	776	916	1047	1175	1292	1412	1531	1652	1779	1917	2059
PLUMPTON	2722	3120	3459	3775	4085	4371	4662	4953	5250	5562	5903	6253

Table A.4 Cumulative customers by zone substation – Endeavour Energy – Total ZSS (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	409	517	608	692	775	849	925	999	1075	1153	1238	1325
PORT KEMBLA	930	1200	1427	1637	1842	2029	2218	2405	2594	2790	3003	3220
PORTLAND	356	394	426	456	485	511	537	563	590	617	646	676
PRESTONS	2716	2991	3228	3451	3672	3878	4089	4303	4524	4758	5016	5285
PROSPECT	1232	1316	1388	1455	1522	1583	1646	1709	1774	1842	1917	1994
QUAKERS HILL	3142	3606	4001	4369	4732	5065	5405	5745	6091	6456	6854	7264
QUARRIES	653	745	824	898	971	1038	1106	1174	1244	1317	1398	1480
RINGWOOD	733	818	890	957	1022	1081	1141	1201	1261	1323	1391	1460
RIVERSTONE	1703	1931	2124	2304	2481	2643	2807	2972	3138	3313	3504	3700
ROBERTSON	398	527	636	738	839	932	1026	1121	1217	1318	1429	1542
ROOTY HILL	2755	3134	3457	3758	4054	4326	4604	4881	5164	5461	5786	6120
ROSEHILL	177	242	297	349	401	448	497	545	595	648	706	766
RUSSELL VALE	1295	1548	1761	1957	2148	2322	2496	2668	2841	3021	3215	3413
RYDALMERE	1275	1547	1779	1997	2211	2410	2613	2816	3024	3244	3485	3734
SCHOFIELDS	2780	3171	3503	3813	4118	4399	4685	4971	5262	5568	5903	6248
SEVEN HILLS	1056	1196	1315	1426	1535	1636	1738	1841	1946	2056	2176	2300
SHELLHARBOUR	2524	2943	3298	3627	3949	4245	4544	4841	5143	5458	5802	6153
SHERWOOD	1137	1293	1426	1550	1671	1783	1896	2009	2124	2244	2376	2511
SMITHFIELD	2190	2412	2599	2771	2938	3089	3242	3392	3544	3701	3870	4042
SOUTH GRANVILLE	700	876	1025	1164	1300	1426	1553	1681	1811	1947	2096	2249
SOUTH LEPPINGTON	1487	1750	1973	2180	2384	2572	2763	2954	3149	3354	3578	3808
SOUTH MARSDEN PARK	345	475	588	694	800	899	1001	1105	1212	1327	1455	1588
SOUTH NOWRA	419	480	531	579	625	667	710	752	795	839	888	937
SOUTH WINDSOR	1592	1839	2049	2243	2432	2606	2782	2957	3134	3319	3520	3725
SOUTH WOLLONGONG	304	374	432	486	539	587	635	682	730	779	833	887
SPRINGWOOD	2138	2269	2379	2480	2578	2668	2758	2847	2936	3029	3129	3230
ST MARYS	1712	2069	2372	2654	2930	3185	3444	3702	3964	4240	4541	4849
SUSSEX INLET	673	852	1004	1145	1283	1410	1538	1667	1797	1933	2081	2233
TAHMOOR	1507	1875	2189	2480	2766	3029	3296	3563	3835	4120	4431	4750
THE OAKS	450	547	631	711	791	866	943	1022	1105	1193	1292	1395
TOMERONG	1192	1284	1363	1435	1506	1570	1635	1700	1765	1833	1906	1981
ULLADULLA	2732	3105	3420	3711	3994	4253	4514	4773	5034	5306	5601	5901
UNANDERRA	463	577	673	762	848	927	1005	1083	1161	1243	1330	1419
WARILLA	1847	2181	2464	2726	2982	3216	3454	3690	3928	4178	4449	4726
WENTWORTH FALLS	751	823	884	941	997	1048	1099	1151	1203	1257	1317	1377
WERRINGTON	1442	1780	2068	2336	2599	2841	3086	3332	3581	3843	4129	4422
WEST CASTLE HILL	1321	1547	1740	1920	2099	2264	2432	2601	2775	2958	3158	3366
WEST LIVERPOOL 11KV	1701	1991	2239	2470	2698	2908	3122	3337	3557	3788	4041	4302
WEST PARRAMATTA	143	178	207	235	262	287	313	339	366	394	425	457
WEST PENNANT HILLS	1549	1755	1931	2096	2259	2410	2564	2719	2877	3044	3228	3417
WEST WETHERILL PARK 11KV	177	179	181	183	185	187	189	191	193	195	197	200
WEST WOLLONGONG	738	909	1052	1184	1313	1429	1547	1663	1779	1900	2031	2164
WESTMEAD	118	139	158	175	192	208	224	240	257	274	294	314
WETHERILL PARK	306	318	328	338	347	355	363	372	380	389	398	408
WHALAN	1468	1613	1736	1851	1965	2069	2175	2281	2389	2503	2628	2755
WILTON	367	416	459	498	537	572	608	644	680	718	760	802
WINDSOR	720	875	1005	1125	1243	1350	1458	1566	1674	1787	1909	2034
WISEMANS	188	275	350	418	485	546	607	668	730	794	863	934
WOMBARRA	673	774	859	937	1013	1082	1151	1220	1289	1361	1438	1517
WOODPARK	145	182	213	242	271	298	325	352	379	408	440	473
YATTE YATTAH	369	529	665	792	917	1032	1149	1265	1384	1509	1646	1786
YENNORA	927	1106	1257	1396	1531	1654	1778	1900	2023	2151	2289	2429
TOTAL	**206570**	**239211**	**266957**	**292747**	**318122**	**341480**	**365221**	**388965**	**413141**	**438564**	**466345**	**494917**

Table A.5 Cumulative capacity by zone substation – Endeavour Energy – Residential												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	10395	11852	13110	14297	15485	16591	17727	18877	20062	21323	22718	24170
ALBION PARK	14889	16562	17988	19315	20624	21824	23039	24250	25478	26764	28164	29598
AMBARVALE	8767	10349	11705	12977	14238	15402	16590	17781	18997	20279	21684	23133
ANZAC VILLAGE	7392	8557	9562	10510	11457	12337	13239	14150	15086	16080	17174	18310
APPIN	2490	3161	3734	4268	4796	5282	5774	6266	6766	7291	7864	8451
ARNDELL PARK	3590	4422	5138	5811	6481	7100	7734	8371	9023	9713	10470	11253
BAULKHAM HILLS 11KV	7642	9069	10300	11461	12620	13696	14799	15912	17056	18268	19605	20990
BELLA VISTA	13000	15137	16978	18711	20440	22043	23686	25341	27039	28837	30817	32867
BERRY	4695	5537	6256	6927	7589	8197	8814	9430	10055	10712	11427	12161
BLACKHEATH	2627	2957	3238	3499	3755	3989	4225	4459	4696	4944	5212	5485
BLACKMANS FLAT	1155	1795	2340	2848	3347	3806	4269	4731	5200	5690	6223	6769
BLAXLAND	8069	8675	9188	9665	10132	10560	10992	11420	11853	12304	12794	13294
BOLONG	855	1085	1281	1463	1643	1808	1976	2143	2312	2489	2682	2880
BOMADERRY	9059	10253	11270	12217	13152	14009	14878	15744	16622	17543	18545	19572
BONNYRIGG	9422	11005	12361	13632	14892	16056	17242	18431	19646	20926	22329	23775
BOSSLEY PARK	7900	8622	9234	9802	10360	10869	11383	11893	12408	12946	13528	14122
BOW BOWING	3812	4283	4685	5059	5429	5768	6112	6455	6804	7169	7568	7976
BOWRAL	6219	7886	9307	10631	11938	13137	14352	15564	16794	18083	19487	20926
BRINGELLY	2281	3178	3961	4710	5467	6181	6923	7683	8475	9328	10283	11290
BULLI	5409	7353	9018	10577	12124	13552	15008	16470	17963	19539	21268	23054
BYLONG	74	112	144	174	203	230	257	284	312	340	371	402
CABRAMATTA	2783	3707	4499	5241	5976	6655	7346	8039	8747	9493	10309	11151
CAMBRIDGE PARK	11028	12455	13679	14826	15964	17015	18087	19162	20260	21417	22685	23992
CAMPBELLTOWN	6200	7938	9443	10870	12301	13639	15020	16423	17874	19426	21150	22954
CANLEY VALE	7475	8950	10207	11379	12535	13597	14674	15749	16841	17986	19234	20514
CARRAMAR	2492	3339	4058	4725	5380	5979	6583	7183	7790	8423	9109	9809
CASTLE HILL	3331	5980	8243	10357	12446	14368	16320	18271	20256	22341	24617	26954
CASULA	9598	11535	13194	14747	16285	17703	19147	20594	22068	23621	25320	27069
CATTAI	3508	4561	5460	6298	7125	7885	8656	9425	10206	11026	11919	12835
CAWDOR	5954	7725	9277	10763	12269	13692	15176	16700	18292	20012	21942	23982
CHERITON AVENUE	6107	7661	9009	10287	11571	12771	14010	15268	16569	17958	19501	21112
CHIPPING NORTON	4564	5224	5796	6338	6881	7389	7912	8443	8992	9577	10226	10903
CLAREMONT MEADOWS	6966	9453	11600	13628	15654	17541	19480	21440	23460	25607	27981	30451
CORRIMAL	6512	7769	8836	9827	10800	11690	12588	13480	14383	15324	16346	17389
CRANEBROOK	6047	7425	8606	9711	10805	11815	12843	13873	14923	16029	17239	18485
CULBURRA	4397	5507	6453	7335	8204	9001	9809	10614	11432	12288	13220	14174
DAPTO	16778	18922	20747	22444	24115	25647	27196	28738	30301	31936	33714	35533
DARKES FOREST	58	184	292	392	491	582	674	767	860	958	1065	1174
DOONSIDE	16762	19960	22709	25293	27864	30244	32677	35123	37628	40275	43183	46188
DUNDAS	6712	8749	10495	12133	13759	15261	16792	18330	19900	21556	23372	25245
EAST RICHMOND	3949	4336	4666	4974	5278	5557	5840	6122	6409	6710	7037	7374
EASTERN CREEK	84	96	107	117	127	137	146	156	166	176	188	200
EDMONDSON PARK	3793	4736	5543	6299	7047	7737	8440	9144	9862	10617	11444	12295
EMU PLAINS	7059	7798	8427	9014	9592	10122	10659	11195	11738	12308	12927	13562
FAIRFIELD	3444	3869	4230	4565	4895	5197	5503	5806	6114	6435	6784	7141
FIGTREE	9335	10695	11850	12921	13974	14937	15909	16875	17851	18870	19975	21103
GERRINGONG	3119	3376	3596	3801	4004	4191	4381	4570	4764	4967	5189	5416
GLENMORE PARK	13818	15339	16643	17865	19078	20199	21341	22487	23657	24890	26242	27635
GLENORIE	2021	2408	2741	3055	3368	3658	3956	4257	4565	4892	5252	5625
GLOSSODIA	4512	5716	6740	7692	8629	9487	10355	11218	12093	13007	14000	15016
GRANVILLE	3095	4038	4852	5619	6385	7097	7827	8565	9323	10127	11014	11934
GREYSTANES	4235	4874	5423	5939	6453	6928	7415	7904	8405	8935	9518	10121
HARTLEY VALE	159	177	193	207	221	234	247	260	273	287	302	317
HAZELBROOK	4430	4832	5173	5489	5800	6084	6371	6655	6943	7242	7568	7899
HELENSBURGH	2635	3083	3463	3816	4163	4480	4800	5118	5440	5775	6139	6511

Table A.5 Cumulative capacity by zone substation – Endeavour Energy – Residential (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	15755	17601	19193	20693	22191	23581	25008	26446	27924	29491	31218	33009
HOLROYD	8595	11003	13077	15030	16977	18783	20634	22499	24412	26440	28673	30986
HOMEPRIDE	1575	2092	2537	2957	3377	3766	4166	4569	4984	5423	5908	6410
HORSLEY PARK	1927	2008	2078	2143	2207	2266	2326	2386	2447	2511	2582	2654
HUNTINGWOOD	1218	1397	1550	1692	1833	1962	2094	2225	2358	2498	2651	2808
HUSKISSON	8834	10047	11080	12043	12992	13863	14746	15626	16518	17453	18471	19514
ILFORD HALL	232	328	410	485	560	628	696	764	833	904	982	1061
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	1444	1803	2110	2397	2681	2943	3208	3474	3745	4029	4340	4659
JASPER RD	7952	8993	9893	10742	11590	12379	13189	14007	14848	15742	16727	17749
JORDAN SPRINGS	7328	8304	9139	9921	10695	11408	12135	12862	13603	14383	15237	16115
KANDOS	1446	2637	3647	4584	5503	6344	7191	8032	8882	9768	10728	11707
KANGAROO VALLEY	951	1186	1386	1573	1757	1925	2096	2267	2440	2621	2818	3020
KATOOMBA	4631	5126	5548	5940	6326	6680	7039	7396	7757	8136	8547	8968
KELLYVILLE	6191	7279	8219	9105	9990	10813	11658	12511	13387	14317	15343	16407
KEMBLA GRANGE	2863	3457	3965	4440	4910	5342	5783	6223	6672	7145	7663	8196
KEMPS CREEK	2028	2441	2792	3118	3440	3739	4044	4350	4665	4997	5362	5740
KENNY STREET	75	81	85	89	93	96	100	103	107	111	115	119
KENTHURST	6939	8920	10629	12240	13847	15341	16872	18418	20005	21688	23542	25465
KENTLYN	12951	14992	16735	18364	19974	21456	22962	24467	25998	27607	29363	31168
KIAMA	7233	8388	9376	10301	11217	12062	12922	13783	14662	15586	16597	17637
KINGSWOOD	8760	10808	12564	14210	15843	17351	18888	20430	22004	23664	25482	27356
KURRAJONG	4980	6365	7544	8640	9719	10707	11708	12703	13711	14766	15913	17086
LEABONS LANE	4568	5927	7095	8193	9285	10296	11330	12370	13434	14559	15795	17072
LENNOX	744	853	946	1035	1123	1204	1288	1373	1460	1552	1654	1760
LITHGOW	6262	7466	8489	9438	10370	11222	12082	12937	13801	14702	15680	16678
LIVERPOOL 11KV	6406	6245	6107	5976	5846	5725	5601	5476	5347	5211	5061	4905
LUDDENHAM	1857	2982	3962	4886	5809	6675	7574	8491	9444	10468	11611	12812
MACQUARIE FIELDS	11541	13595	15346	16978	18589	20069	21569	23065	24585	26179	27915	29695
MALDON	7662	10213	12402	14456	16496	18383	20308	22242	24219	26307	28597	30962
MAMRE	11032	12691	14114	15450	16776	18002	19254	20511	21795	23151	24638	26172
MARAYONG	4509	5918	7129	8268	9400	10449	11521	12599	13702	14868	16150	17474
MARSDEN PARK	9354	10106	10744	11334	11912	12444	12986	13528	14081	14662	15298	15952
MEADOW FLAT	480	584	672	754	834	907	981	1055	1129	1206	1290	1376
MINTO	18361	20417	22169	23804	25416	26897	28398	29896	31417	33012	34749	36530
MITTAGONG	7446	8732	9837	10873	11903	12855	13827	14803	15801	16854	18010	19203
MOOREBANK	3136	3902	4563	5186	5808	6385	6977	7575	8188	8838	9554	10297
MOSS VALE	7141	8406	9484	10489	11480	12390	13312	14231	15164	16142	17207	18298
MOUNT OUSLEY	4404	5462	6360	7194	8013	8761	9518	10268	11028	11820	12680	13557
MUNGERIE PARK	32043	35781	38998	42024	45036	47829	50686	53561	56509	59627	63056	66603
NARELLAN	20559	22653	24507	26303	28145	29904	31758	33682	35715	37933	40449	43133
NEPEAN 11KV	14997	17953	20573	23115	25724	28219	30851	33585	36477	39635	43219	47047
NEWTON	5157	5846	6439	6996	7549	8062	8586	9114	9653	10224	10850	11498
NORTH EASTERN CREEK	72	83	92	101	109	117	126	134	142	151	161	171
NORTH LEPPINGTON	1076	1784	2396	2975	3555	4095	4652	5216	5797	6416	7101	7815
NORTH PARRAMATTA	3098	3933	4655	5338	6022	6659	7314	7978	8662	9389	10193	11029
NORTH RICHMOND	4210	5249	6135	6960	7773	8519	9274	10027	10791	11591	12462	13354
NORTH ROCKS	3839	4650	5350	6011	6672	7287	7918	8557	9214	9911	10681	11481
NORTH WARRAGAMBA	4149	5778	7176	8489	9795	11003	12237	13478	14748	16091	17565	19089
NORTH WOLLONGONG	1391	1716	1992	2249	2501	2732	2964	3195	3429	3673	3937	4208
NORTHMEAD	3734	4666	5471	6231	6990	7696	8422	9155	9909	10709	11593	12510
NOWRA	6742	8317	9659	10910	12144	13277	14426	15572	16735	17954	19282	20643
OAKDALE	843	1310	1711	2087	2461	2807	3161	3517	3881	4265	4687	5124
ORAN PARK	13126	17675	21709	25622	29638	33477	37529	41736	46183	51040	56550	62434
PARKLEA	32654	35749	38419	40938	43452	45790	48188	50611	53101	55746	58663	61693
PENRITH 11KV	1817	2315	2742	3142	3539	3906	4280	4654	5037	5441	5883	6338
PLUMPTON	11229	13113	14732	16254	17767	19168	20601	22041	23515	25073	26784	28552

Table A.5 Cumulative capacity by zone substation – Endeavour Energy – Residential (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	1497	1837	2126	2395	2660	2903	3150	3395	3643	3904	4187	4477
PORT KEMBLA	4104	5440	6577	7637	8681	9639	10609	11576	12556	13583	14701	15845
PORTLAND	1698	1969	2199	2412	2622	2814	3007	3200	3394	3597	3817	4041
PRESTONS	13487	15220	16724	18150	19583	20923	22307	23713	25167	26720	28445	30248
PROSPECT	5268	5798	6256	6688	7119	7519	7930	8345	8772	9224	9724	10242
QUAKERS HILL	14388	16900	19059	21089	23108	24978	26889	28812	30781	32862	35149	37512
QUARRIES	2625	3046	3408	3749	4088	4402	4724	5048	5380	5732	6118	6518
RINGWOOD	3382	3937	4411	4852	5287	5687	6092	6495	6905	7335	7802	8281
RIVERSTONE	8928	9424	9850	10248	10643	11008	11380	11753	12134	12536	12976	13429
ROBERTSON	2153	2835	3422	3973	4521	5029	5549	6071	6606	7171	7792	8434
ROOTY HILL	12543	14695	16545	18283	20012	21612	23248	24893	26577	28356	30311	32330
ROSEHILL	371	575	750	916	1082	1236	1394	1554	1718	1892	2084	2283
RUSSELL VALE	5712	7090	8259	9345	10412	11388	12372	13350	14339	15372	16491	17634
RYDALMERE	5335	6686	7852	8952	10050	11070	12118	13175	14261	15413	16684	18002
SCHOFIELDS	16830	19881	22504	24969	27420	29690	32010	34343	36732	39256	42029	44895
SEVEN HILLS	4106	4399	4651	4888	5124	5343	5567	5792	6022	6266	6534	6811
SHELLHARBOUR	11334	13493	15339	17066	18774	20348	21949	23551	25182	26898	28772	30700
SHERWOOD	4725	5411	5998	6548	7094	7598	8113	8629	9156	9713	10323	10953
SMITHFIELD	10102	11385	12474	13484	14475	15381	16296	17203	18120	19077	20114	21172
SOUTH GRANVILLE	3069	4075	4937	5747	6551	7295	8055	8818	9598	10422	11327	12262
SOUTH LEPPINGTON	9259	11303	13057	14704	16340	17854	19401	20956	22548	24231	26081	27994
SOUTH MARSDEN PARK	2164	3275	4233	5138	6042	6891	7772	8672	9607	10613	11735	12914
SOUTH NOWRA	2064	2299	2500	2687	2871	3040	3211	3382	3555	3737	3935	4137
SOUTH WINDSOR	8034	9865	11414	12847	14250	15541	16853	18164	19499	20901	22433	24006
SOUTH WOLLONGONG	1235	1416	1569	1712	1852	1980	2109	2237	2367	2502	2649	2799
SPRINGWOOD	9022	9854	10559	11214	11857	12445	13038	13627	14222	14843	15516	16204
ST MARYS	7215	8908	10361	11724	13077	14328	15604	16885	18194	19576	21090	22652
SUSSEX INLET	2815	3584	4242	4859	5470	6033	6608	7183	7770	8388	9064	9760
TAHMOOR	7423	10099	12394	14548	16687	18663	20681	22706	24776	26961	29357	31831
THE OAKS	2674	3461	4149	4807	5474	6102	6757	7428	8129	8885	9732	10627
TOMERONG	5395	5897	6324	6722	7114	7475	7839	8203	8572	8959	9380	9811
ULLADULLA	11396	13000	14366	15639	16893	18044	19209	20371	21549	22783	24127	25502
UNANDERRA	2064	2451	2779	3084	3384	3658	3934	4209	4487	4777	5091	5412
WARILLA	7931	9669	11154	12542	13913	15176	16459	17741	19045	20416	21912	23449
WENTWORTH FALLS	2967	3334	3648	3941	4231	4498	4770	5042	5319	5610	5928	6255
WERRINGTON	6368	7600	8656	9648	10632	11543	12472	13404	14357	15363	16466	17604
WEST CASTLE HILL	6597	7955	9127	10233	11338	12365	13419	14484	15578	16739	18020	19350
WEST LIVERPOOL 11KV	6637	7902	8991	10017	11040	11989	12961	13940	14945	16010	17181	18395
WEST PARRAMATTA	40	54	67	78	89	100	110	121	132	144	157	171
WEST PENNANT HILLS	7664	8857	9887	10859	11829	12732	13658	14594	15556	16577	17703	18872
WEST WETHERILL PARK 11KV	39	40	40	40	41	41	41	41	42	42	42	42
WEST WOLLONGONG	3373	4310	5106	5845	6570	7234	7903	8569	9241	9943	10705	11482
WESTMEAD	254	306	352	394	437	477	518	559	602	647	697	749
WETHERILL PARK	946	988	1024	1056	1088	1117	1147	1176	1206	1237	1271	1306
WHALAN	6616	7376	8030	8644	9255	9821	10399	10981	11576	12205	12897	13611
WILTON	1937	2245	2508	2755	2999	3225	3455	3685	3921	4168	4439	4719
WINDSOR	4220	5035	5723	6358	6977	7546	8122	8696	9279	9889	10554	11235
WISEMANS	890	1115	1306	1484	1659	1820	1983	2146	2310	2483	2671	2864
WOMBARRA	2812	3365	3835	4270	4699	5090	5486	5878	6275	6690	7139	7598
WOODPARK	282	364	432	494	554	609	665	722	780	842	909	979
YATTE YATTAH	1631	2142	2581	2993	3402	3781	4168	4557	4954	5374	5835	6312
YENNORA	3741	4713	5539	6305	7059	7748	8444	9136	9836	10567	11360	12171
TOTAL	**969612**	**1148468**	**1302068**	**1446312**	**1589694**	**1722432**	**1858116**	**1994591**	**2134358**	**2282174**	**2444649**	**2612723**

Table A.6 Cumulative capacity by zone substation – Endeavour Energy – Commercial												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	206	211	216	219	223	227	231	234	238	242	247	251
ALBION PARK	1265	1566	1819	2053	2281	2414	2548	2680	2795	2914	3043	3175
AMBARVALE	136	185	227	256	284	310	334	357	381	406	433	461
ANZAC VILLAGE	423	470	510	547	584	619	653	689	725	762	804	847
APPIN	167	253	325	391	456	489	522	554	587	622	659	697
ARNDELL PARK	538	571	599	625	651	675	700	724	749	775	803	832
BAULKHAM HILLS 11KV	617	669	712	753	794	831	869	908	947	988	1034	1080
BELLA VISTA	1418	1701	1942	2166	2388	2593	2801	3010	3224	3449	3695	3949
BERRY	462	614	711	800	888	958	1030	1101	1173	1248	1329	1412
BLACKHEATH	209	223	235	245	256	265	275	284	293	303	314	325
BLACKMANS FLAT	103	111	118	125	131	136	142	148	153	159	165	172
BLAXLAND	482	552	610	664	716	745	774	803	832	863	895	928
BOLONG	55	81	103	123	143	161	179	197	216	235	255	276
BOMADERRY	1070	1359	1602	1826	2045	2245	2447	2646	2848	3059	3287	3519
BONNYRIGG	400	550	677	796	902	1000	1099	1198	1298	1404	1519	1637
BOSSLEY PARK	983	1176	1339	1489	1634	1766	1899	2030	2161	2298	2445	2595
BOW BOWING	688	952	1174	1379	1580	1763	1948	2131	2317	2510	2720	2934
BOWRAL	721	1023	1278	1513	1742	1914	2087	2259	2432	2613	2809	3009
BRINGELLY	343	580	785	979	1173	1355	1544	1735	1934	2148	2385	2635
BULLI	335	523	683	831	976	1110	1201	1291	1383	1479	1584	1692
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	360	405	443	479	513	545	578	610	643	677	715	753
CAMBRIDGE PARK	1150	1448	1700	1934	2164	2376	2590	2804	3022	3250	3499	3754
CAMPBELLTOWN	1083	1346	1572	1783	1994	2190	2391	2594	2803	3025	3271	3527
CANLEY VALE	573	626	671	713	753	790	828	865	903	942	984	1028
CARRAMAR	260	313	357	398	438	475	511	547	583	621	661	702
CASTLE HILL	313	649	934	1197	1454	1689	1927	2164	2404	2654	2926	3204
CASULA	521	738	923	1094	1261	1415	1571	1726	1884	2049	2229	2413
CATTAI	403	549	671	784	895	996	1098	1200	1302	1409	1525	1643
CAWDOR	349	528	683	830	977	1116	1260	1407	1560	1724	1908	2100
CHERITON AVENUE	778	1182	1530	1857	2181	2483	2793	3106	3429	3772	4150	4543
CHIPPING NORTON	710	806	888	965	1041	1112	1185	1259	1334	1415	1503	1595
CLAREMONT MEADOWS	368	414	453	489	526	559	593	628	663	701	742	785
CORRIMAL	599	864	1088	1293	1492	1674	1857	2037	2218	2407	2610	2816
CRANEBROOK	635	832	999	1154	1306	1446	1587	1728	1871	2020	2183	2350
CULBURRA	203	226	245	262	279	294	310	326	341	357	375	393
DAPTO	1126	1316	1477	1624	1769	1900	2032	2163	2296	2433	2582	2733
DARKES FOREST	19	56	87	116	144	169	195	221	247	274	303	333
DOONSIDE	649	766	867	960	1052	1136	1222	1308	1396	1488	1589	1693
DUNDAS	537	616	682	744	805	861	917	974	1031	1092	1158	1225
EAST RICHMOND	628	893	1117	1324	1526	1711	1897	2082	2269	2464	2676	2892
EASTERN CREEK	490	517	540	561	582	601	621	640	660	681	704	728
EDMONDSON PARK	166	237	297	353	408	458	509	559	611	665	723	783
EMU PLAINS	419	498	565	626	686	740	795	850	905	963	1025	1088
FAIRFIELD	752	801	843	880	917	951	985	1018	1052	1087	1125	1163
FIGTREE	912	1245	1525	1782	2032	2260	2489	2715	2942	3179	3434	3693
GERRINGONG	278	322	358	393	426	457	488	519	550	583	618	655
GLENMORE PARK	827	971	1093	1206	1318	1420	1524	1628	1734	1844	1965	2088
GLENORIE	239	314	379	440	499	554	610	667	724	785	852	920
GLOSSODIA	269	373	461	541	620	691	763	835	906	981	1062	1144
GRANVILLE	476	557	625	690	753	812	872	932	994	1059	1130	1204
GREYSTANES	317	353	384	412	440	466	493	519	546	575	606	638
HARTLEY VALE	10	13	16	19	22	25	27	30	32	35	38	41
HAZELBROOK	257	273	286	298	310	321	332	342	353	364	376	388
HELENSBURGH	295	348	393	435	475	512	548	585	621	659	700	742

Table A.6 Cumulative capacity by zone substation – Endeavour Energy – Commercial (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	1162	1562	1903	2221	2535	2826	3122	3420	3724	4045	4397	4760
HOLROYD	1193	1340	1465	1581	1696	1802	1911	2019	2130	2247	2375	2507
HOMEPRIDE	994	1627	2168	2673	3172	3633	4104	4577	5061	5571	6131	6708
HORSLEY PARK	384	438	484	526	567	605	643	681	720	760	804	849
HUNTINGWOOD	430	542	636	724	810	895	981	1067	1154	1244	1343	1443
HUSKISSON	1425	2030	2438	2814	3181	3517	3855	4191	4529	4883	5265	5655
ILFORD HALL	34	58	78	96	114	131	147	163	179	196	214	233
INNER HARBOUR	38	40	42	43	44	45	46	48	49	50	51	52
JAMBEROO	98	117	134	149	164	173	183	192	201	211	222	232
JASPER RD	209	312	401	484	566	641	719	796	876	960	1052	1148
JORDAN SPRINGS	269	361	439	512	582	647	713	779	845	915	991	1069
KANDOS	135	214	281	343	402	457	511	565	619	675	736	797
KANGAROO VALLEY	85	109	129	148	166	177	188	199	210	222	234	247
KATOOMBA	567	667	751	828	903	972	1041	1110	1179	1251	1329	1408
KELLYVILLE	89	109	127	143	159	174	189	204	220	236	254	273
KEMBLA GRANGE	146	171	193	212	232	250	268	285	304	323	343	364
KEMPS CREEK	495	616	719	814	909	996	1084	1173	1263	1358	1462	1569
KENNY STREET	521	540	555	570	583	596	609	621	634	647	661	675
KENTHURST	983	1432	1738	2024	2307	2568	2835	3102	3376	3664	3981	4307
KENTLYN	1265	1814	2155	2470	2779	3061	3347	3631	3919	4220	4546	4880
KIAMA	619	719	803	881	958	1029	1100	1171	1243	1319	1401	1485
KINGSWOOD	1250	2197	3000	3745	4478	5151	5833	6514	7207	7933	8724	9535
KURRAJONG	419	460	495	527	558	586	615	643	672	701	733	766
LEABONS LANE	194	233	266	297	327	355	384	412	441	472	505	539
LENNOX	552	1278	1775	2238	2696	3119	3552	3986	4429	4898	5412	5943
LITHGOW	736	875	993	1100	1205	1300	1396	1490	1586	1684	1791	1899
LIVERPOOL 11KV	1564	2258	2850	3402	3948	4453	4967	5484	6012	6569	7179	7809
LUDDENHAM	200	289	366	439	511	579	649	720	794	872	959	1050
MACQUARIE FIELDS	1263	1964	2556	2993	3420	3811	4204	4595	4990	5402	5849	6305
MALDON	875	1387	1822	2091	2356	2600	2847	3095	3346	3611	3899	4196
MAMRE	985	1100	1197	1288	1377	1442	1509	1576	1643	1714	1792	1872
MARAYONG	575	974	1314	1630	1859	2069	2283	2497	2716	2945	3196	3454
MARSDEN PARK	112	126	139	150	162	172	182	193	203	214	226	238
MEADOW FLAT	54	80	101	120	135	149	163	177	191	205	220	236
MINTO	1520	1824	2081	2318	2549	2761	2975	3186	3401	3624	3866	4113
MITTAGONG	911	1097	1254	1401	1545	1661	1778	1896	2016	2141	2279	2420
MOOREBANK	595	884	1131	1362	1590	1800	2015	2230	2451	2683	2938	3200
MOSS VALE	947	1356	1702	2021	2332	2616	2903	3187	3475	3774	4099	4430
MOUNT OUSLEY	558	743	898	1041	1180	1306	1433	1558	1684	1815	1956	2100
MUNGERIE PARK	2881	3527	4077	4589	5095	5561	6035	6510	6994	7504	8062	8637
NARELLAN	2455	3081	3630	4156	4691	5199	5732	6282	6860	7488	8196	8949
NEPEAN 11KV	1936	2221	2471	2711	2955	3110	3273	3441	3617	3810	4027	4257
NEWTON	1375	1420	1458	1494	1529	1561	1594	1627	1661	1696	1734	1774
NORTH EASTERN CREEK	331	359	382	404	426	446	466	486	507	529	553	577
NORTH LEPPINGTON	47	106	157	205	240	272	305	338	372	408	448	489
NORTH PARRAMATTA	730	804	868	928	987	1060	1135	1210	1288	1370	1460	1553
NORTH RICHMOND	432	618	776	921	1063	1192	1322	1451	1582	1718	1865	2015
NORTH ROCKS	227	235	242	248	254	259	265	271	276	283	289	296
NORTH WARRAGAMBA	339	429	506	577	647	701	756	810	866	925	989	1054
NORTH WOLLONGONG	722	1242	1680	2082	2369	2630	2892	3151	3412	3682	3975	4271
NORTHMEAD	350	420	479	535	590	641	693	745	799	855	917	981
NOWRA	592	914	1186	1436	1681	1905	2131	2355	2581	2817	3073	3334
OAKDALE	50	112	164	213	261	305	350	395	440	488	541	595
ORAN PARK	357	427	489	548	608	665	725	786	852	922	1002	1087
PARKLEA	2142	2666	3114	3533	3946	4329	4615	4903	5198	5509	5850	6203
PENRITH 11KV	1082	2009	2795	3525	4242	4901	5435	5969	6511	7079	7699	8334
PLUMPTON	718	884	1026	1158	1288	1408	1530	1652	1776	1906	2049	2195

Table A.6 Cumulative capacity by zone substation – Endeavour Energy – Commercial (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	376	636	855	1057	1254	1434	1615	1794	1975	2164	2368	2576
PORT KEMBLA	455	670	851	1018	1181	1330	1480	1629	1779	1935	2105	2277
PORTLAND	218	252	281	308	334	358	381	405	429	453	480	507
PRESTONS	655	770	868	961	1053	1157	1265	1373	1485	1604	1735	1872
PROSPECT	518	548	574	598	622	649	678	706	735	765	799	833
QUAKERS HILL	928	1069	1188	1299	1408	1509	1612	1715	1819	1929	2050	2173
QUARRIES	341	427	500	567	634	696	759	822	886	953	1027	1103
RINGWOOD	356	446	521	591	659	721	783	845	908	973	1044	1117
RIVERSTONE	2086	2597	3030	3432	3827	4190	4558	4925	5298	5690	6117	6554
ROBERTSON	223	277	323	367	409	448	488	528	568	611	658	706
ROOTY HILL	1517	1721	1894	2055	2214	2360	2509	2657	2809	2968	3143	3322
ROSEHILL	398	499	585	666	746	819	895	971	1048	1130	1220	1312
RUSSELL VALE	496	739	943	1130	1312	1478	1645	1809	1975	2147	2333	2521
RYDALMERE	1218	1369	1498	1619	1738	1848	1960	2073	2189	2311	2445	2583
SCHOFIELDS	887	1043	1175	1299	1420	1532	1646	1760	1876	1998	2132	2269
SEVEN HILLS	1299	1432	1545	1651	1755	1851	1948	2046	2146	2251	2365	2483
SHELLHARBOUR	1067	1606	2062	2485	2899	3279	3663	4045	4433	4838	5279	5731
SHERWOOD	751	1071	1342	1593	1840	2067	2297	2527	2761	3006	3274	3550
SMITHFIELD	639	785	907	1019	1128	1254	1381	1506	1632	1762	1903	2046
SOUTH GRANVILLE	268	291	310	328	346	362	378	395	411	429	448	468
SOUTH LEPPINGTON	597	835	1036	1224	1408	1578	1751	1924	2100	2285	2487	2696
SOUTH MARSDEN PARK	276	497	688	867	1047	1215	1389	1565	1747	1942	2159	2385
SOUTH NOWRA	540	680	797	906	1011	1108	1205	1302	1400	1501	1611	1724
SOUTH WINDSOR	1896	2178	2416	2636	2852	3050	3249	3448	3649	3860	4088	4322
SOUTH WOLLONGONG	485	780	1028	1256	1477	1679	1882	2082	2283	2493	2719	2948
SPRINGWOOD	555	585	611	634	657	677	698	719	739	761	784	807
ST MARYS	616	1034	1390	1721	2045	2344	2647	2950	3258	3582	3934	4297
SUSSEX INLET	128	214	287	355	421	471	521	572	623	676	734	794
TAHMOOR	544	845	1100	1337	1571	1785	2003	2221	2442	2675	2929	3189
THE OAKS	89	102	113	123	133	143	153	163	174	185	198	212
TOMERONG	187	206	222	236	251	264	279	294	309	325	343	360
ULLADULLA	1250	1654	1995	2309	2616	2896	3179	3458	3741	4035	4354	4679
UNANDERRA	805	901	982	1056	1129	1194	1260	1326	1391	1459	1533	1608
WARILLA	533	847	1113	1261	1406	1538	1672	1805	1940	2081	2234	2391
WENTWORTH FALLS	215	289	351	408	465	495	527	558	590	623	659	695
WERRINGTON	1224	2043	2740	3386	4022	4607	5201	5557	5919	6300	6714	7140
WEST CASTLE HILL	509	623	719	810	899	982	1067	1152	1238	1330	1431	1535
WEST LIVERPOOL 11KV	1066	1665	2176	2652	3122	3556	3999	4443	4895	5373	5896	6434
WEST PARRAMATTA	504	632	742	844	945	1062	1182	1302	1425	1556	1699	1848
WEST PENNANT HILLS	296	411	509	600	691	775	860	946	1035	1127	1230	1335
WEST WETHERILL PARK 11KV	1666	1705	1737	1768	1792	1814	1836	1858	1881	1904	1930	1957
WEST WOLLONGONG	161	176	189	202	213	229	245	261	277	293	311	329
WESTMEAD	60	122	174	207	240	270	301	332	364	397	434	473
WETHERILL PARK	1084	1181	1262	1337	1410	1477	1544	1611	1678	1748	1823	1900
WHALAN	523	682	818	944	1068	1183	1300	1416	1535	1660	1796	1937
WILTON	117	160	196	230	249	268	286	304	323	343	364	386
WINDSOR	694	1021	1298	1553	1801	1907	2014	2120	2228	2339	2460	2583
WISEMANS	201	380	530	669	804	894	985	1075	1165	1260	1362	1466
WOMBARRA	234	265	291	315	339	360	381	402	423	445	469	493
WOODPARK	846	930	1001	1067	1132	1192	1252	1313	1375	1440	1511	1585
YATTE YATTAH	39	50	60	69	78	86	94	102	110	119	129	139
YENNORA	682	765	834	899	961	1018	1075	1132	1188	1247	1311	1376
TOTAL	**102131**	**132885**	**158550**	**182024**	**204872**	**225513**	**246195**	**266630**	**287405**	**309236**	**333077**	**357580**

Table A.7 Cumulative capacity by zone substation – Endeavour Energy – Industrial (other)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0	0	0	0	0	0	0	0	0	0	0	0
ALBION PARK	70	153	223	288	351	409	467	524	583	643	709	775
AMBARVALE	0	1	1	1	2	2	2	3	3	3	4	4
ANZAC VILLAGE	20	52	78	103	128	151	174	197	221	246	274	302
APPIN	5	19	30	40	50	60	69	78	88	98	108	119
ARNDELL PARK	0	0	0	0	0	0	0	0	0	0	0	0
BAULKHAM HILLS 11KV	20	49	75	98	122	144	166	188	211	235	261	288
BELLA VISTA	101	240	358	468	577	677	780	882	987	1097	1218	1343
BERRY	22	54	82	108	133	156	179	202	225	249	275	302
BLACKHEATH	11	25	36	47	57	66	75	85	94	103	114	124
BLACKMANS FLAT	4	19	32	45	57	67	78	89	100	111	124	136
BLAXLAND	31	50	66	80	94	107	120	133	146	159	173	188
BOLONG	0	0	0	0	0	0	0	0	0	0	0	0
BOMADERRY	63	140	206	266	325	379	433	487	541	598	659	721
BONNYRIGG	15	40	62	82	102	120	138	156	175	194	216	237
BOSSLEY PARK	66	121	167	210	251	289	326	364	401	440	482	524
BOW BOWING	0	0	0	0	0	0	0	0	0	0	0	0
BOWRAL	30	92	144	193	240	283	327	370	413	459	508	558
BRINGELLY	4	19	32	44	56	67	78	90	103	116	130	146
BULLI	11	50	82	113	142	170	197	225	253	283	315	348
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
CAMBRIDGE PARK	116	282	422	552	680	797	917	1036	1157	1284	1422	1564
CAMPBELLTOWN	4	13	21	29	36	43	50	57	65	72	81	90
CANLEY VALE	31	85	130	172	213	250	288	325	363	403	445	489
CARRAMAR	0	0	0	0	0	0	0	0	0	0	0	0
CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
CASULA	16	49	77	103	129	152	176	200	224	249	277	305
CATTAI	0	0	0	0	0	0	0	0	0	0	0	0
CAWDOR	0	0	0	0	0	0	0	0	0	0	0	0
CHERITON AVENUE	60	205	328	445	560	668	778	890	1005	1127	1262	1402
CHIPPING NORTON	0	0	0	0	0	0	0	0	0	0	0	0
CLAREMONT MEADOWS	4	13	21	29	36	43	50	57	65	72	81	89
CORRIMAL	25	77	121	161	199	235	270	305	341	377	417	457
CRANEBROOK	38	110	171	228	283	335	386	438	490	545	604	665
CULBURRA	0	0	0	0	0	0	0	0	0	0	0	0
DAPTO	83	180	261	337	410	476	544	610	677	747	823	900
DARKES FOREST	0	0	0	0	0	0	0	0	0	0	0	0
DOONSIDE	31	94	147	197	245	290	336	382	428	477	531	586
DUNDAS	31	115	187	253	318	378	439	499	561	626	696	769
EAST RICHMOND	30	87	136	180	224	264	304	344	385	427	473	520
EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
EDMONDSON PARK	0	0	0	0	0	0	0	0	0	0	0	0
EMU PLAINS	0	0	0	0	0	0	0	0	0	0	0	0
FAIRFIELD	26	58	84	109	132	154	176	197	219	241	265	290
FIGTREE	58	155	236	311	384	450	517	582	649	717	791	867
GERRINGONG	12	25	36	46	56	65	74	83	92	102	112	123
GLENMORE PARK	68	127	177	224	270	312	354	397	440	486	535	586
GLENORIE	12	30	46	60	74	88	101	114	128	142	158	175
GLOSSODIA	2	5	7	9	12	14	16	18	20	22	24	27
GRANVILLE	10	34	55	74	93	111	129	147	165	184	206	228
GREYSTANES	0	0	0	0	0	0	0	0	0	0	0	0
HARTLEY VALE	0	0	0	0	0	0	0	0	0	0	0	0
HAZELBROOK	15	27	37	46	55	64	72	80	89	97	106	116
HELENSBURGH	19	50	76	100	123	145	166	187	209	231	254	279

Table A.7 Cumulative capacity by zone substation – Endeavour Energy – Industrial (other) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	66	150	221	287	353	414	476	538	602	669	742	818
HOLROYD	83	269	428	576	723	858	995	1133	1274	1423	1585	1753
HOMEPRIDE	0	0	0	0	0	0	0	0	0	0	0	0
HORSLEY PARK	6	10	13	16	19	22	24	27	30	33	36	39
HUNTINGWOOD	0	0	0	0	0	0	0	0	0	0	0	0
HUSKISSON	122	312	473	621	765	897	1030	1162	1296	1434	1585	1738
ILFORD HALL	1	5	8	11	14	17	19	22	24	27	30	33
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	0	0	0	0	0	0	0	0	0	0	0	0
JASPER RD	0	0	0	0	0	0	0	0	0	0	0	0
JORDAN SPRINGS	0	0	0	0	0	0	0	0	0	0	0	0
KANDOS	0	0	0	0	0	0	0	0	0	0	0	0
KANGAROO VALLEY	0	0	0	0	0	0	0	0	0	0	0	0
KATOOMBA	20	42	61	78	94	109	124	140	155	171	188	205
KELLYVILLE	0	0	0	0	0	0	0	0	0	0	0	0
KEMBLA GRANGE	0	0	0	0	0	0	0	0	0	0	0	0
KEMPS CREEK	7	20	31	42	52	61	71	80	90	100	111	123
KENNY STREET	0	0	0	0	0	0	0	0	0	0	0	0
KENTHURST	52	138	212	281	349	412	477	541	607	677	753	832
KENTLYN	118	307	467	614	759	891	1025	1158	1293	1434	1587	1743
KIAMA	40	99	148	195	240	281	323	365	408	452	501	551
KINGSWOOD	67	223	354	477	597	707	819	931	1045	1164	1294	1427
KURRAJONG	20	55	85	113	140	164	189	213	238	263	291	319
LEABONS LANE	0	0	0	0	0	0	0	0	0	0	0	0
LENNOX	4	21	35	49	62	75	88	100	113	127	142	158
LITHGOW	31	85	130	172	212	249	286	322	359	397	438	480
LIVERPOOL 11KV	121	415	667	901	1133	1347	1566	1785	2009	2245	2505	2772
LUDDENHAM	0	0	0	0	0	0	0	0	0	0	0	0
MACQUARIE FIELDS	94	286	448	598	744	878	1013	1146	1282	1423	1576	1732
MALDON	39	123	194	259	324	384	445	505	567	631	702	775
MAMRE	53	120	178	231	283	332	381	430	479	532	589	647
MARAYONG	0	0	0	0	0	0	0	0	0	0	0	0
MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
MEADOW FLAT	2	4	6	8	10	12	14	16	18	20	22	24
MINTO	69	146	210	270	328	381	435	488	542	598	659	721
MITTAGONG	40	96	143	187	230	270	311	351	392	436	483	531
MOOREBANK	0	0	0	0	0	0	0	0	0	0	0	0
MOSS VALE	41	106	161	212	261	306	352	397	443	490	542	594
MOUNT OUSLEY	23	70	109	146	181	213	245	277	309	342	378	414
MUNGERIE PARK	205	435	631	814	993	1159	1328	1497	1670	1852	2050	2255
NARELLAN	147	285	406	521	639	751	868	989	1116	1254	1410	1575
NEPEAN 11KV	152	357	537	710	886	1053	1228	1410	1601	1808	2042	2291
NEWTON	85	161	226	287	346	401	457	513	570	630	695	763
NORTH EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
NORTH LEPPINGTON	0	0	0	0	0	0	0	0	0	0	0	0
NORTH PARRAMATTA	21	61	96	128	160	189	220	250	281	314	351	388
NORTH RICHMOND	21	54	81	107	132	154	177	200	223	247	273	299
NORTH ROCKS	0	0	0	0	0	0	0	0	0	0	0	0
NORTH WARRAGAMBA	16	56	89	120	151	179	208	237	266	297	331	365
NORTH WOLLONGONG	33	119	191	257	322	381	440	498	557	618	684	751
NORTHMEAD	7	21	33	45	56	67	77	88	99	111	124	137
NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
OAKDALE	0	0	0	0	0	0	0	0	0	0	0	0
ORAN PARK	0	0	0	0	0	0	0	0	0	0	0	0
PARKLEA	104	198	278	353	426	495	565	635	706	782	865	951
PENRITH 11KV	0	0	0	0	0	0	0	0	0	0	0	0
PLUMPTON	57	162	250	333	414	489	566	642	719	801	890	982

Table A.7 Cumulative capacity by zone substation – Endeavour Energy – Industrial (other) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	8	31	51	70	88	104	121	137	154	171	190	209
PORT KEMBLA	14	59	96	131	165	196	228	259	290	323	358	394
PORTLAND	16	33	47	60	73	85	97	108	120	132	145	158
PRESTONS	47	98	141	182	222	260	299	338	378	421	468	517
PROSPECT	0	0	0	0	0	0	0	0	0	0	0	0
QUAKERS HILL	52	138	211	279	346	408	471	534	598	666	740	816
QUARRIES	0	0	0	0	0	0	0	0	0	0	0	0
RINGWOOD	12	28	41	53	65	76	87	98	109	120	132	145
RIVERSTONE	176	374	542	697	850	990	1133	1275	1419	1571	1736	1905
ROBERTSON	0	0	0	0	0	0	0	0	0	0	0	0
ROOTY HILL	86	212	320	420	519	610	702	795	889	988	1096	1208
ROSEHILL	0	0	0	0	0	0	0	0	0	0	0	0
RUSSELL VALE	22	70	110	148	184	217	250	283	316	350	387	425
RYDALMERE	36	119	190	256	321	382	443	505	568	635	709	784
SCHOFIELDS	78	172	252	327	400	468	537	606	676	750	830	913
SEVEN HILLS	53	127	191	250	308	362	417	471	527	586	650	716
SHELLHARBOUR	51	146	227	302	375	442	509	577	645	717	795	874
SHERWOOD	59	151	228	301	372	437	503	569	636	707	784	863
SMITHFIELD	21	46	66	85	103	120	137	153	170	187	206	224
SOUTH GRANVILLE	0	1	1	1	2	2	2	3	3	3	4	4
SOUTH LEPPINGTON	50	123	185	243	300	352	406	459	513	570	632	697
SOUTH MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH WINDSOR	80	189	281	366	449	526	603	679	757	838	927	1017
SOUTH WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
SPRINGWOOD	34	60	82	102	121	139	157	174	192	210	230	250
ST MARYS	41	145	232	314	394	468	543	617	693	773	860	950
SUSSEX INLET	0	0	0	0	0	0	0	0	0	0	0	0
TAHMOOR	34	121	195	263	330	392	455	518	582	649	722	797
THE OAKS	0	0	0	0	0	0	0	0	0	0	0	0
TOMERONG	0	0	0	0	0	0	0	0	0	0	0	0
ULLADULLA	59	155	236	311	384	450	517	583	651	720	796	873
UNANDERRA	14	44	69	92	115	135	156	176	196	218	241	264
WARILLA	25	80	126	169	211	250	289	327	366	407	452	497
WENTWORTH FALLS	11	25	37	48	59	69	79	89	99	110	121	133
WERRINGTON	0	0	0	0	0	0	0	0	0	0	0	0
WEST CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
WEST LIVERPOOL 11KV	42	129	202	271	339	402	466	530	595	664	740	817
WEST PARRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
WEST PENNANT HILLS	22	53	80	105	130	153	176	199	223	249	277	305
WEST WETHERILL PARK 11KV	0	0	0	0	0	0	0	0	0	0	0	0
WEST WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
WESTMEAD	0	0	0	0	0	0	0	0	0	0	0	0
WETHERILL PARK	0	0	0	0	0	0	0	0	0	0	0	0
WHALAN	0	0	0	0	0	0	0	0	0	0	0	0
WILTON	0	0	0	0	0	0	0	0	0	0	0	0
WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0
WISEMANS	1	7	12	17	21	25	29	33	38	42	46	51
WOMBARRA	17	48	74	98	122	143	164	186	207	229	253	277
WOODPARK	0	0	0	0	0	0	0	0	0	0	0	0
YATTE YATTAH	0	0	0	0	0	0	0	0	0	0	0	0
YENNORA	3	10	15	20	25	30	34	39	44	48	53	59
TOTAL	**4299**	**10948**	**16599**	**21850**	**27016**	**31770**	**36602**	**41432**	**46349**	**51519**	**57166**	**62973**

Table A.8 Cumulative capacity by zone substation – Endeavour Energy – Total ZSS												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	10601	12063	13325	14517	15708	16818	17958	19112	20300	21565	22965	24422
ALBION PARK	16223	18281	20031	21657	23256	24646	26053	27454	28855	30321	31916	33548
AMBARVALE	8904	10535	11933	13234	14524	15715	16926	18141	19381	20689	22121	23598
ANZAC VILLAGE	7835	9078	10150	11161	12169	13106	14067	15036	16032	17088	18252	19459
APPIN	2662	3432	4088	4700	5303	5830	6365	6899	7441	8011	8631	9267
ARNDELL PARK	4127	4993	5738	6437	7132	7776	8433	9095	9772	10487	11273	12085
BAULKHAM HILLS 11KV	8278	9787	11088	12313	13535	14670	15834	17008	18213	19491	20899	22359
BELLA VISTA	14519	17077	19277	21346	23404	25313	27266	29233	31250	33383	35730	38159
BERRY	5178	6206	7049	7835	8609	9311	10023	10733	11453	12209	13032	13875
BLACKHEATH	2847	3205	3509	3791	4067	4320	4575	4828	5083	5350	5639	5934
BLACKMANS FLAT	1262	1926	2491	3017	3535	4009	4490	4968	5453	5960	6512	7077
BLAXLAND	8583	9276	9864	10409	10943	11412	11886	12356	12831	13326	13863	14410
BOLONG	910	1166	1384	1587	1786	1970	2155	2340	2527	2724	2937	3156
BOMADERRY	10192	11752	13077	14310	15522	16633	17757	18877	20012	21199	22491	23812
BONNYRIGG	9837	11595	13100	14509	15896	17175	18479	19786	21119	22525	24063	25649
BOSSLEY PARK	8948	9919	10741	11501	12245	12924	13608	14286	14971	15683	16455	17241
BOW BOWING	4500	5234	5858	6438	7008	7531	8060	8586	9120	9679	10287	10909
BOWRAL	6970	9001	10729	12337	13920	15334	16765	18192	19639	21155	22804	24493
BRINGELLY	2628	3777	4778	5733	6696	7603	8545	9508	10512	11592	12799	14071
BULLI	5755	7926	9783	11521	13243	14832	16406	17986	19599	21301	23167	25094
BYLONG	74	112	144	174	203	230	257	284	312	340	371	402
CABRAMATTA	3143	4112	4942	5719	6489	7200	7924	8650	9390	10170	11024	11904
CAMBRIDGE PARK	12295	14185	15801	17312	18808	20189	21594	23002	24439	25951	27606	29310
CAMPBELLTOWN	7287	9297	11036	12682	14331	15872	17460	19073	20742	22523	24502	26571
CANLEY VALE	8079	9661	11008	12263	13501	14638	15790	16939	18106	19330	20664	22031
CARRAMAR	2752	3652	4415	5123	5818	6453	7094	7730	8373	9043	9770	10511
CASTLE HILL	3645	6630	9177	11553	13900	16057	18248	20435	22660	24995	27543	30158
CASULA	10134	12323	14194	15944	17675	19271	20894	22520	24176	25919	27825	29786
CATTAI	3911	5110	6131	7083	8020	8881	9754	10625	11508	12435	13444	14478
CAWDOR	6303	8253	9960	11592	13247	14808	16436	18106	19852	21736	23850	26082
CHERITON AVENUE	6946	9048	10867	12589	14312	15922	17581	19264	21003	22857	24912	27057
CHIPPING NORTON	5274	6030	6684	7302	7922	8501	9097	9702	10326	10991	11729	12498
CLAREMONT MEADOWS	7338	9880	12074	14146	16217	18143	20123	22126	24187	26380	28804	31325
CORRIMAL	7136	8710	10044	11280	12492	13599	14715	15823	16942	18108	19373	20662
CRANEBROOK	6720	8368	9776	11093	12395	13595	14816	16039	17284	18594	20027	21500
CULBURRA	4601	5733	6698	7597	8483	9296	10119	10940	11773	12645	13595	14568
DAPTO	17987	20418	22485	24405	26293	28023	29772	31512	33274	35117	37119	39166
DARKES FOREST	77	240	379	508	635	752	870	987	1107	1232	1368	1507
DOONSIDE	17442	20820	23723	26450	29161	31670	34235	36813	39452	42241	45303	48467
DUNDAS	7280	9480	11364	13130	14882	16499	18148	19803	21492	23274	25226	27238
EAST RICHMOND	4607	5317	5919	6478	7028	7531	8041	8549	9063	9601	10186	10785
EASTERN CREEK	574	614	647	678	709	738	767	796	826	857	892	927
EDMONDSON PARK	3959	4973	5840	6651	7455	8195	8949	9703	10472	11282	12167	13078
EMU PLAINS	7478	8296	8992	9639	10277	10862	11455	12045	12643	13270	13952	14651
FAIRFIELD	4223	4728	5157	5555	5945	6302	6663	7022	7384	7763	8174	8594
FIGTREE	10304	12094	13610	15014	16390	17647	18915	20172	21442	22766	24200	25663
GERRINGONG	3409	3722	3990	4239	4486	4712	4942	5172	5406	5652	5919	6194
GLENMORE PARK	14712	16436	17913	19295	20666	21931	23220	24512	25830	27220	28742	30309
GLENORIE	2272	2752	3166	3554	3941	4300	4668	5038	5417	5819	6262	6720
GLOSSODIA	4783	6094	7208	8243	9260	10192	11134	12071	13019	14010	15086	16186
GRANVILLE	3581	4629	5532	6383	7231	8019	8828	9643	10481	11370	12349	13366
GREYSTANES	4552	5227	5807	6351	6893	7395	7907	8423	8951	9510	10124	10758
HARTLEY VALE	168	190	209	226	243	259	274	290	306	322	340	358
HAZELBROOK	4702	5132	5496	5834	6166	6469	6774	7077	7384	7704	8050	8403
HELENSBURGH	2949	3481	3933	4351	4762	5137	5515	5890	6270	6665	7094	7532

Table A.8 Cumulative capacity by zone substation – Endeavour Energy – Total ZSS (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
HINCHINBROOK	16984	19312	21316	23202	25079	26821	28606	30404	32250	34205	36357	38587
HOLROYD	9870	12612	14970	17188	19396	21443	23539	25651	27816	30109	32633	35246
HOMEPRIDE	2570	3719	4705	5630	6549	7400	8270	9147	10044	10994	12038	13118
HORSLEY PARK	2317	2456	2574	2684	2793	2893	2994	3095	3197	3305	3422	3542
HUNTINGWOOD	1648	1939	2186	2416	2642	2857	3075	3292	3512	3743	3994	4251
HUSKISSON	10381	12389	13991	15478	16939	18278	19632	20979	22343	23770	25321	26907
ILFORD HALL	267	391	496	593	688	775	862	949	1036	1128	1226	1327
INNER HARBOUR	38	40	42	43	44	45	46	48	49	50	51	52
JAMBEROO	1542	1920	2244	2546	2845	3116	3391	3666	3946	4240	4561	4892
JASPER RD	8160	9306	10294	11226	12156	13020	13908	14804	15724	16702	17779	18897
JORDAN SPRINGS	7598	8665	9578	10432	11277	12056	12848	13641	14449	15299	16228	17184
KANDOS	1581	2851	3928	4927	5906	6800	7702	8597	9501	10443	11464	12505
KANGAROO VALLEY	1036	1295	1515	1720	1922	2102	2284	2466	2650	2843	3053	3268
KATOOMBA	5218	5835	6359	6846	7324	7762	8205	8645	9091	9557	10064	10582
KELLYVILLE	6280	7388	8345	9248	10149	10987	11847	12715	13607	14553	15597	16680
KEMBLA GRANGE	3009	3629	4158	4652	5142	5592	6050	6508	6976	7468	8006	8560
KEMPS CREEK	2530	3077	3542	3975	4401	4796	5199	5603	6018	6455	6936	7432
KENNY STREET	597	620	640	658	676	692	709	725	741	758	776	794
KENTHURST	7973	10490	12579	14545	16504	18321	20184	22061	23988	26029	28276	30605
KENTLYN	14335	17113	19357	21449	23512	25409	27334	29256	31210	33260	35496	37791
KIAMA	7892	9205	10328	11377	12415	13372	14346	15320	16313	17357	18499	19673
KINGSWOOD	10078	13227	15918	18432	20917	23209	25541	27876	30256	32761	35500	38319
KURRAJONG	5419	6881	8124	9279	10416	11458	12511	13559	14621	15731	16938	18172
LEABONS LANE	4762	6160	7361	8490	9612	10652	11714	12782	13876	15031	16300	17611
LENNOX	1300	2152	2756	3322	3881	4399	4927	5459	6003	6577	7208	7860
LITHGOW	7029	8427	9611	10709	11787	12771	13764	14750	15745	16784	17909	19058
LIVERPOOL 11KV	8091	8918	9623	10280	10927	11525	12134	12745	13368	14025	14745	15486
LUDDENHAM	2057	3272	4328	5325	6320	7254	8223	9211	10238	11340	12570	13862
MACQUARIE FIELDS	12899	15845	18350	20569	22754	24757	26786	28807	30857	33004	35340	37731
MALDON	8576	11722	14417	16807	19177	21367	23600	25842	28133	30549	33199	35933
MAMRE	12070	13910	15489	16968	18436	19777	21144	22516	23918	25397	27018	28691
MARAYONG	5084	6892	8443	9898	11259	12518	13804	15096	16418	17814	19346	20927
MARSDEN PARK	9466	10233	10882	11484	12073	12616	13168	13721	14284	14876	15524	16190
MEADOW FLAT	536	668	779	883	980	1069	1158	1247	1337	1431	1532	1635
MINTO	19950	22386	24460	26391	28293	30039	31807	33570	35359	37233	39273	41363
MITTAGONG	8397	9925	11234	12461	13678	14786	15916	17050	18209	19431	20771	22154
MOOREBANK	3730	4786	5695	6548	7398	8186	8992	9805	10638	11521	12492	13497
MOSS VALE	8129	9868	11347	12721	14073	15312	16566	17815	19081	20406	21847	23322
MOUNT OUSLEY	4986	6275	7368	8380	9373	10280	11195	12103	13020	13977	15014	16071
MUNGERIE PARK	35129	39743	43706	47427	51124	54548	58049	61569	65173	68983	73168	77495
NARELLAN	23161	26018	28542	30981	33475	35853	38357	40953	43691	46675	50055	53657
NEPEAN 11KV	17085	20530	23581	26536	29565	32381	35352	38436	41695	45253	49288	53596
NEWTON	6618	7428	8124	8776	9425	10025	10638	11254	11884	12549	13280	14034
NORTH EASTERN CREEK	404	442	475	505	535	563	592	620	649	680	713	748
NORTH LEPPINGTON	1124	1890	2553	3180	3794	4367	4957	5553	6169	6824	7549	8304
NORTH PARRAMATTA	3849	4798	5618	6393	7168	7908	8669	9438	10231	11073	12003	12970
NORTH RICHMOND	4662	5921	6992	7987	8967	9865	10774	11678	12596	13556	14600	15668
NORTH ROCKS	4067	4885	5591	6258	6925	7546	8183	8827	9490	10194	10971	11778
NORTH WARRAGAMBA	4505	6262	7771	9187	10593	11883	13201	14525	15880	17312	18884	20508
NORTH WOLLONGONG	2145	3077	3863	4588	5192	5742	6296	6845	7398	7973	8596	9230
NORTHMEAD	4091	5107	5983	6810	7636	8404	9192	9988	10807	11675	12634	13629
NOWRA	7334	9230	10844	12346	13825	15182	16557	17927	19316	20771	22355	23976
OAKDALE	893	1422	1875	2300	2722	3112	3511	3911	4321	4753	5228	5719
ORAN PARK	13483	18102	22198	26170	30246	34142	38253	42522	47035	51962	57552	63521
PARKLEA	34900	38613	41811	44823	47825	50613	53368	56149	59006	62037	65379	68848
PENRITH 11KV	2899	4324	5537	6667	7781	8807	9715	10623	11548	12520	13581	14672
PLUMPTON	12004	14159	16009	17745	19470	21066	22696	24334	26010	27780	29723	31730

Table A.8 Cumulative capacity by zone substation – Endeavour Energy – Total ZSS (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	1881	2505	3033	3522	4002	4442	4885	5326	5773	6239	6745	7262
PORT KEMBLA	4572	6168	7525	8786	10027	11165	12317	13463	14625	15841	17163	18516
PORTLAND	1932	2254	2527	2781	3029	3256	3485	3713	3942	4182	4442	4706
PRESTONS	14190	16088	17733	19293	20858	22340	23870	25424	27030	28745	30649	32637
PROSPECT	5786	6347	6830	7286	7741	8169	8608	9051	9506	9990	10523	11076
QUAKERS HILL	15368	18106	20458	22667	24863	26895	28972	31061	33199	35457	37938	40501
QUARRIES	2966	3472	3907	4316	4722	5098	5483	5870	6266	6685	7146	7622
RINGWOOD	3751	4411	4973	5496	6011	6483	6962	7438	7922	8428	8979	9543
RIVERSTONE	11191	12395	13421	14378	15321	16189	17071	17954	18852	19797	20828	21889
ROBERTSON	2375	3112	3745	4339	4930	5477	6037	6599	7174	7782	8450	9140
ROOTY HILL	14146	16628	18759	20758	22744	24582	26459	28345	30275	32313	34550	36859
ROSEHILL	769	1074	1336	1582	1828	2055	2289	2524	2766	3021	3303	3595
RUSSELL VALE	6230	7898	9313	10623	11908	13083	14267	15443	16630	17869	19211	20580
RYDALMERE	6589	8174	9540	10826	12109	13300	14521	15753	17018	18359	19837	21369
SCHOFIELDS	17795	21096	23931	26594	29241	31690	34193	36709	39284	42004	44992	48078
SEVEN HILLS	5457	5958	6387	6789	7188	7556	7932	8309	8695	9103	9549	10010
SHELLHARBOUR	12453	15245	17629	19852	22048	24069	26121	28173	30260	32453	34847	37305
SHERWOOD	5536	6632	7568	8442	9306	10102	10913	11725	12553	13426	14381	15365
SMITHFIELD	10763	12216	13447	14588	15707	16756	17813	18862	19922	21026	22222	23442
SOUTH GRANVILLE	3338	4366	5249	6076	6899	7659	8435	9215	10012	10854	11779	12733
SOUTH LEPPINGTON	9906	12261	14279	16171	18049	19785	21557	23338	25161	27086	29201	31387
SOUTH MARSDEN PARK	2440	3772	4921	6005	7089	8106	9161	10237	11355	12555	13894	15300
SOUTH NOWRA	2604	2979	3297	3592	3882	4148	4417	4684	4955	5238	5546	5861
SOUTH WINDSOR	10010	12232	14111	15849	17551	19116	20705	22292	23905	25599	27447	29345
SOUTH WOLLONGONG	1720	2195	2597	2967	3329	3659	3990	4319	4650	4995	5368	5747
SPRINGWOOD	9612	10499	11252	11950	12635	13261	13892	14519	15153	15813	16530	17260
ST MARYS	7872	10087	11983	13758	15516	17140	18794	20453	22146	23930	25885	27898
SUSSEX INLET	2943	3798	4529	5213	5891	6504	7129	7754	8392	9064	9798	10554
TAHMOOR	8001	11064	13689	16149	18588	20841	23139	25445	27800	30285	33008	35818
THE OAKS	2764	3563	4262	4930	5607	6246	6910	7592	8303	9071	9931	10838
TOMERONG	5583	6103	6546	6959	7365	7738	8118	8497	8882	9284	9722	10171
ULLADULLA	12705	14809	16597	18259	19893	21390	22905	24413	25941	27539	29277	31055
UNANDERRA	2883	3396	3830	4233	4627	4987	5350	5711	6075	6454	6865	7284
WARILLA	8488	10596	12394	13972	15531	16964	18419	19873	21352	22904	24598	26337
WENTWORTH FALLS	3194	3648	4036	4398	4755	5063	5376	5689	6008	6342	6708	7084
WERRINGTON	7592	9643	11396	13034	14655	16150	17673	18961	20277	21663	23180	24744
WEST CASTLE HILL	7107	8577	9846	11043	12237	13347	14486	15635	16816	18070	19451	20885
WEST LIVERPOOL 11KV	7744	9695	11369	12941	14501	15947	17425	18913	20436	22047	23817	25647
WEST PARRAMATTA	545	687	808	922	1034	1161	1292	1423	1558	1700	1856	2018
WEST PENNANT HILLS	7982	9321	10475	11564	12650	13659	14695	15740	16814	17953	19210	20512
WEST WETHERILL PARK 11KV	1706	1745	1778	1808	1832	1854	1877	1899	1922	1946	1972	1999
WEST WOLLONGONG	3534	4487	5295	6046	6783	7463	8149	8830	9518	10237	11016	11812
WESTMEAD	314	428	526	601	677	747	819	891	966	1045	1132	1222
WETHERILL PARK	2030	2169	2286	2393	2498	2594	2691	2787	2884	2985	3094	3206
WHALAN	7139	8058	8847	9588	10323	11004	11699	12397	13111	13865	14693	15548
WILTON	2054	2404	2704	2984	3249	3493	3741	3990	4244	4511	4803	5104
WINDSOR	4914	6057	7021	7910	8778	9453	10136	10816	11506	12228	13014	13819
WISEMANS	1093	1502	1848	2169	2484	2739	2997	3253	3513	3785	4080	4381
WOMBARRA	3063	3679	4200	4684	5159	5593	6031	6466	6905	7364	7861	8368
WOODPARK	1129	1294	1433	1561	1685	1800	1918	2035	2155	2282	2421	2564
YATTE YATTAH	1670	2192	2641	3062	3480	3867	4262	4659	5065	5493	5964	6450
YENNORA	4426	5487	6388	7224	8045	8796	9554	10307	11068	11863	12725	13605
TOTAL	**1076042**	**1292300**	**1477217**	**1650186**	**1821582**	**1979715**	**2140913**	**2302653**	**2468113**	**2642929**	**2834892**	**3033276**

Table A.9 Cumulative capacity by zone substation – Solar only installations – Endeavour Energy – Residential												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	10207	11616	12814	13927	15010	15985	16954	17899	18837	19798	20819	21839
ALBION PARK	14621	16239	17596	18840	20033	21092	22127	23122	24095	25075	26100	27106
AMBARVALE	8610	10139	11430	12621	13771	14799	15810	16789	17753	18730	19758	20775
ANZAC VILLAGE	7259	8385	9342	10231	11094	11870	12639	13388	14129	14886	15688	16485
APPIN	2445	3094	3639	4140	4622	5050	5470	5874	6270	6670	7089	7501
ARNDELL PARK	3525	4330	5012	5642	6253	6800	7339	7863	8380	8905	9459	10009
BAULKHAM HILLS 11KV	7504	8885	10057	11144	12201	13150	14090	15005	15911	16835	17813	18786
BELLA VISTA	12766	14832	16585	18209	19785	21200	22599	23960	25304	26675	28124	29563
BERRY	4610	5425	6109	6738	7341	7878	8403	8910	9405	9905	10429	10944
BLACKHEATH	2579	2899	3167	3411	3644	3850	4052	4244	4432	4620	4817	5009
BLACKMANS FLAT	1134	1753	2272	2748	3203	3608	4003	4382	4753	5127	5517	5900
BLAXLAND	7924	8509	8998	9445	9871	10249	10616	10968	11311	11655	12014	12364
BOLONG	839	1062	1248	1419	1583	1729	1872	2009	2143	2278	2419	2558
BOMADERRY	8896	10050	11019	11906	12758	13515	14255	14967	15663	16364	17098	17818
BONNYRIGG	9253	10783	12074	13265	14414	15441	16451	17429	18391	19366	20393	21409
BOSSLEY PARK	7758	8456	9039	9571	10079	10529	10966	11386	11794	12203	12630	13047
BOW BOWING	3743	4199	4581	4932	5269	5568	5862	6144	6420	6698	6990	7276
BOWRAL	6108	7719	9072	10313	11504	12562	13597	14593	15567	16550	17578	18588
BRINGELLY	2240	3107	3853	4555	5245	5875	6507	7131	7759	8409	9108	9815
BULLI	5311	7191	8776	10238	11648	12908	14149	15350	16532	17733	18999	20252
BYLONG	72	109	140	168	195	219	242	264	285	307	329	352
CABRAMATTA	2733	3627	4380	5075	5746	6345	6934	7504	8064	8632	9230	9821
CAMBRIDGE PARK	10830	12210	13375	14450	15488	16415	17328	18211	19081	19963	20891	21808
CAMPBELLTOWN	6088	7769	9202	10539	11844	13024	14201	15354	16503	17686	18948	20214
CANLEY VALE	7341	8766	9963	11061	12116	13053	13970	14854	15718	16591	17505	18403
CARRAMAR	2447	3266	3950	4575	5173	5701	6216	6709	7190	7672	8174	8666
CASTLE HILL	3271	5833	7987	9968	11873	13568	15232	16835	18407	19996	21662	23303
CASULA	9425	11299	12878	14332	15735	16986	18217	19406	20574	21757	23000	24228
CATTAI	3444	4463	5319	6104	6859	7529	8186	8818	9436	10061	10715	11358
CAWDOR	5847	7560	9037	10429	11803	13058	14322	15575	16836	18146	19559	20991
CHERITON AVENUE	5997	7500	8783	9981	11152	12210	13265	14300	15330	16389	17518	18649
CHIPPING NORTON	4482	5120	5664	6172	6668	7115	7561	7998	8432	8878	9353	9828
CLAREMONT MEADOWS	6841	9245	11290	13189	15038	16702	18353	19965	21564	23201	24939	26673
CORRIMAL	6395	7610	8626	9554	10442	11227	11992	12726	13440	14158	14906	15638
CRANEBROOK	5938	7271	8395	9430	10428	11319	12195	13042	13873	14716	15602	16476
CULBURRA	4318	5392	6292	7118	7910	8614	9302	9964	10611	11264	11946	12616
DAPTO	16476	18550	20286	21877	23401	24752	26072	27339	28577	29823	31125	32401
DARKES FOREST	57	179	281	375	466	546	625	700	774	849	927	1004
DOONSIDE	16460	19553	22170	24591	26936	29035	31108	33119	35102	37120	39248	41358
DUNDAS	6591	8560	10223	11758	13241	14565	15870	17134	18378	19640	20969	22284
EAST RICHMOND	3878	4252	4566	4855	5132	5378	5619	5851	6078	6307	6547	6783
EASTERN CREEK	82	94	105	114	123	132	140	148	156	164	172	180
EDMONDSON PARK	3725	4636	5405	6113	6795	7404	8003	8582	9150	9726	10331	10928
EMU PLAINS	6932	7646	8246	8795	9322	9790	10248	10688	11118	11552	12006	12451
FAIRFIELD	3382	3793	4137	4451	4752	5018	5278	5528	5771	6016	6272	6522
FIGTREE	9167	10482	11581	12586	13546	14395	15223	16017	16790	17566	18375	19167
GERRINGONG	3063	3311	3520	3713	3898	4063	4224	4380	4534	4688	4851	5011
GLENMORE PARK	13569	15040	16281	17427	18533	19521	20494	21436	22363	23303	24292	25270
GLENORIE	1985	2358	2676	2970	3255	3512	3765	4012	4257	4506	4769	5031
GLOSSODIA	4430	5595	6570	7462	8316	9073	9813	10522	11215	11911	12639	13352
GRANVILLE	3039	3951	4726	5445	6143	6771	7394	8000	8600	9213	9862	10508
GREYSTANES	4159	4777	5299	5783	6251	6671	7085	7487	7884	8288	8715	9138
HARTLEY VALE	156	174	188	202	215	226	237	248	258	269	280	290
HAZELBROOK	4350	4739	5063	5360	5643	5894	6138	6372	6600	6828	7066	7299
HELENSBURGH	2588	3021	3383	3714	4030	4310	4582	4844	5098	5354	5620	5881

Table A.9 Cumulative capacity by zone substation – Solar only installations – Endeavour Energy – Residential (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	15471	17257	18772	20178	21543	22770	23985	25168	26338	27532	28797	30054
HOLROYD	8440	10769	12743	14573	16349	17942	19519	21052	22567	24112	25747	27371
HOMEPRIDE	1547	2046	2470	2864	3246	3590	3931	4262	4590	4925	5280	5633
HORSLEY PARK	1892	1971	2037	2098	2156	2208	2260	2309	2357	2406	2458	2508
HUNTINGWOOD	1196	1369	1514	1648	1776	1890	2002	2110	2216	2323	2434	2544
HUSKISSON	8675	9848	10832	11734	12599	13368	14120	14843	15550	16262	17008	17740
ILFORD HALL	228	321	398	469	537	597	655	711	766	820	877	933
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	1418	1765	2057	2326	2585	2816	3043	3261	3475	3692	3919	4144
JASPER RD	7808	8816	9672	10468	11241	11937	12627	13300	13966	14647	15368	16086
JORDAN SPRINGS	7196	8140	8935	9667	10373	11002	11621	12219	12806	13401	14026	14642
KANDOS	1420	2572	3533	4411	5250	5991	6713	7404	8077	8752	9455	10143
KANGAROO VALLEY	934	1161	1352	1526	1694	1843	1989	2129	2266	2404	2548	2690
KATOOMBA	4548	5027	5428	5795	6148	6460	6765	7059	7345	7633	7935	8230
KELLYVILLE	6079	7132	8026	8857	9664	10390	11110	11810	12505	13213	13964	14711
KEMBLA GRANGE	2811	3386	3870	4315	4743	5125	5500	5862	6217	6578	6956	7331
KEMPS CREEK	1992	2390	2725	3031	3325	3588	3847	4100	4348	4602	4869	5134
KENNY STREET	74	79	83	87	90	94	97	100	102	105	108	111
KENTHURST	6814	8730	10356	11866	13332	14649	15954	17224	18481	19764	21121	22471
KENTLYN	12718	14691	16351	17877	19346	20653	21935	23173	24385	25611	26897	28164
KIAMA	7103	8219	9160	10027	10863	11608	12341	13049	13744	14448	15188	15919
KINGSWOOD	8603	10583	12255	13797	15286	16616	17926	19193	20440	21705	23035	24351
KURRAJONG	4891	6230	7352	8379	9363	10235	11087	11905	12704	13508	14347	15171
LEABONS LANE	4485	5799	6912	7941	8937	9829	10710	11564	12407	13264	14169	15065
LENNOX	731	836	925	1008	1088	1160	1231	1301	1370	1440	1515	1589
LITHGOW	6149	7314	8287	9176	10026	10778	11511	12214	12898	13585	14301	15001
LIVERPOOL 11KV	6291	6135	6004	5881	5762	5656	5550	5447	5345	5241	5132	5022
LUDDENHAM	1824	2912	3844	4710	5552	6316	7081	7835	8591	9371	10207	11050
MACQUARIE FIELDS	11334	13319	14986	16516	17985	19290	20568	21798	23002	24216	25487	26737
MALDON	7524	9990	12075	13999	15860	17524	19165	20754	22320	23911	25587	27248
MAMRE	10834	12437	13792	15044	16254	17335	18402	19435	20452	21485	22573	23650
MARAYONG	4428	5791	6944	8010	9043	9968	10881	11767	12641	13530	14468	15397
MARSDEN PARK	9185	9913	10520	11073	11600	12070	12531	12977	13415	13858	14323	14782
MEADOW FLAT	472	572	656	732	805	870	933	993	1052	1111	1173	1233
MINTO	18030	20018	21687	23218	24689	25995	27274	28505	29710	30925	32196	33447
MITTAGONG	7312	8556	9607	10579	11518	12357	13185	13988	14778	15581	16427	17264
MOOREBANK	3079	3820	4450	5034	5601	6110	6614	7105	7591	8086	8611	9132
MOSS VALE	7012	8236	9262	10203	11107	11910	12695	13451	14190	14935	15714	16480
MOUNT OUSLEY	4325	5348	6203	6984	7731	8391	9035	9653	10254	10858	11487	12103
MUNGERIE PARK	31466	35081	38143	40978	43726	46189	48623	50987	53321	55697	58207	60698
NARELLAN	20189	22213	23979	25662	27342	28893	30473	32054	33664	35355	37196	39081
NEPEAN 11KV	14727	17585	20080	22462	24841	27041	29284	31532	33822	36228	38852	41539
NEWTON	5065	5731	6295	6816	7322	7774	8220	8654	9081	9516	9975	10429
NORTH EASTERN CREEK	71	81	90	98	106	113	120	127	133	140	147	154
NORTH LEPPINGTON	1057	1741	2324	2866	3395	3872	4346	4810	5270	5742	6243	6744
NORTH PARRAMATTA	3042	3849	4537	5177	5800	6362	6921	7466	8008	8562	9150	9737
NORTH RICHMOND	4134	5139	5982	6755	7497	8154	8798	9417	10022	10632	11269	11895
NORTH ROCKS	3770	4554	5220	5840	6442	6985	7523	8048	8568	9100	9663	10225
NORTH WARRAGAMBA	4075	5649	6981	8211	9402	10467	11519	12539	13545	14568	15647	16717
NORTH WOLLONGONG	1365	1680	1943	2184	2414	2617	2815	3005	3190	3376	3570	3759
NORTHMEAD	3667	4568	5334	6046	6739	7362	7980	8582	9179	9789	10436	11080
NOWRA	6621	8143	9421	10593	11719	12719	13697	14639	15560	16489	17461	18416
OAKDALE	828	1279	1661	2014	2355	2660	2962	3254	3542	3835	4144	4451
ORAN PARK	12890	17289	21129	24795	28458	31844	35296	38754	42277	45977	50011	54141
PARKLEA	32067	35059	37601	39961	42254	44316	46360	48351	50323	52338	54474	56601
PENRITH 11KV	1784	2266	2672	3047	3409	3733	4051	4359	4662	4970	5293	5613
PLUMPTON	11027	12849	14390	15816	17196	18432	19652	20836	22003	23191	24443	25685

Table A.9 Cumulative capacity by zone substation – Solar only installations – Endeavour Energy – Residential (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	1470	1799	2074	2326	2568	2782	2992	3194	3391	3589	3796	4000
PORT KEMBLA	4030	5322	6405	7397	8350	9195	10021	10816	11592	12375	13193	13996
PORTLAND	1668	1930	2148	2348	2540	2709	2874	3032	3186	3340	3501	3659
PRESTONS	13244	14920	16352	17688	18995	20177	21356	22511	23663	24847	26110	27375
PROSPECT	5173	5686	6122	6526	6919	7273	7623	7964	8302	8647	9012	9376
QUAKERS HILL	14129	16558	18613	20515	22357	24006	25635	27215	28775	30361	32034	33693
QUARRIES	2577	2985	3329	3649	3958	4236	4510	4776	5039	5307	5590	5871
RINGWOOD	3321	3858	4309	4722	5119	5472	5817	6148	6473	6800	7142	7479
RIVERSTONE	8768	9247	9652	10025	10386	10708	11025	11331	11633	11939	12261	12580
ROBERTSON	2114	2774	3332	3849	4349	4797	5239	5669	6092	6523	6978	7429
ROOTY HILL	12318	14398	16159	17788	19365	20776	22170	23522	24856	26212	27642	29060
ROSEHILL	364	561	729	884	1035	1171	1306	1437	1567	1699	1840	1980
RUSSELL VALE	5609	6941	8055	9072	10045	10906	11745	12549	13332	14119	14938	15741
RYDALMERE	5239	6545	7655	8686	9687	10587	11480	12348	13209	14087	15017	15943
SCHOFIELDS	16527	19478	21974	24284	26520	28522	30498	32416	34308	36232	38262	40273
SEVEN HILLS	4032	4315	4556	4778	4993	5186	5377	5562	5744	5930	6126	6321
SHELLHARBOUR	11130	13218	14975	16593	18151	19540	20903	22220	23512	24819	26192	27545
SHERWOOD	4640	5303	5862	6378	6876	7320	7758	8183	8600	9024	9471	9914
SMITHFIELD	9920	11161	12197	13144	14048	14847	15626	16372	17098	17827	18586	19329
SOUTH GRANVILLE	3014	3986	4808	5566	6300	6956	7603	8230	8848	9476	10139	10795
SOUTH LEPPINGTON	9092	11069	12739	14282	15774	17109	18427	19706	20966	22249	23603	24946
SOUTH MARSDEN PARK	2125	3199	4112	4959	5784	6533	7283	8023	8764	9530	10351	11179
SOUTH NOWRA	2027	2254	2445	2620	2788	2937	3083	3224	3361	3499	3644	3786
SOUTH WINDSOR	7890	9660	11135	12477	13757	14895	16013	17091	18148	19217	20338	21442
SOUTH WOLLONGONG	1213	1388	1534	1667	1795	1908	2018	2123	2226	2329	2437	2542
SPRINGWOOD	8860	9664	10335	10949	11535	12054	12559	13043	13514	13988	14481	14963
ST MARYS	7085	8722	10105	11382	12617	13720	14807	15860	16897	17950	19058	20155
SUSSEX INLET	2764	3508	4134	4712	5270	5767	6256	6729	7193	7664	8159	8648
TAHMOOR	7289	9877	12062	14080	16031	17774	19493	21158	22797	24462	26216	27953
THE OAKS	2626	3387	4042	4659	5267	5821	6379	6931	7486	8062	8682	9310
TOMERONG	5298	5783	6190	6563	6921	7238	7549	7848	8140	8435	8743	9046
ULLADULLA	11191	12742	14043	15235	16379	17394	18387	19342	20275	21215	22199	23164
UNANDERRA	2026	2401	2713	2999	3273	3514	3750	3976	4196	4417	4647	4872
WARILLA	7788	9469	10883	12183	13434	14547	15640	16694	17727	18772	19867	20946
WENTWORTH FALLS	2914	3268	3567	3842	4107	4342	4574	4797	5017	5238	5471	5701
WERRINGTON	6254	7444	8450	9379	10277	11080	11872	12638	13393	14159	14967	15765
WEST CASTLE HILL	6479	7791	8907	9943	10951	11857	12755	13630	14497	15382	16320	17253
WEST LIVERPOOL 11KV	6517	7741	8778	9739	10672	11509	12337	13142	13938	14749	15607	16459
WEST PARRAMATTA	40	53	65	75	86	95	104	113	122	131	140	150
WEST PENNANT HILLS	7526	8680	9660	10571	11456	12252	13041	13811	14572	15350	16175	16995
WEST WETHERILL PARK 11KV	39	39	39	40	40	40	40	40	41	41	41	41
WEST WOLLONGONG	3313	4219	4976	5668	6330	6915	7486	8033	8565	9100	9658	10203
WESTMEAD	249	300	343	383	422	457	492	526	560	595	631	668
WETHERILL PARK	929	970	1003	1034	1063	1089	1114	1138	1162	1186	1210	1235
WHALAN	6497	7232	7854	8430	8987	9486	9979	10457	10928	11408	11914	12415
WILTON	1902	2200	2450	2681	2905	3104	3300	3489	3675	3864	4062	4258
WINDSOR	4144	4932	5587	6182	6747	7248	7739	8211	8672	9138	9624	10103
WISEMANS	874	1091	1273	1440	1600	1742	1881	2014	2145	2276	2414	2549
WOMBARRA	2761	3296	3743	4152	4542	4888	5224	5547	5862	6177	6506	6829
WOODPARK	277	356	421	479	533	582	630	677	723	770	819	868
YATTE YATTAH	1602	2096	2514	2900	3273	3607	3937	4256	4571	4891	5229	5563
YENNORA	3674	4614	5399	6118	6805	7413	8006	8575	9129	9686	10267	10836
TOTAL	**952159**	**1125112**	**1271340**	**1406496**	**1537261**	**1654336**	**1769939**	**1882121**	**1992817**	**2105453**	**2224384**	**2342372**

Table A.10 Cumulative capacity by zone substation – Solar only installations – Endeavour Energy – Commercial												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	201	206	210	214	217	220	223	225	228	230	232	235
ALBION PARK	1233	1522	1762	1975	2170	2276	2375	2467	2539	2609	2679	2746
AMBARVALE	133	180	219	245	270	291	308	324	340	354	369	383
ANZAC VILLAGE	412	457	495	529	561	588	614	639	661	683	706	728
APPIN	163	245	313	374	429	455	480	502	523	543	563	583
ARNDELL PARK	524	556	583	607	629	648	666	683	699	714	729	744
BAULKHAM HILLS 11KV	602	651	693	730	764	794	823	849	874	898	923	947
BELLA VISTA	1383	1654	1882	2086	2275	2439	2595	2739	2875	3005	3139	3269
BERRY	450	597	688	769	844	901	954	1003	1049	1092	1136	1179
BLACKHEATH	204	217	228	238	247	254	261	268	274	280	285	291
BLACKMANS FLAT	101	109	115	121	126	130	135	139	142	146	149	152
BLAXLAND	470	537	592	641	685	709	731	751	769	787	804	821
BOLONG	54	79	100	118	135	149	163	175	187	198	209	220
BOMADERRY	1044	1320	1550	1754	1941	2101	2252	2390	2518	2640	2764	2882
BONNYRIGG	390	534	654	762	853	931	1005	1073	1137	1198	1261	1321
BOSSLEY PARK	958	1144	1298	1434	1558	1664	1763	1853	1937	2016	2096	2172
BOW BOWING	671	924	1134	1321	1492	1639	1776	1903	2021	2133	2247	2356
BOWRAL	703	993	1233	1447	1644	1781	1910	2028	2139	2244	2350	2452
BRINGELLY	335	562	756	932	1098	1244	1384	1517	1643	1767	1896	2023
BULLI	326	507	658	793	917	1024	1092	1154	1212	1268	1325	1381
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	351	394	430	462	492	518	542	564	585	605	626	645
CAMBRIDGE PARK	1122	1407	1645	1859	2055	2224	2384	2532	2670	2803	2938	3068
CAMPBELLTOWN	1056	1308	1522	1714	1894	2051	2201	2341	2474	2603	2737	2867
CANLEY VALE	558	610	652	690	725	754	782	808	832	855	878	900
CARRAMAR	253	304	346	384	418	447	474	499	522	543	565	586
CASTLE HILL	306	628	897	1136	1356	1544	1722	1885	2037	2182	2331	2472
CASULA	508	717	891	1046	1190	1313	1429	1536	1636	1732	1830	1924
CATTAI	393	533	649	752	846	927	1003	1073	1138	1200	1263	1324
CAWDOR	340	512	658	792	918	1029	1136	1238	1335	1430	1530	1629
CHERITON AVENUE	758	1147	1475	1772	2050	2291	2522	2739	2943	3142	3348	3549
CHIPPING NORTON	693	784	862	932	997	1054	1108	1159	1207	1254	1302	1349
CLAREMONT MEADOWS	359	403	440	473	504	531	556	580	603	624	647	668
CORRIMAL	584	839	1050	1237	1407	1553	1688	1813	1928	2037	2148	2253
CRANEBROOK	619	809	966	1107	1237	1349	1454	1551	1642	1729	1818	1903
CULBURRA	198	220	238	253	268	280	292	303	313	322	332	341
DAPTO	1097	1280	1432	1567	1690	1795	1894	1984	2068	2148	2229	2306
DARKES FOREST	19	54	83	110	134	154	173	191	207	223	239	254
DOONSIDE	632	745	840	925	1003	1071	1135	1195	1250	1304	1359	1412
DUNDAS	524	599	662	718	770	815	857	896	933	968	1004	1038
EAST RICHMOND	613	867	1079	1267	1440	1587	1726	1854	1973	2086	2201	2311
EASTERN CREEK	478	504	525	544	562	578	592	606	618	631	643	655
EDMONDSON PARK	162	230	287	337	384	424	462	497	530	561	593	624
EMU PLAINS	409	484	547	603	654	698	739	777	812	845	879	911
FAIRFIELD	734	781	820	854	886	912	938	961	982	1002	1023	1043
FIGTREE	889	1209	1473	1707	1921	2104	2274	2430	2575	2712	2851	2983
GERRINGONG	271	313	348	379	408	432	455	477	496	515	535	553
GLENMORE PARK	806	944	1060	1163	1258	1340	1418	1489	1556	1621	1686	1749
GLENORIE	233	305	367	422	473	517	558	597	634	669	705	740
GLOSSODIA	263	362	445	518	585	643	696	745	791	834	878	920
GRANVILLE	464	542	607	665	719	766	811	852	892	929	968	1006
GREYSTANES	309	343	372	399	423	443	463	481	499	515	532	548
HARTLEY VALE	9	13	16	19	21	23	25	27	28	30	31	33
HAZELBROOK	251	266	278	289	300	308	316	323	330	337	343	349
HELENSBURGH	287	339	381	419	453	483	510	535	559	581	603	624

Table A.10 Cumulative capacity by zone substation – Solar only installations – Endeavour Energy – Commercial (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	1133	1517	1839	2128	2397	2630	2850	3056	3249	3435	3627	3812
HOLROYD	1163	1304	1422	1528	1626	1711	1792	1867	1937	2005	2075	2142
HOMEPRIDE	969	1577	2088	2548	2974	3343	3694	4021	4328	4624	4929	5223
HORSLEY PARK	375	426	469	508	543	573	602	628	653	676	700	723
HUNTINGWOOD	419	526	616	696	769	837	902	961	1016	1068	1122	1173
HUSKISSON	1389	1970	2355	2698	3012	3280	3532	3764	3979	4184	4392	4591
ILFORD HALL	33	56	75	92	107	120	132	143	154	163	173	183
INNER HARBOUR	37	39	40	42	43	44	44	45	46	47	47	48
JAMBEROO	95	114	130	144	157	164	171	177	183	189	194	200
JASPER RD	204	303	387	462	532	593	650	704	754	803	853	902
JORDAN SPRINGS	263	351	425	490	551	603	652	697	740	780	821	861
KANDOS	131	208	271	327	378	421	462	499	534	566	599	630
KANGAROO VALLEY	83	106	125	142	157	166	174	182	189	196	203	209
KATOOMBA	553	649	728	798	863	918	969	1017	1061	1102	1145	1185
KELLYVILLE	87	106	123	137	151	163	174	185	195	204	214	224
KEMBLA GRANGE	142	167	187	205	221	236	249	261	273	284	295	306
KEMPS CREEK	483	599	696	783	864	933	999	1060	1118	1173	1229	1284
KENNY STREET	508	526	541	554	565	576	585	594	602	609	617	624
KENTHURST	958	1389	1679	1939	2181	2390	2588	2773	2947	3114	3287	3453
KENTLYN	1233	1761	2083	2370	2633	2859	3072	3268	3451	3625	3803	3974
KIAMA	604	699	779	850	916	972	1025	1074	1120	1164	1209	1252
KINGSWOOD	1219	2127	2887	3565	4191	4729	5238	5708	6148	6569	7000	7414
KURRAJONG	408	448	481	510	536	559	580	600	618	635	653	669
LEABONS LANE	189	227	258	286	312	334	355	375	394	411	429	447
LENNOX	538	1236	1705	2126	2518	2856	3178	3478	3760	4031	4312	4582
LITHGOW	718	851	962	1060	1150	1226	1297	1362	1423	1480	1538	1593
LIVERPOOL 11KV	1525	2191	2750	3253	3720	4124	4507	4863	5199	5522	5854	6175
LUDDENHAM	195	281	353	420	482	536	588	637	684	729	777	823
MACQUARIE FIELDS	1231	1905	2464	2862	3227	3539	3833	4102	4353	4592	4836	5068
MALDON	854	1345	1756	2001	2227	2422	2607	2777	2937	3090	3248	3399
MAMRE	960	1070	1163	1245	1321	1374	1423	1469	1512	1553	1596	1636
MARAYONG	560	944	1265	1553	1748	1916	2076	2224	2362	2495	2632	2764
MARSDEN PARK	109	123	135	145	155	163	171	178	185	191	198	204
MEADOW FLAT	53	77	97	115	128	139	149	159	168	176	184	192
MINTO	1482	1774	2016	2232	2430	2599	2759	2905	3041	3170	3302	3428
MITTAGONG	889	1067	1215	1349	1472	1564	1652	1733	1809	1882	1957	2029
MOOREBANK	580	858	1091	1301	1496	1664	1824	1973	2113	2247	2386	2520
MOSS VALE	923	1316	1643	1933	2199	2426	2640	2836	3019	3192	3369	3538
MOUNT OUSLEY	544	722	868	998	1117	1218	1312	1399	1479	1555	1632	1705
MUNGERIE PARK	2809	3429	3949	4415	4847	5220	5573	5901	6209	6504	6808	7101
NARELLAN	2393	2994	3513	3992	4449	4856	5253	5632	5999	6364	6750	7133
NEPEAN 11KV	1887	2161	2397	2616	2825	2948	3070	3186	3298	3409	3528	3645
NEWTON	1341	1384	1420	1452	1482	1508	1533	1555	1577	1597	1618	1638
NORTH EASTERN CREEK	323	350	372	392	410	426	441	455	468	481	494	506
NORTH LEPPINGTON	46	103	151	194	224	250	274	297	319	340	361	382
NORTH PARRAMATTA	711	783	843	897	948	1007	1063	1115	1164	1211	1260	1308
NORTH RICHMOND	421	600	749	881	1002	1105	1203	1292	1375	1453	1534	1610
NORTH ROCKS	222	229	235	241	246	250	255	259	262	266	270	273
NORTH WARRAGAMBA	330	417	489	554	614	657	698	736	771	805	840	874
NORTH WOLLONGONG	704	1203	1617	1983	2228	2437	2632	2811	2976	3133	3293	3444
NORTHMEAD	341	408	464	515	562	603	641	678	712	744	778	811
NOWRA	577	886	1143	1371	1581	1760	1928	2082	2226	2363	2502	2635
OAKDALE	49	108	158	202	243	278	312	343	372	399	428	456
ORAN PARK	348	416	474	527	579	624	669	712	753	794	837	881
PARKLEA	2088	2592	3015	3396	3749	4056	4269	4468	4655	4835	5021	5201
PENRITH 11KV	1055	1945	2688	3352	3965	4492	4890	5258	5602	5932	6270	6594
PLUMPTON	700	860	994	1114	1225	1321	1412	1496	1574	1650	1728	1803

Table A.10 Cumulative capacity by zone substation – Solar only installations – Endeavour Energy – Commercial (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	367	617	823	1007	1176	1319	1454	1578	1693	1802	1914	2020
PORT KEMBLA	443	650	821	973	1113	1232	1343	1446	1541	1632	1724	1813
PORTLAND	212	245	273	297	319	338	356	372	387	402	416	430
PRESTONS	639	749	842	926	1005	1088	1168	1243	1314	1383	1455	1524
PROSPECT	505	534	558	580	601	623	644	663	682	699	717	735
QUAKERS HILL	905	1040	1153	1254	1347	1428	1504	1575	1642	1705	1771	1834
QUARRIES	333	415	484	545	603	652	699	742	783	822	862	901
RINGWOOD	347	433	504	568	626	676	722	765	805	843	881	918
RIVERSTONE	2034	2524	2934	3300	3637	3928	4202	4455	4692	4919	5152	5375
ROBERTSON	217	269	313	352	389	420	450	477	503	528	553	578
ROOTY HILL	1479	1675	1838	1985	2121	2238	2348	2451	2547	2640	2735	2826
ROSEHILL	388	485	566	640	708	767	823	876	925	972	1021	1068
RUSSELL VALE	484	717	909	1080	1236	1368	1493	1606	1711	1811	1912	2008
RYDALMERE	1188	1333	1455	1564	1666	1754	1838	1916	1989	2060	2133	2203
SCHOFIELDS	865	1014	1140	1252	1356	1445	1530	1609	1683	1754	1826	1896
SEVEN HILLS	1266	1394	1501	1597	1686	1763	1836	1903	1966	2027	2090	2150
SHELLHARBOUR	1040	1558	1989	2374	2728	3031	3318	3581	3828	4063	4303	4533
SHERWOOD	733	1039	1295	1524	1735	1917	2088	2247	2395	2538	2684	2824
SMITHFIELD	623	763	878	980	1073	1174	1269	1355	1435	1511	1587	1660
SOUTH GRANVILLE	262	283	302	318	333	346	358	369	380	390	400	410
SOUTH LEPPINGTON	582	810	1001	1171	1329	1465	1594	1713	1825	1932	2042	2149
SOUTH MARSDEN PARK	269	481	661	825	979	1113	1242	1364	1480	1593	1711	1826
SOUTH NOWRA	527	661	772	870	961	1038	1111	1177	1239	1298	1358	1415
SOUTH WINDSOR	1849	2119	2344	2545	2729	2887	3036	3173	3301	3423	3547	3667
SOUTH WOLLONGONG	472	756	990	1197	1387	1548	1699	1838	1966	2087	2210	2327
SPRINGWOOD	541	570	594	615	635	651	667	681	694	706	719	731
ST MARYS	600	1002	1338	1639	1917	2156	2382	2591	2786	2974	3166	3351
SUSSEX INLET	125	208	277	338	395	434	472	507	539	570	602	632
TAHMOOR	530	819	1060	1276	1476	1648	1810	1960	2101	2236	2374	2507
THE OAKS	87	99	109	119	128	135	143	150	157	163	170	177
TOMERONG	183	201	216	229	241	251	263	273	283	292	302	311
ULLADULLA	1218	1607	1929	2215	2477	2701	2912	3105	3284	3455	3629	3794
UNANDERRA	785	878	954	1021	1083	1136	1185	1230	1271	1311	1351	1389
WARILLA	519	821	1073	1207	1331	1437	1537	1629	1714	1796	1880	1959
WENTWORTH FALLS	210	280	339	391	439	464	488	509	529	548	568	587
WERRINGTON	1193	1980	2638	3227	3770	4238	4681	4926	5156	5377	5603	5820
WEST CASTLE HILL	496	605	697	779	856	922	985	1043	1099	1152	1207	1260
WEST LIVERPOOL 11KV	1039	1614	2097	2531	2933	3280	3609	3916	4203	4480	4765	5040
WEST PARRAMATTA	492	614	718	811	897	991	1080	1163	1242	1317	1395	1471
WEST PENNANT HILLS	288	399	491	575	652	719	783	842	898	952	1008	1062
WEST WETHERILL PARK 11KV	1625	1662	1692	1720	1740	1758	1775	1790	1804	1818	1832	1846
WEST WOLLONGONG	157	172	184	195	205	218	230	241	251	260	270	279
WESTMEAD	59	118	167	197	225	249	272	294	314	334	354	373
WETHERILL PARK	1057	1150	1227	1295	1358	1411	1461	1507	1549	1590	1631	1670
WHALAN	510	663	791	906	1012	1104	1191	1271	1346	1419	1493	1565
WILTON	114	155	189	220	237	251	265	278	290	301	313	324
WINDSOR	677	991	1252	1484	1697	1782	1861	1934	2002	2067	2133	2196
WISEMANS	196	368	510	636	752	824	891	953	1011	1065	1121	1174
WOMBARRA	229	258	283	305	325	341	357	372	385	398	411	423
WOODPARK	825	905	972	1032	1088	1136	1181	1223	1262	1300	1339	1376
YATTE YATTAH	38	49	58	66	74	80	86	92	97	102	107	112
YENNORA	665	744	810	869	922	968	1010	1049	1085	1119	1154	1187
TOTAL	**99578**	**129101**	**153355**	**174716**	**194251**	**210764**	**226172**	**240272**	**253465**	**266127**	**279120**	**291616**

Table A.11 Cumulative customers by zone substation – Endeavour Energy – Industrial (other)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0	0	0	0	0	0	0	0	0	0	0	0
ALBION PARK	68	148	214	273	327	373	417	456	493	528	564	598
AMBARVALE	0	1	1	1	2	2	2	2	3	3	3	3
ANZAC VILLAGE	20	50	75	98	119	137	154	170	186	200	215	230
APPIN	5	18	29	38	47	54	61	68	74	79	85	91
ARNDELL PARK	0	0	0	0	0	0	0	0	0	0	0	0
BAULKHAM HILLS 11KV	19	48	72	93	113	131	147	162	177	191	205	219
BELLA VISTA	99	232	343	444	537	617	693	764	831	895	960	1024
BERRY	21	53	79	102	124	142	159	175	190	204	218	232
BLACKHEATH	11	24	35	44	53	60	67	74	79	85	91	96
BLACKMANS FLAT	4	19	31	42	52	61	69	76	83	90	97	103
BLAXLAND	30	48	63	77	89	99	109	117	126	133	141	149
BOLONG	0	0	0	0	0	0	0	0	0	0	0	0
BOMADERRY	61	136	197	252	303	346	386	423	458	490	524	556
BONNYRIGG	14	39	59	77	94	109	122	135	147	158	170	181
BOSSLEY PARK	64	117	161	200	235	265	293	319	343	365	388	410
BOW BOWING	0	0	0	0	0	0	0	0	0	0	0	0
BOWRAL	29	89	138	182	223	257	289	319	347	373	400	426
BRINGELLY	4	18	30	41	51	60	69	77	85	93	101	108
BULLI	11	48	79	106	132	154	174	193	211	228	246	263
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
CAMBRIDGE PARK	113	272	405	523	632	726	815	897	974	1048	1123	1196
CAMPBELLTOWN	4	13	20	27	34	39	44	49	54	58	63	68
CANLEY VALE	31	82	125	163	198	228	256	282	306	328	352	374
CARRAMAR	0	0	0	0	0	0	0	0	0	0	0	0
CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
CASULA	15	47	74	98	120	138	156	172	188	202	217	232
CATTAI	0	0	0	0	0	0	0	0	0	0	0	0
CAWDOR	0	0	0	0	0	0	0	0	0	0	0	0
CHERITON AVENUE	59	197	314	420	519	605	687	764	837	908	982	1053
CHIPPING NORTON	0	0	0	0	0	0	0	0	0	0	0	0
CLAREMONT MEADOWS	4	13	21	27	34	39	44	49	54	58	63	67
CORRIMAL	25	74	116	152	185	213	240	264	286	308	329	350
CRANEBROOK	37	106	164	216	263	304	342	378	411	443	475	507
CULBURRA	0	0	0	0	0	0	0	0	0	0	0	0
DAPTO	81	174	251	319	382	435	485	531	574	614	656	695
DARKES FOREST	0	0	0	0	0	0	0	0	0	0	0	0
DOONSIDE	31	91	141	186	228	263	298	329	359	387	416	444
DUNDAS	31	111	179	239	295	343	388	430	469	506	545	582
EAST RICHMOND	29	84	130	171	208	240	270	298	323	348	373	397
EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
EDMONDSON PARK	0	0	0	0	0	0	0	0	0	0	0	0
EMU PLAINS	0	0	0	0	0	0	0	0	0	0	0	0
FAIRFIELD	26	56	81	103	123	140	157	171	185	198	212	224
FIGTREE	56	149	226	294	357	410	459	505	547	587	627	665
GERRINGONG	12	24	34	44	52	59	66	72	78	84	90	95
GLENMORE PARK	66	123	170	213	252	286	317	347	374	401	428	453
GLENORIE	12	29	44	57	69	80	90	99	108	116	125	133
GLOSSODIA	2	5	7	9	11	12	14	15	17	18	19	20
GRANVILLE	10	33	53	70	86	100	114	126	138	149	161	172
GREYSTANES	0	0	0	0	0	0	0	0	0	0	0	0
HARTLEY VALE	0	0	0	0	0	0	0	0	0	0	0	0
HAZELBROOK	14	26	36	44	52	59	65	70	76	81	86	91
HELENSBURGH	18	48	73	95	115	132	148	162	176	189	202	214

Table A.11 Cumulative customers by zone substation – Endeavour Energy – Industrial (other) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	65	145	212	273	329	377	423	466	507	546	586	624
HOLROYD	81	260	410	545	670	778	880	976	1065	1151	1240	1325
HOMEPRIDE	0	0	0	0	0	0	0	0	0	0	0	0
HORSLEY PARK	5	9	12	15	18	20	22	24	26	27	29	31
HUNTINGWOOD	0	0	0	0	0	0	0	0	0	0	0	0
HUSKISSON	119	302	453	588	712	817	916	1007	1092	1173	1255	1333
ILFORD HALL	1	5	8	10	13	15	17	19	20	22	24	25
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	0	0	0	0	0	0	0	0	0	0	0	0
JASPER RD	0	0	0	0	0	0	0	0	0	0	0	0
JORDAN SPRINGS	0	0	0	0	0	0	0	0	0	0	0	0
KANDOS	0	0	0	0	0	0	0	0	0	0	0	0
KANGAROO VALLEY	0	0	0	0	0	0	0	0	0	0	0	0
KATOOMBA	20	41	58	74	88	100	111	122	131	140	150	159
KELLYVILLE	0	0	0	0	0	0	0	0	0	0	0	0
KEMBLA GRANGE	0	0	0	0	0	0	0	0	0	0	0	0
KEMPS CREEK	7	20	30	39	48	56	63	69	75	81	87	93
KENNY STREET	0	0	0	0	0	0	0	0	0	0	0	0
KENTHURST	50	134	203	266	325	375	423	467	509	550	591	631
KENTLYN	116	297	448	582	705	811	911	1003	1088	1170	1254	1333
KIAMA	39	95	142	184	223	256	288	317	344	369	396	421
KINGSWOOD	65	215	339	451	553	642	725	802	875	944	1014	1082
KURRAJONG	19	53	82	107	130	149	168	184	200	215	230	244
LEABONS LANE	0	0	0	0	0	0	0	0	0	0	0	0
LENNOX	3	20	34	46	58	68	77	86	94	102	110	118
LITHGOW	30	82	125	162	197	226	254	279	302	324	347	368
LIVERPOOL 11KV	118	400	638	851	1050	1221	1384	1535	1677	1814	1956	2092
LUDDENHAM	0	0	0	0	0	0	0	0	0	0	0	0
MACQUARIE FIELDS	92	276	429	566	691	797	898	990	1076	1158	1241	1321
MALDON	38	118	185	245	301	348	394	435	475	512	551	588
MAMRE	51	116	170	219	264	302	339	373	404	435	466	496
MARAYONG	0	0	0	0	0	0	0	0	0	0	0	0
MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
MEADOW FLAT	2	4	6	8	10	11	13	14	15	16	17	18
MINTO	68	141	202	256	306	348	388	425	459	492	525	556
MITTAGONG	39	92	137	177	214	246	276	304	330	355	381	406
MOOREBANK	0	0	0	0	0	0	0	0	0	0	0	0
MOSS VALE	40	102	154	200	243	279	313	344	373	400	429	455
MOUNT OUSLEY	23	68	105	138	168	193	217	239	260	279	298	317
MUNGERIE PARK	200	421	606	772	926	1059	1184	1301	1411	1516	1624	1729
NARELLAN	144	276	390	495	596	685	772	856	936	1016	1101	1186
NEPEAN 11KV	148	345	515	673	823	957	1087	1212	1334	1454	1582	1709
NEWTON	83	156	218	273	324	368	409	448	484	519	554	589
NORTH EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
NORTH LEPPINGTON	0	0	0	0	0	0	0	0	0	0	0	0
NORTH PARRAMATTA	21	59	92	121	148	172	194	216	235	255	274	294
NORTH RICHMOND	20	52	78	101	122	141	158	173	188	202	216	229
NORTH ROCKS	0	0	0	0	0	0	0	0	0	0	0	0
NORTH WARRAGAMBA	16	54	85	114	140	163	184	204	222	240	259	276
NORTH WOLLONGONG	32	114	183	243	298	345	390	430	467	502	538	573
NORTHMEAD	6	20	32	42	52	60	68	76	83	90	97	104
NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
OAKDALE	0	0	0	0	0	0	0	0	0	0	0	0
ORAN PARK	0	0	0	0	0	0	0	0	0	0	0	0
PARKLEA	102	192	267	335	398	453	505	553	599	643	688	732
PENRITH 11KV	0	0	0	0	0	0	0	0	0	0	0	0
PLUMPTON	56	156	240	315	385	445	501	554	603	651	699	746

Table A.11 Cumulative customers by zone substation – Endeavour Energy – Industrial (other) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	7	30	49	66	81	95	107	118	129	139	149	159
PORT KEMBLA	13	56	92	124	153	178	201	223	242	261	281	299
PORTLAND	15	32	45	57	68	78	86	94	102	109	116	123
PRESTONS	46	94	135	172	207	237	266	293	319	344	369	394
PROSPECT	0	0	0	0	0	0	0	0	0	0	0	0
QUAKERS HILL	50	133	202	264	322	371	418	462	502	542	582	620
QUARRIES	0	0	0	0	0	0	0	0	0	0	0	0
RINGWOOD	12	27	40	51	61	69	78	85	92	99	105	112
RIVERSTONE	172	362	520	662	792	905	1011	1109	1201	1288	1378	1465
ROBERTSON	0	0	0	0	0	0	0	0	0	0	0	0
ROOTY HILL	84	205	307	398	482	555	624	688	748	805	864	921
ROSEHILL	0	0	0	0	0	0	0	0	0	0	0	0
RUSSELL VALE	21	67	106	140	171	197	222	244	265	285	305	325
RYDALMERE	36	115	182	242	298	346	392	435	475	514	554	592
SCHOFIELDS	76	166	242	310	373	427	478	526	570	613	657	699
SEVEN HILLS	52	123	183	237	287	330	370	408	443	478	512	546
SHELLHARBOUR	50	141	218	285	348	401	452	499	542	583	626	667
SHERWOOD	57	145	219	285	345	398	447	493	535	576	618	658
SMITHFIELD	21	44	64	81	96	110	122	134	144	154	164	174
SOUTH GRANVILLE	0	1	1	1	1	2	2	2	2	3	3	3
SOUTH LEPPINGTON	49	119	178	230	279	321	360	397	432	465	499	531
SOUTH MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH WINDSOR	78	182	269	347	418	479	537	590	639	686	734	780
SOUTH WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
SPRINGWOOD	34	58	79	97	114	128	141	153	164	175	185	196
ST MARYS	40	140	222	297	365	424	480	531	580	626	673	719
SUSSEX INLET	0	0	0	0	0	0	0	0	0	0	0	0
TAHMOOR	33	117	186	249	306	356	402	446	486	525	565	603
THE OAKS	0	0	0	0	0	0	0	0	0	0	0	0
TOMERONG	0	0	0	0	0	0	0	0	0	0	0	0
ULLADULLA	58	150	226	294	357	410	460	505	548	589	630	669
UNANDERRA	13	42	66	87	106	123	138	152	165	177	190	202
WARILLA	25	77	121	160	196	227	256	282	307	331	355	378
WENTWORTH FALLS	11	25	36	46	55	63	71	77	84	90	96	102
WERRINGTON	0	0	0	0	0	0	0	0	0	0	0	0
WEST CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
WEST LIVERPOOL 11KV	41	124	194	256	314	365	412	456	498	538	579	619
WEST PARRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
WEST PENNANT HILLS	21	51	77	100	121	139	156	173	188	202	218	232
WEST WETHERILL PARK 11KV	0	0	0	0	0	0	0	0	0	0	0	0
WEST WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
WESTMEAD	0	0	0	0	0	0	0	0	0	0	0	0
WETHERILL PARK	0	0	0	0	0	0	0	0	0	0	0	0
WHALAN	0	0	0	0	0	0	0	0	0	0	0	0
WILTON	0	0	0	0	0	0	0	0	0	0	0	0
WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0
WISEMANS	1	7	12	16	20	23	26	29	31	34	36	39
WOMBARRA	17	47	71	93	113	130	146	161	174	187	200	212
WOODPARK	0	0	0	0	0	0	0	0	0	0	0	0
YATTE YATTAH	0	0	0	0	0	0	0	0	0	0	0	0
YENNORA	3	9	15	19	24	27	31	34	37	39	42	45
TOTAL	**4191**	**10575**	**15915**	**20693**	**25110**	**28914**	**32513**	**35846**	**38968**	**41967**	**45045**	**48006**

Table A.12 Cumulative capacity by zone substation – Solar only installations – Endeavour Energy – Total ZSS												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
ABBOTSBURY	10409	11822	13024	14141	15227	16205	17176	18124	19065	20028	21052	22073
ALBION PARK	15922	17909	19573	21088	22530	23741	24919	26045	27128	28212	29343	30451
AMBARVALE	8743	10320	11651	12868	14043	15091	16121	17116	18095	19087	20130	21161
ANZAC VILLAGE	7691	8892	9912	10858	11774	12595	13408	14197	14976	15770	16609	17442
APPIN	2613	3357	3981	4552	5098	5559	6011	6444	6867	7292	7738	8175
ARNDELL PARK	4049	4887	5595	6249	6882	7448	8005	8546	9078	9619	10188	10753
BAULKHAM HILLS 11KV	8125	9583	10821	11967	13078	14075	15060	16017	16962	17924	18941	19951
BELLA VISTA	14247	16718	18810	20739	22598	24256	25887	27463	29010	30574	32224	33856
BERRY	5081	6074	6876	7609	8309	8920	9516	10088	10643	11201	11783	12355
BLACKHEATH	2794	3141	3430	3693	3944	4165	4380	4586	4785	4985	5193	5396
BLACKMANS FLAT	1238	1880	2418	2910	3382	3799	4206	4597	4979	5362	5763	6156
BLAXLAND	8425	9095	9654	10162	10646	11056	11455	11836	12206	12575	12959	13334
BOLONG	893	1141	1348	1537	1718	1878	2035	2184	2330	2476	2628	2778
BOMADERRY	10001	11506	12766	13913	15003	15962	16893	17779	18638	19494	20386	21257
BONNYRIGG	9657	11356	12788	14104	15362	16481	17579	18637	19675	20723	21824	22910
BOSSLEY PARK	8780	9717	10497	11204	11872	12458	13022	13558	14073	14584	15114	15629
BOW BOWING	4414	5122	5715	6253	6761	7207	7638	8047	8441	8831	9237	9633
BOWRAL	6839	8801	10444	11942	13370	14600	15797	16941	18053	19167	20328	21466
BRINGELLY	2579	3688	4639	5528	6395	7179	7960	8725	9487	10268	11105	11947
BULLI	5649	7746	9513	11137	12697	14086	15414	16697	17956	19230	20570	21896
BYLONG	72	109	140	168	195	219	242	264	285	307	329	352
CABRAMATTA	3084	4021	4811	5538	6238	6862	7476	8068	8649	9237	9856	10466
CAMBRIDGE PARK	12065	13889	15425	16831	18175	19366	20527	21641	22725	23813	24952	26072
CAMPBELLTOWN	7148	9090	10744	12280	13772	15114	16445	17744	19031	20347	21747	23149
CANLEY VALE	7930	9458	10740	11914	13038	14035	15008	15943	16856	17774	18734	19677
CARRAMAR	2700	3570	4297	4959	5591	6148	6690	7208	7711	8215	8740	9252
CASTLE HILL	3577	6461	8884	11104	13229	15112	16953	18720	20445	22178	23992	25775
CASULA	9948	12063	13843	15477	17045	18438	19802	21114	22398	23691	25048	26383
CATTAI	3838	4996	5968	6856	7705	8456	9189	9891	10575	11261	11978	12682
CAWDOR	6187	8072	9695	11221	12721	14087	15459	16812	18171	19577	21090	22620
CHERITON AVENUE	6815	8844	10573	12173	13720	15106	16475	17803	19111	20439	21848	23251
CHIPPING NORTON	5175	5904	6526	7104	7665	8169	8670	9157	9639	10132	10655	11177
CLAREMONT MEADOWS	7204	9661	11750	13690	15576	17272	18954	20595	22221	23884	25648	27409
CORRIMAL	7003	8523	9791	10943	12034	12993	13920	14803	15655	16503	17383	18241
CRANEBROOK	6595	8186	9525	10753	11929	12972	13991	14971	15927	16888	17895	18885
CULBURRA	4516	5611	6530	7371	8178	8894	9594	10267	10924	11586	12278	12957
DAPTO	17655	20004	21970	23763	25472	26982	28451	29855	31219	32585	34009	35402
DARKES FOREST	76	233	365	485	599	700	798	891	982	1072	1166	1258
DOONSIDE	17123	20389	23151	25702	28167	30369	32540	34642	36711	38811	41023	43214
DUNDAS	7145	9271	11064	12715	14306	15723	17115	18460	19779	21114	22517	23903
EAST RICHMOND	4519	5203	5775	6292	6779	7205	7615	8003	8374	8741	9121	9491
EASTERN CREEK	561	598	630	659	686	709	732	754	774	794	815	835
EDMONDSON PARK	3887	4866	5692	6450	7180	7829	8465	9079	9680	10287	10924	11552
EMU PLAINS	7341	8131	8793	9398	9976	10488	10987	11465	11930	12397	12885	13363
FAIRFIELD	4142	4630	5037	5408	5761	6071	6373	6660	6939	7217	7506	7789
FIGTREE	10112	11840	13281	14587	15824	16908	17957	18952	19911	20864	21853	22815
GERRINGONG	3345	3648	3903	4135	4357	4554	4746	4929	5108	5287	5475	5659
GLENMORE PARK	14441	16107	17511	18803	20043	21147	22230	23272	24293	25324	26406	27473
GLENORIE	2229	2693	3086	3448	3797	4108	4413	4709	4998	5291	5599	5904
GLOSSODIA	4695	5962	7022	7989	8913	9728	10523	11283	12023	12764	13536	14292
GRANVILLE	3514	4526	5385	6180	6949	7638	8318	8978	9629	10291	10991	11686
GREYSTANES	4468	5120	5672	6182	6674	7114	7548	7969	8383	8803	9247	9686
HARTLEY VALE	165	187	204	220	236	249	262	275	287	299	311	323
HAZELBROOK	4615	5031	5377	5694	5995	6260	6519	6766	7005	7245	7495	7739
HELENSBURGH	2893	3408	3837	4227	4598	4924	5240	5541	5833	6123	6425	6719

Table A.12 Cumulative capacity by zone substation – Solar only installations – Endeavour Energy – Total ZSS (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
HINCHINBROOK	16669	18918	20823	22579	24269	25777	27259	28690	30094	31513	33009	34490
HOLROYD	9684	12332	14575	16646	18645	20431	22191	23894	25569	27269	29061	30838
HOMEPRIDE	2516	3623	4558	5412	6221	6934	7625	8283	8918	9549	10209	10856
HORSLEY PARK	2273	2407	2519	2621	2717	2802	2884	2961	3036	3110	3187	3262
HUNTINGWOOD	1615	1896	2130	2344	2545	2728	2904	3071	3232	3391	3556	3718
HUSKISSON	10184	12119	13640	15020	16323	17465	18568	19614	20621	21619	22654	23663
ILFORD HALL	262	382	481	572	657	732	805	873	940	1006	1074	1141
INNER HARBOUR	37	39	40	42	43	44	44	45	46	47	47	48
JAMBEROO	1513	1879	2187	2470	2742	2980	3213	3438	3658	3881	4114	4344
JASPER RD	8012	9119	10059	10930	11773	12530	13277	14004	14720	15450	16221	16988
JORDAN SPRINGS	7459	8491	9360	10158	10924	11605	12273	12916	13546	14181	14847	15503
KANDOS	1551	2779	3804	4738	5628	6412	7175	7903	8610	9318	10054	10773
KANGAROO VALLEY	1017	1267	1477	1668	1851	2009	2163	2311	2455	2600	2751	2899
KATOOMBA	5120	5716	6214	6667	7098	7478	7846	8197	8537	8876	9229	9574
KELLYVILLE	6166	7238	8149	8994	9815	10553	11284	11995	12699	13418	14178	14935
KEMBLA GRANGE	2954	3553	4057	4519	4964	5360	5748	6123	6490	6862	7252	7637
KEMPS CREEK	2481	3009	3450	3853	4236	4576	4909	5229	5542	5856	6186	6512
KENNY STREET	583	605	624	640	656	669	682	693	704	714	725	735
KENTHURST	7822	10252	12238	14071	15837	17414	18965	20465	21937	23428	24999	26556
KENTLYN	14067	16749	18881	20829	22685	24324	25919	27444	28925	30407	31954	33471
KIAMA	7746	9014	10082	11062	12002	12836	13653	14439	15208	15982	16793	17592
KINGSWOOD	9887	12925	15480	17812	20030	21987	23889	25704	27462	29217	31050	32847
KURRAJONG	5318	6731	7914	8995	10029	10943	11835	12690	13522	14358	15230	16084
LEABONS LANE	4675	6026	7170	8226	9249	10163	11065	11939	12801	13676	14598	15512
LENNOX	1273	2091	2663	3180	3663	4084	4487	4865	5224	5574	5937	6290
LITHGOW	6897	8247	9374	10399	11373	12230	13062	13855	14623	15389	16186	16963
LIVERPOOL 11KV	7934	8727	9392	9986	10532	11000	11441	11846	12221	12577	12941	13290
LUDDENHAM	2019	3192	4198	5130	6033	6852	7669	8472	9274	10100	10984	11873
MACQUARIE FIELDS	12657	15500	17880	19943	21902	23626	25298	26891	28431	29966	31564	33125
MALDON	8415	11454	14016	16246	18388	20295	22165	23967	25732	27513	29386	31234
MAMRE	11845	13624	15125	16508	17839	19011	20164	21277	22369	23473	24635	25782
MARAYONG	4988	6734	8209	9563	10791	11884	12957	13991	15003	16025	17100	18161
MARSDEN PARK	9294	10036	10655	11218	11755	12233	12702	13155	13599	14049	14520	14986
MEADOW FLAT	526	653	759	855	943	1020	1095	1166	1235	1303	1374	1443
MINTO	19580	21933	23905	25706	27425	28943	30421	31835	33210	34587	36023	37431
MITTAGONG	8239	9715	10960	12104	13204	14168	15114	16025	16918	17819	18765	19699
MOOREBANK	3659	4678	5541	6335	7096	7774	8438	9078	9704	10334	10997	11652
MOSS VALE	7975	9654	11059	12337	13549	14615	15648	16631	17581	18528	19512	20474
MOUNT OUSLEY	4892	6137	7176	8120	9015	9802	10565	11291	11992	12691	13417	14125
MUNGERIE PARK	34475	38931	42698	46166	49499	52467	55380	58189	60940	63718	66640	69528
NARELLAN	22726	25483	27882	30149	32387	34433	36498	38542	40600	42735	45047	47400
NEPEAN 11KV	16763	20091	22992	25750	28489	30946	33441	35930	38453	41091	43961	46893
NEWTON	6488	7271	7933	8542	9128	9650	10162	10657	11142	11632	12147	12656
NORTH EASTERN CREEK	394	431	462	490	516	539	561	582	602	621	641	661
NORTH LEPPINGTON	1103	1844	2475	3061	3619	4122	4620	5107	5589	6081	6605	7127
NORTH PARRAMATTA	3775	4692	5472	6195	6897	7541	8178	8797	9407	10028	10685	11339
NORTH RICHMOND	4575	5791	6809	7737	8621	9400	10158	10882	11584	12287	13019	13735
NORTH ROCKS	3992	4783	5455	6080	6688	7235	7778	8306	8830	9365	9933	10498
NORTH WARRAGAMBA	4421	6120	7555	8879	10156	11287	12401	13479	14538	15613	16746	17867
NORTH WOLLONGONG	2101	2998	3743	4410	4940	5399	5837	6246	6634	7012	7401	7776
NORTHMEAD	4015	4997	5830	6604	7353	8025	8690	9336	9974	10624	11311	11995
NOWRA	7198	9029	10564	11965	13300	14478	15625	16721	17786	18852	19963	21052
OAKDALE	877	1387	1818	2215	2598	2938	3273	3596	3914	4234	4572	4906
ORAN PARK	13238	17704	21603	25323	29037	32469	35965	39466	43030	46771	50848	55022
PARKLEA	34256	37843	40883	43692	46402	48824	51133	53372	55577	57816	60183	62534
PENRITH 11KV	2840	4211	5360	6399	7374	8225	8941	9618	10265	10902	11563	12207
PLUMPTON	11783	13865	15624	17245	18806	20197	21565	22886	24181	25492	26870	28233

Table A.12 Cumulative capacity by zone substation – Solar only installations – Endeavour Energy – Total ZSS (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	1845	2446	2947	3399	3825	4196	4553	4890	5212	5530	5859	6178
PORT KEMBLA	4487	6028	7318	8495	9615	10604	11566	12484	13376	14268	15198	16108
PORTLAND	1895	2207	2467	2703	2927	3125	3316	3498	3675	3851	4033	4211
PRESTONS	13929	15763	17329	18787	20207	21503	22790	24048	25296	26574	27934	29294
PROSPECT	5678	6220	6680	7107	7520	7895	8266	8627	8983	9346	9730	10111
QUAKERS HILL	15085	17731	19968	22033	24026	25805	27557	29252	30919	32608	34387	36148
QUARRIES	2910	3399	3813	4194	4561	4887	5208	5518	5822	6129	6452	6772
RINGWOOD	3680	4318	4853	5341	5806	6216	6616	6998	7370	7741	8129	8509
RIVERSTONE	10974	12133	13106	13987	14816	15540	16237	16895	17526	18147	18791	19419
ROBERTSON	2331	3043	3645	4201	4738	5217	5689	6146	6595	7051	7531	8006
ROOTY HILL	13880	16278	18304	20171	21968	23569	25143	26661	28151	29657	31241	32807
ROSEHILL	752	1046	1295	1524	1743	1938	2129	2312	2491	2671	2861	3048
RUSSELL VALE	6114	7725	9070	10292	11452	12471	13459	14399	15309	16215	17156	18074
RYDALMERE	6462	7993	9292	10492	11651	12688	13710	14699	15673	16661	17704	18738
SCHOFIELDS	17468	20658	23356	25846	28248	30394	32507	34551	36561	38598	40745	42869
SEVEN HILLS	5350	5833	6240	6612	6966	7279	7583	7873	8154	8435	8728	9017
SHELLHARBOUR	12221	14917	17182	19252	21227	22973	24673	26300	27882	29466	31121	32744
SHERWOOD	5430	6488	7376	8186	8956	9634	10293	10922	11531	12138	12773	13396
SMITHFIELD	10564	11968	13139	14205	15218	16131	17017	17861	18677	19492	20338	21163
SOUTH GRANVILLE	3276	4270	5110	5885	6634	7303	7963	8602	9230	9869	10542	11208
SOUTH LEPPINGTON	9723	11998	13917	15684	17382	18895	20382	21816	23223	24646	26144	27626
SOUTH MARSDEN PARK	2394	3680	4773	5784	6762	7646	8525	9387	10244	11123	12062	13006
SOUTH NOWRA	2553	2915	3217	3491	3749	3975	4194	4401	4600	4798	5002	5202
SOUTH WINDSOR	9816	11962	13748	15369	16904	18262	19586	20854	22088	23326	24619	25889
SOUTH WOLLONGONG	1685	2143	2524	2865	3182	3456	3717	3961	4191	4416	4647	4869
SPRINGWOOD	9434	10292	11008	11661	12284	12833	13367	13877	14373	14869	15385	15890
ST MARYS	7725	9864	11666	13318	14899	16300	17669	18982	20263	21550	22898	24225
SUSSEX INLET	2889	3715	4411	5050	5664	6201	6728	7235	7733	8234	8761	9281
TAHMOOR	7853	10812	13309	15605	17813	19777	21705	23564	25384	27223	29155	31063
THE OAKS	2713	3486	4151	4778	5394	5956	6522	7081	7642	8225	8852	9487
TOMERONG	5481	5984	6405	6792	7162	7490	7812	8121	8423	8727	9045	9356
ULLADULLA	12467	14499	16198	17744	19213	20505	21758	22952	24107	25259	26457	27628
UNANDERRA	2825	3320	3733	4108	4462	4773	5073	5358	5632	5905	6188	6463
WARILLA	8332	10367	12077	13550	14961	16211	17433	18605	19749	20899	22102	23284
WENTWORTH FALLS	3134	3573	3942	4279	4601	4870	5132	5384	5629	5877	6135	6390
WERRINGTON	7447	9424	11088	12606	14048	15318	16552	17565	18549	19536	20570	21585
WEST CASTLE HILL	6975	8397	9604	10722	11806	12779	13740	14673	15595	16534	17526	18513
WEST LIVERPOOL 11KV	7597	9479	11068	12526	13919	15153	16359	17514	18639	19767	20951	22117
WEST PARRAMATTA	531	668	783	886	983	1086	1184	1276	1363	1448	1536	1621
WEST PENNANT HILLS	7836	9130	10228	11245	12229	13110	13981	14826	15659	16505	17400	18289
WEST WETHERILL PARK 11KV	1663	1701	1732	1760	1780	1798	1815	1830	1845	1859	1873	1887
WEST WOLLONGONG	3469	4391	5160	5863	6535	7133	7715	8273	8816	9361	9928	10483
WESTMEAD	308	418	511	581	647	707	765	820	874	928	985	1041
WETHERILL PARK	1986	2119	2230	2329	2421	2500	2575	2645	2711	2776	2842	2905
WHALAN	7006	7895	8645	9335	9999	10590	11169	11728	12275	12827	13407	13980
WILTON	2016	2355	2640	2901	3141	3355	3565	3767	3965	4165	4375	4582
WINDSOR	4820	5923	6839	7666	8443	9030	9600	10145	10675	11205	11758	12299
WISEMANS	1072	1466	1794	2092	2371	2588	2798	2996	3187	3376	3572	3762
WOMBARRA	3006	3601	4097	4549	4980	5359	5728	6080	6421	6762	7117	7464
WOODPARK	1102	1261	1393	1511	1621	1718	1811	1900	1985	2070	2158	2245
YATTE YATTAH	1640	2145	2572	2966	3346	3687	4023	4348	4668	4993	5336	5675
YENNORA	4341	5367	6224	7006	7751	8408	9047	9658	10251	10845	11463	12068
TOTAL	**1055928**	**1264788**	**1440610**	**1601906**	**1756622**	**1894014**	**2028624**	**2158239**	**2285250**	**2413546**	**2548548**	**2681995**

Table A.13 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Residential												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	187	235	296	370	475	605	774	978	1225	1525	1899	2332
ALBION PARK	268	323	392	475	590	732	912	1127	1383	1689	2064	2491
AMBARVALE	158	210	275	355	466	604	779	991	1244	1549	1926	2358
ANZAC VILLAGE	133	171	220	279	363	467	600	762	957	1193	1487	1825
APPIN	45	67	94	128	175	232	305	392	496	621	775	950
ARNDELL PARK	65	92	126	169	228	301	395	508	644	808	1011	1244
BAULKHAM HILLS 11KV	138	185	244	317	419	546	709	907	1145	1434	1792	2205
BELLA VISTA	234	305	393	502	654	843	1086	1381	1734	2162	2693	3304
BERRY	85	112	147	189	247	319	410	520	650	806	998	1217
BLACKHEATH	47	58	72	88	111	138	173	215	264	323	395	476
BLACKMANS FLAT	21	42	68	100	144	198	267	349	446	563	706	869
BLAXLAND	145	165	190	220	261	312	375	452	542	649	780	929
BOLONG	15	23	32	44	60	79	104	134	169	211	263	322
BOMADERRY	163	202	251	311	393	494	623	777	960	1179	1448	1753
BONNYRIGG	170	222	287	367	478	615	791	1002	1255	1560	1936	2367
BOSSLEY PARK	142	166	195	231	280	340	416	507	614	742	898	1075
BOW BOWING	69	84	103	127	160	200	251	312	384	471	578	699
BOWRAL	112	167	235	319	434	575	755	971	1226	1533	1910	2338
BRINGELLY	41	71	108	155	222	306	416	551	716	919	1175	1475
BULLI	97	162	241	340	476	644	860	1120	1431	1806	2269	2801
BYLONG	1	3	4	6	9	12	16	21	26	33	41	51
CABRAMATTA	50	81	119	165	230	310	412	536	683	861	1079	1330
CAMBRIDGE PARK	199	246	304	377	477	601	759	951	1179	1455	1794	2184
CAMPBELLTOWN	112	169	241	331	457	615	819	1069	1371	1740	2202	2740
CANLEY VALE	135	183	244	317	419	544	704	895	1122	1395	1729	2111
CARRAMAR	45	73	107	149	207	278	367	474	600	751	935	1143
CASTLE HILL	60	147	256	389	573	800	1089	1436	1849	2345	2955	3651
CASULA	173	237	316	414	549	717	931	1188	1495	1864	2320	2841
CATTAI	63	98	141	194	267	356	470	607	770	965	1204	1477
CAWDOR	107	166	240	334	466	634	854	1125	1456	1866	2383	2991
CHERITON AVENUE	110	161	226	306	419	561	744	968	1239	1570	1983	2463
CHIPPING NORTON	82	104	131	166	213	273	351	445	559	699	872	1074
CLAREMONT MEADOWS	125	207	311	438	617	839	1126	1475	1895	2406	3043	3779
CORRIMAL	117	159	210	272	358	463	596	755	942	1167	1440	1751
CRANEBROOK	109	154	211	281	377	496	648	832	1050	1313	1637	2009
CULBURRA	79	116	161	217	293	387	507	650	820	1024	1274	1558
DAPTO	302	373	460	567	714	895	1124	1399	1724	2113	2590	3131
DARKES FOREST	1	5	10	17	25	36	50	66	86	109	138	170
DOONSIDE	302	407	539	702	928	1209	1569	2005	2526	3156	3935	4831
DUNDAS	121	188	272	375	518	695	922	1196	1522	1917	2403	2961
EAST RICHMOND	71	84	100	119	146	179	221	271	331	402	490	590
EASTERN CREEK	2	2	2	3	4	5	6	8	10	13	16	19
EDMONDSON PARK	68	99	138	186	252	333	437	562	712	891	1113	1367
EMU PLAINS	127	151	182	219	269	332	412	507	620	755	922	1111
FAIRFIELD	62	76	93	114	144	179	224	278	342	419	512	619
FIGTREE	168	213	268	336	429	542	686	858	1061	1303	1600	1936
GERRINGONG	56	65	75	88	106	128	156	190	230	278	338	406
GLENMORE PARK	249	299	362	439	545	677	847	1050	1294	1587	1950	2365
GLENORIE	36	49	65	85	112	147	191	244	308	386	483	594
GLOSSODIA	81	121	170	230	313	414	542	696	878	1095	1362	1664
GRANVILLE	56	87	126	174	242	326	434	565	723	914	1152	1426
GREYSTANES	76	97	124	156	201	257	329	417	521	647	803	983
HARTLEY VALE	3	3	4	5	6	8	10	12	15	18	22	27
HAZELBROOK	80	93	109	129	157	190	233	283	343	414	502	600
HELENSBURGH	47	62	80	103	133	171	218	275	341	421	519	630

Table A.13 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Residential (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	284	345	421	515	647	811	1022	1278	1586	1959	2422	2955
HOLROYD	155	234	334	457	628	841	1115	1447	1845	2328	2926	3615
HOMEPRIDE	28	45	67	93	130	176	235	307	393	498	628	777
HORSLEY PARK	35	37	41	45	50	57	66	77	90	105	124	145
HUNTINGWOOD	22	28	35	44	57	72	91	115	142	176	217	263
HUSKISSON	159	199	249	309	393	496	626	783	968	1191	1464	1775
ILFORD HALL	4	7	11	16	23	31	41	53	67	84	105	129
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	26	38	53	71	96	127	166	213	269	337	420	516
JASPER RD	143	178	221	274	349	442	562	707	882	1095	1359	1664
JORDAN SPRINGS	132	164	204	253	322	406	513	643	797	983	1211	1473
KANDOS	26	65	114	173	254	353	478	628	805	1016	1273	1565
KANGAROO VALLEY	17	25	34	46	62	82	108	138	174	217	270	330
KATOOMBA	83	100	120	145	179	220	273	337	412	502	613	738
KELLYVILLE	111	147	192	248	326	423	548	700	882	1104	1379	1696
KEMBLA GRANGE	52	71	96	125	167	218	283	361	455	567	706	865
KEMPS CREEK	37	50	67	88	116	151	196	251	316	395	493	606
KENNY STREET	1	2	2	2	2	3	3	4	5	6	7	8
KENTHURST	125	190	272	374	515	692	918	1193	1523	1924	2421	2994
KENTLYN	233	300	384	487	628	803	1026	1294	1613	1995	2466	3004
KIAMA	130	168	216	274	355	454	582	735	918	1138	1409	1719
KINGSWOOD	158	225	310	413	557	735	962	1237	1564	1959	2447	3005
KURRAJONG	90	135	192	261	356	473	621	798	1008	1259	1566	1916
LEABONS LANE	82	127	183	252	348	468	621	806	1027	1295	1626	2007
LENNOX	13	17	21	27	35	44	57	72	90	112	139	171
LITHGOW	113	152	202	261	343	444	571	723	903	1118	1380	1677
LIVERPOOL 11KV	115	110	103	95	84	69	51	29	2	-30	-71	-117
LUDDENHAM	33	71	118	176	257	359	492	655	854	1097	1404	1762
MACQUARIE FIELDS	208	276	360	462	604	779	1001	1267	1583	1963	2428	2958
MALDON	138	222	327	457	636	859	1144	1488	1899	2396	3010	3715
MAMRE	199	253	322	406	522	667	852	1076	1343	1666	2064	2522
MARAYONG	81	128	186	258	357	481	640	831	1061	1339	1682	2076
MARSDEN PARK	168	193	224	261	312	375	455	551	666	805	975	1170
MEADOW FLAT	9	12	16	21	28	37	48	61	77	95	117	143
MINTO	330	398	482	585	727	902	1124	1391	1707	2087	2552	3083
MITTAGONG	134	176	229	295	385	498	642	815	1023	1274	1583	1939
MOOREBANK	56	82	113	153	207	276	363	469	597	752	944	1165
MOSS VALE	129	170	222	285	373	480	616	780	974	1207	1492	1817
MOUNT OUSLEY	79	114	157	210	282	370	482	616	774	962	1193	1454
MUNGERIE PARK	577	700	855	1045	1310	1640	2063	2575	3188	3930	4849	5906
NARELLAN	370	439	528	641	803	1011	1285	1628	2051	2579	3253	4053
NEPEAN 11KV	270	367	493	653	883	1177	1567	2054	2655	3407	4367	5508
NEWTON	93	116	144	179	228	288	366	460	572	708	876	1069
NORTH EASTERN CREEK	1	2	2	3	3	4	6	7	9	11	13	16
NORTH LEPPINGTON	19	43	72	109	160	223	306	406	527	674	858	1071
NORTH PARRAMATTA	56	83	118	161	221	296	393	511	654	827	1042	1291
NORTH RICHMOND	76	110	153	205	276	364	476	610	769	959	1193	1458
NORTH ROCKS	69	96	129	171	229	302	395	509	646	812	1018	1256
NORTH WARRAGAMBA	75	128	196	278	393	536	718	939	1203	1523	1918	2372
NORTH WOLLONGONG	25	36	49	65	87	115	149	190	239	297	368	448
NORTHMEAD	67	98	137	184	251	335	442	572	729	920	1157	1430
NOWRA	121	173	238	317	425	559	729	933	1175	1465	1821	2226
OAKDALE	15	31	50	74	106	147	200	263	339	430	543	673
ORAN PARK	236	386	580	827	1180	1633	2233	2981	3907	5062	6539	8293
PARKLEA	588	690	818	977	1198	1474	1829	2260	2778	3407	4189	5092
PENRITH 11KV	33	49	70	95	130	173	228	295	375	471	589	725
PLUMPTON	202	264	342	438	571	736	948	1205	1511	1882	2341	2868

Table A.13 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Residential (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	27	38	52	69	92	121	157	201	253	315	391	477
PORT KEMBLA	74	118	173	239	331	444	588	760	964	1208	1508	1849
PORTLAND	31	40	51	64	82	105	134	168	208	257	316	383
PRESTONS	243	300	372	462	588	746	951	1201	1504	1873	2336	2873
PROSPECT	95	112	134	161	199	247	308	381	470	578	712	866
QUAKERS HILL	259	342	446	573	751	972	1255	1597	2006	2502	3115	3819
QUARRIES	47	61	79	100	130	167	215	272	341	425	529	648
RINGWOOD	61	79	102	130	168	215	275	347	432	534	660	802
RIVERSTONE	161	177	197	223	257	300	355	422	501	597	715	850
ROBERTSON	39	61	89	124	172	232	309	402	513	648	814	1006
ROOTY HILL	226	297	386	495	647	836	1078	1371	1721	2145	2668	3270
ROSEHILL	7	13	22	32	47	65	88	117	151	192	244	303
RUSSELL VALE	103	148	204	273	367	482	628	802	1007	1253	1553	1894
RYDALMERE	96	141	197	266	363	483	638	826	1052	1326	1667	2060
SCHOFIELDS	303	404	530	685	901	1168	1512	1927	2424	3025	3768	4622
SEVEN HILLS	74	84	96	111	131	157	190	230	278	336	408	491
SHELLHARBOUR	204	275	364	473	623	809	1046	1331	1670	2078	2581	3155
SHERWOOD	85	108	136	171	219	278	354	446	556	688	852	1040
SMITHFIELD	182	224	276	340	427	534	670	831	1022	1249	1527	1843
SOUTH GRANVILLE	55	88	130	181	252	339	452	588	750	946	1189	1467
SOUTH LEPPINGTON	167	234	318	422	566	745	974	1250	1582	1982	2478	3048
SOUTH MARSDEN PARK	39	76	122	179	258	358	489	649	844	1083	1384	1735
SOUTH NOWRA	37	45	55	66	83	102	128	158	194	237	290	351
SOUTH WINDSOR	145	205	279	370	493	645	840	1073	1351	1684	2095	2564
SOUTH WOLLONGONG	22	28	36	45	57	72	91	114	141	173	212	257
SPRINGWOOD	162	190	224	265	322	391	479	583	707	855	1036	1240
ST MARYS	130	186	255	341	460	608	797	1025	1297	1626	2032	2497
SUSSEX INLET	51	76	108	146	200	267	352	454	576	723	904	1112
TAHMOOR	134	222	332	468	656	889	1188	1548	1979	2499	3141	3878
THE OAKS	48	74	107	149	207	281	378	498	644	823	1051	1317
TOMERONG	97	114	134	159	194	236	290	355	432	524	637	765
ULLADULLA	205	258	324	404	514	650	822	1029	1274	1568	1928	2338
UNANDERRA	37	50	66	85	111	144	185	233	291	360	445	540
WARILLA	143	200	271	359	480	629	818	1047	1318	1644	2045	2503
WENTWORTH FALLS	53	66	81	99	125	156	196	245	302	372	457	554
WERRINGTON	115	155	206	268	355	463	600	766	964	1204	1499	1838
WEST CASTLE HILL	119	164	220	289	387	508	664	853	1081	1357	1701	2097
WEST LIVERPOOL 11KV	119	161	214	278	368	480	624	798	1007	1261	1575	1936
WEST PARRAMATTA	1	1	2	2	3	5	6	8	11	13	17	21
WEST PENNANT HILLS	138	177	227	288	373	480	617	784	984	1227	1528	1877
WEST WETHERILL PARK 11KV	1	1	1	1	1	1	1	1	1	1	1	1
WEST WOLLONGONG	61	92	130	176	240	318	418	536	676	843	1047	1279
WESTMEAD	5	6	8	11	15	20	26	33	42	53	66	82
WETHERILL PARK	17	18	20	22	25	28	33	38	44	52	61	71
WHALAN	119	144	176	214	268	335	420	524	648	798	983	1196
WILTON	35	45	58	73	95	121	155	196	245	304	377	460
WINDSOR	76	103	136	176	230	297	383	485	606	751	930	1133
WISEMANS	16	23	33	44	59	78	102	131	166	207	257	314
WOMBARRA	51	69	91	119	157	203	261	331	414	512	633	770
WOODPARK	5	8	11	15	20	27	35	45	57	72	90	111
YATTE YATTAH	29	46	67	93	129	174	231	300	383	483	607	749
YENNORA	67	99	139	187	254	335	438	561	707	881	1093	1335
TOTAL	**17453**	**23355**	**30728**	**39815**	**52433**	**68096**	**88177**	**112470**	**141541**	**176722**	**220265**	**270351**

Table A.14 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Commercial												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	5	5	6	6	7	7	8	9	11	12	14	17
ALBION PARK	32	44	58	79	112	138	172	213	255	305	364	429
AMBARVALE	3	5	8	10	14	20	26	33	42	52	65	78
ANZAC VILLAGE	11	12	15	18	23	30	39	50	63	79	98	119
APPIN	4	8	12	18	27	33	42	52	64	78	95	114
ARNDELL PARK	13	15	16	19	22	27	33	41	50	61	74	88
BAULKHAM HILLS 11KV	15	17	20	24	29	37	47	59	73	90	111	134
BELLA VISTA	35	47	60	80	112	153	206	271	349	444	556	680
BERRY	12	18	23	31	44	58	76	98	124	156	193	234
BLACKHEATH	5	6	6	7	9	11	13	16	20	24	28	34
BLACKMANS FLAT	3	3	3	4	5	6	7	9	11	14	16	20
BLAXLAND	12	15	18	23	30	36	44	53	63	76	91	107
BOLONG	1	2	4	5	8	12	17	22	29	37	46	56
BOMADERRY	27	38	52	72	104	144	195	257	331	419	523	637
BONNYRIGG	10	16	23	34	49	69	94	125	161	206	258	316
BOSSLEY PARK	25	32	41	55	76	102	136	177	225	282	349	422
BOW BOWING	17	28	40	58	88	124	171	228	296	377	472	577
BOWRAL	18	30	44	65	99	133	177	230	294	370	459	557
BRINGELLY	9	18	29	47	75	111	159	219	291	381	489	611
BULLI	8	16	25	38	59	86	109	137	170	211	259	312
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	9	11	13	16	21	28	36	46	58	72	89	108
CAMBRIDGE PARK	29	41	55	76	109	151	206	272	352	448	561	686
CAMPBELLTOWN	27	38	50	69	100	139	190	253	329	423	535	660
CANLEY VALE	14	16	19	23	29	36	46	57	71	87	107	128
CARRAMAR	6	9	11	15	21	28	37	48	61	77	96	116
CASTLE HILL	8	21	37	61	98	145	206	279	366	472	595	732
CASULA	13	22	32	47	72	102	142	190	248	317	399	489
CATTAI	10	16	23	33	49	69	95	127	164	209	262	320
CAWDOR	9	16	24	38	59	87	123	169	225	294	377	472
CHERITON AVENUE	19	36	55	84	131	192	271	368	485	629	802	994
CHIPPING NORTON	18	22	26	33	44	58	77	100	127	161	201	246
CLAREMONT MEADOWS	9	11	13	16	22	28	37	48	61	77	95	116
CORRIMAL	15	26	38	56	85	122	168	224	290	369	462	563
CRANEBROOK	16	24	33	47	69	97	133	176	229	292	366	447
CULBURRA	5	6	7	9	11	14	18	23	29	35	44	52
DAPTO	28	36	45	58	79	105	139	179	228	285	353	427
DARKES FOREST	0	2	4	6	10	15	22	30	39	51	64	79
DOONSIDE	16	21	26	35	48	65	87	114	146	184	230	281
DUNDAS	13	17	20	26	35	46	60	78	99	124	154	187
EAST RICHMOND	16	26	39	57	87	123	171	228	297	379	475	581
EASTERN CREEK	12	13	15	16	20	23	28	34	42	51	61	73
EDMONDSON PARK	4	7	10	15	23	33	46	62	81	103	130	159
EMU PLAINS	10	14	17	23	31	42	56	73	94	118	146	177
FAIRFIELD	19	21	23	26	32	39	47	58	70	85	102	121
FIGTREE	23	36	52	75	111	157	215	285	368	467	583	710
GERRINGONG	7	9	11	14	19	25	33	42	54	67	84	101
GLENMORE PARK	21	26	33	43	60	80	107	139	177	224	278	339
GLENORIE	6	9	13	18	27	38	52	69	90	116	146	180
GLOSSODIA	7	11	16	23	34	49	67	89	115	147	183	224
GRANVILLE	12	15	19	25	34	46	61	80	102	129	162	198
GREYSTANES	8	9	11	14	18	23	30	38	48	60	74	89
HARTLEY VALE	0	0	1	1	1	2	2	3	4	5	6	8
HAZELBROOK	6	7	8	9	11	13	15	19	23	27	33	39
HELENSBURGH	7	10	12	16	22	29	38	50	63	79	98	118

Table A.14 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Commercial (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	29	45	64	92	138	196	272	364	475	610	770	948
HOLROYD	30	36	43	53	70	91	119	152	193	242	300	365
HOMEPRIDE	25	50	80	125	198	290	410	557	733	948	1202	1485
HORSLEY PARK	10	12	14	18	24	32	41	53	67	84	104	126
HUNTINGWOOD	11	15	20	28	41	58	80	106	138	176	221	270
HUSKISSON	36	60	82	116	169	237	323	427	550	699	873	1064
ILFORD HALL	1	2	3	5	7	10	15	20	25	33	41	50
INNER HARBOUR	1	1	1	1	1	2	2	2	3	3	4	4
JAMBEROO	2	3	4	6	8	10	12	15	18	22	27	32
JASPER RD	5	9	14	22	34	49	68	93	122	157	199	246
JORDAN SPRINGS	7	10	15	21	31	44	61	82	106	135	170	208
KANDOS	3	7	10	16	24	35	49	66	86	109	137	167
KANGAROO VALLEY	2	3	4	6	8	11	14	17	21	26	32	38
KATOOMBA	14	18	23	30	41	54	72	93	119	149	184	223
KELLYVILLE	2	3	4	5	8	11	15	19	25	32	40	49
KEMBLA GRANGE	4	5	6	8	10	14	19	24	31	39	48	58
KEMPS CREEK	12	17	23	31	45	63	85	113	146	185	233	285
KENNY STREET	13	14	15	16	18	20	24	28	32	38	44	51
KENTHURST	25	43	59	85	126	178	246	329	429	550	694	854
KENTLYN	32	54	72	101	145	202	275	363	468	594	743	906
KIAMA	15	19	24	31	42	56	75	97	123	155	192	233
KINGSWOOD	31	69	113	180	287	421	595	806	1059	1364	1724	2122
KURRAJONG	10	12	14	17	21	27	34	43	54	66	81	97
LEABONS LANE	5	6	8	11	15	21	28	37	48	60	76	92
LENNOX	14	43	70	112	178	263	373	508	670	866	1100	1360
LITHGOW	18	24	30	40	55	74	99	128	163	204	253	306
LIVERPOOL 11KV	39	67	99	149	228	329	460	621	813	1047	1325	1633
LUDDENHAM	5	9	13	19	30	43	61	83	110	143	183	227
MACQUARIE FIELDS	32	60	92	132	193	272	372	493	637	810	1014	1237
MALDON	22	42	66	91	129	178	241	317	409	520	652	797
MAMRE	25	29	35	43	56	69	86	106	131	161	196	235
MARAYONG	14	30	49	78	111	153	207	274	353	450	564	690
MARSDEN PARK	3	3	4	5	7	9	11	15	18	23	29	35
MEADOW FLAT	1	2	4	5	7	10	14	18	23	29	36	44
MINTO	38	50	64	86	119	162	216	282	360	454	564	685
MITTAGONG	23	30	39	52	73	96	126	163	206	259	322	391
MOOREBANK	15	26	40	61	94	136	191	257	338	435	551	680
MOSS VALE	24	40	59	88	133	190	263	351	456	582	729	892
MOUNT OUSLEY	14	21	30	43	63	88	120	159	205	260	325	395
MUNGERIE PARK	72	98	128	174	247	341	462	609	786	1000	1254	1535
NARELLAN	61	86	117	164	242	343	479	649	861	1124	1447	1815
NEPEAN 11KV	48	60	74	95	131	162	203	255	320	400	499	612
NEWTON	34	36	38	41	47	53	61	72	84	99	116	136
NORTH EASTERN CREEK	8	9	11	13	16	20	25	31	39	48	59	71
NORTH LEPPINGTON	1	4	6	11	16	22	30	41	53	68	86	107
NORTH PARRAMATTA	18	21	25	30	39	53	72	96	124	158	199	245
NORTH RICHMOND	11	18	27	40	61	86	120	160	207	264	331	405
NORTH ROCKS	6	6	6	7	8	9	10	12	14	17	20	23
NORTH WARRAGAMBA	8	12	16	23	33	44	58	75	95	119	149	181
NORTH WOLLONGONG	18	39	63	99	141	193	260	340	435	549	682	827
NORTHMEAD	9	12	15	20	28	38	51	67	87	111	139	170
NOWRA	15	28	43	65	101	145	203	272	355	454	571	698
OAKDALE	1	4	7	11	18	27	38	52	69	89	113	139
ORAN PARK	9	12	15	20	29	41	56	75	99	128	165	206
PARKLEA	54	75	99	137	197	273	346	436	543	674	829	1002
PENRITH 11KV	27	64	107	173	277	409	545	710	908	1147	1429	1740
PLUMPTON	18	25	32	44	63	87	118	156	201	256	321	393

Table A.14 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Commercial (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	9	20	32	50	79	115	161	216	282	362	454	556
PORT KEMBLA	11	20	30	45	69	98	137	183	238	303	380	465
PORTLAND	5	7	8	11	15	19	25	33	41	52	64	77
PRESTONS	16	21	26	35	48	69	96	130	171	221	281	347
PROSPECT	13	14	16	18	21	27	34	43	53	66	81	98
QUAKERS HILL	23	29	35	45	61	81	108	139	178	224	279	339
QUARRIES	9	12	16	22	32	44	60	80	103	131	165	202
RINGWOOD	9	12	17	23	33	45	61	80	103	131	163	198
RIVERSTONE	52	73	96	133	190	262	356	470	606	771	965	1179
ROBERTSON	6	8	10	14	20	28	38	51	65	83	105	128
ROOTY HILL	38	46	56	70	93	122	160	206	262	329	408	496
ROSEHILL	10	14	19	26	38	52	72	95	123	158	198	244
RUSSELL VALE	12	22	33	50	77	110	152	203	264	336	420	513
RYDALMERE	30	36	44	54	72	94	122	157	200	251	312	379
SCHOFIELDS	22	28	36	47	64	87	116	151	194	245	306	373
SEVEN HILLS	32	38	44	54	69	88	113	143	179	223	276	333
SHELLHARBOUR	27	48	73	111	171	247	345	464	605	776	976	1197
SHERWOOD	19	32	46	69	105	150	209	280	366	469	591	725
SMITHFIELD	16	22	29	39	54	80	112	151	197	252	316	386
SOUTH GRANVILLE	7	8	9	10	13	16	20	25	31	39	47	57
SOUTH LEPPINGTON	15	24	36	52	79	113	157	211	275	353	445	547
SOUTH MARSDEN PARK	7	16	26	42	68	102	146	201	268	349	448	559
SOUTH NOWRA	14	19	26	35	51	70	95	125	160	203	253	308
SOUTH WINDSOR	47	59	72	92	123	162	213	275	348	437	541	655
SOUTH WOLLONGONG	12	24	38	58	90	131	182	244	318	406	509	621
SPRINGWOOD	14	15	16	19	22	26	31	38	45	54	65	76
ST MARYS	15	32	52	81	129	188	266	360	472	608	768	946
SUSSEX INLET	3	7	11	17	26	36	49	65	83	106	132	162
TAHMOOR	14	26	40	61	95	138	193	261	342	439	555	683
THE OAKS	2	3	3	4	6	8	10	13	17	22	28	34
TOMERONG	5	5	6	8	10	12	16	21	26	33	41	50
ULLADULLA	31	47	66	94	139	195	267	354	457	581	726	885
UNANDERRA	20	24	28	35	46	59	76	96	120	148	182	218
WARILLA	13	26	41	54	75	101	135	177	226	285	355	432
WENTWORTH FALLS	5	8	12	17	25	31	39	49	60	74	91	109
WERRINGTON	31	63	102	160	252	369	521	631	763	923	1111	1320
WEST CASTLE HILL	13	17	23	31	44	60	82	108	140	178	224	275
WEST LIVERPOOL 11KV	27	51	79	122	190	277	389	527	692	893	1131	1395
WEST PARRAMATTA	13	18	24	33	48	71	102	139	184	239	304	377
WEST PENNANT HILLS	7	12	17	26	39	56	77	104	136	175	222	273
WEST WETHERILL PARK 11KV	42	43	45	48	51	56	61	68	76	86	98	111
WEST WOLLONGONG	4	5	5	6	8	11	15	20	26	33	41	50
WESTMEAD	2	4	7	10	15	21	28	38	50	64	81	99
WETHERILL PARK	27	31	35	42	53	66	83	104	128	158	192	230
WHALAN	13	19	27	38	56	79	109	145	188	241	303	372
WILTON	3	5	7	10	13	16	21	27	33	42	51	62
WINDSOR	17	30	46	69	105	126	153	186	225	272	327	387
WISEMANS	5	12	20	33	53	71	94	121	155	194	241	292
WOMBARRA	6	7	9	11	14	18	24	30	38	47	58	70
WOODPARK	21	24	28	34	44	56	71	90	113	140	172	208
YATTE YATTAH	1	1	2	3	4	6	8	10	13	17	21	26
YENNORA	17	20	24	30	39	50	65	82	103	128	157	189
TOTAL	**2553**	**3783**	**5195**	**7308**	**10621**	**14749**	**20023**	**26358**	**33940**	**43110**	**53957**	**65964**

Table A.15 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Industrial (other)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0	0	0	0	0	0	0	0	0	0	0	0
ALBION PARK	2	5	9	15	24	35	50	68	89	115	145	177
AMBARVALE	0	0	0	0	0	0	0	0	1	1	1	1
ANZAC VILLAGE	1	2	3	5	9	14	20	27	35	46	59	73
APPIN	0	1	1	2	4	6	8	11	14	18	23	29
ARNDELL PARK	0	0	0	0	0	0	0	0	0	0	0	0
BAULKHAM HILLS 11KV	0	2	3	5	9	13	19	25	34	44	56	69
BELLA VISTA	3	8	15	24	40	60	86	118	156	203	258	319
BERRY	1	2	3	6	9	14	20	27	35	46	57	71
BLACKHEATH	0	1	1	2	4	6	8	11	14	18	23	28
BLACKMANS FLAT	0	1	1	3	4	6	9	13	17	21	27	33
BLAXLAND	1	2	2	4	6	8	12	16	20	26	32	40
BOLONG	0	0	0	0	0	0	0	0	0	0	0	0
BOMADERRY	2	5	8	14	22	33	47	63	83	107	135	166
BONNYRIGG	0	1	3	4	7	11	16	21	28	36	46	57
BOSSLEY PARK	2	4	6	10	16	24	33	45	59	75	94	115
BOW BOWING	0	0	0	0	0	0	0	0	0	0	0	0
BOWRAL	1	3	6	10	17	26	37	50	66	85	108	133
BRINGELLY	0	1	1	2	4	6	9	13	18	23	30	37
BULLI	0	2	4	6	11	16	23	32	42	54	69	85
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
CAMBRIDGE PARK	3	10	17	29	47	71	101	138	182	236	299	368
CAMPBELLTOWN	0	0	1	2	3	4	6	8	11	14	18	22
CANLEY VALE	1	3	5	9	15	23	32	44	58	74	94	115
CARRAMAR	0	0	0	0	0	0	0	0	0	0	0	0
CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
CASULA	0	2	3	6	9	14	20	27	36	47	59	73
CATTAI	0	0	0	0	0	0	0	0	0	0	0	0
CAWDOR	0	0	0	0	0	0	0	0	0	0	0	0
CHERITON AVENUE	2	7	14	25	41	63	91	126	168	219	280	349
CHIPPING NORTON	0	0	0	0	0	0	0	0	0	0	0	0
CLAREMONT MEADOWS	0	0	1	2	3	4	6	8	11	14	18	22
CORRIMAL	1	3	5	9	14	21	30	41	54	70	88	107
CRANEBROOK	1	4	7	12	20	31	44	60	79	102	129	159
CULBURRA	0	0	0	0	0	0	0	0	0	0	0	0
DAPTO	2	6	10	17	28	41	58	79	103	133	167	205
DARKES FOREST	0	0	0	0	0	0	0	0	0	0	0	0
DOONSIDE	1	3	6	11	18	27	38	53	70	90	114	141
DUNDAS	1	4	8	14	23	35	51	70	92	119	151	187
EAST RICHMOND	1	3	6	10	16	24	34	47	62	79	100	123
EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
EDMONDSON PARK	0	0	0	0	0	0	0	0	0	0	0	0
EMU PLAINS	0	0	0	0	0	0	0	0	0	0	0	0
FAIRFIELD	1	2	3	6	9	13	19	26	33	43	54	66
FIGTREE	1	5	10	17	27	40	57	78	102	131	164	201
GERRINGONG	0	1	1	2	4	6	8	11	14	18	23	28
GLENMORE PARK	2	4	7	11	18	26	37	50	66	85	108	132
GLENORIE	0	1	2	3	5	8	11	15	20	26	34	42
GLOSSODIA	0	0	0	1	1	1	2	2	3	4	5	6
GRANVILLE	0	1	2	4	7	10	15	20	27	35	45	56
GREYSTANES	0	0	0	0	0	0	0	0	0	0	0	0
HARTLEY VALE	0	0	0	0	0	0	0	0	0	0	0	0
HAZELBROOK	0	1	1	2	4	5	7	10	13	17	21	25
HELENSBURGH	0	2	3	5	9	13	18	25	33	42	53	65

Table A.15 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Industrial (other) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	2	5	9	15	24	37	52	72	95	123	156	194
HOLROYD	2	10	18	32	53	80	115	158	209	272	346	428
HOMEPRIDE	0	0	0	0	0	0	0	0	0	0	0	0
HORSLEY PARK	0	0	0	1	1	2	2	3	4	6	7	9
HUNTINGWOOD	0	0	0	0	0	0	0	0	0	0	0	0
HUSKISSON	3	11	19	33	54	80	114	155	204	262	330	405
ILFORD HALL	0	0	0	1	1	2	2	3	4	5	6	8
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	0	0	0	0	0	0	0	0	0	0	0	0
JASPER RD	0	0	0	0	0	0	0	0	0	0	0	0
JORDAN SPRINGS	0	0	0	0	0	0	0	0	0	0	0	0
KANDOS	0	0	0	0	0	0	0	0	0	0	0	0
KANGAROO VALLEY	0	0	0	0	0	0	0	0	0	0	0	0
KATOOMBA	1	1	2	4	6	9	13	18	23	30	38	46
KELLYVILLE	0	0	0	0	0	0	0	0	0	0	0	0
KEMBLA GRANGE	0	0	0	0	0	0	0	0	0	0	0	0
KEMPS CREEK	0	1	1	2	4	6	8	11	15	19	24	30
KENNY STREET	0	0	0	0	0	0	0	0	0	0	0	0
KENTHURST	1	5	9	15	25	38	54	74	98	127	162	201
KENTLYN	3	11	19	33	54	80	114	155	205	264	333	410
KIAMA	1	3	6	10	17	25	36	49	64	83	105	129
KINGSWOOD	2	8	15	26	44	66	94	129	170	220	280	345
KURRAJONG	0	2	4	6	10	15	21	29	38	48	61	75
LEABONS LANE	0	0	0	0	0	0	0	0	0	0	0	0
LENNOX	0	1	2	3	5	7	10	14	19	25	32	40
LITHGOW	1	3	5	9	15	22	32	43	56	73	91	112
LIVERPOOL 11KV	3	15	29	50	83	126	182	250	332	431	549	680
LUDDENHAM	0	0	0	0	0	0	0	0	0	0	0	0
MACQUARIE FIELDS	2	10	19	32	54	80	115	156	206	265	334	411
MALDON	1	4	8	14	24	35	51	70	92	119	152	187
MAMRE	1	4	7	12	20	29	42	57	75	97	123	152
MARAYONG	0	0	0	0	0	0	0	0	0	0	0	0
MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
MEADOW FLAT	0	0	0	0	1	1	2	2	3	4	4	5
MINTO	2	5	8	14	22	33	46	63	83	106	134	164
MITTAGONG	1	3	6	10	16	24	34	47	62	80	102	125
MOOREBANK	0	0	0	0	0	0	0	0	0	0	0	0
MOSS VALE	1	4	7	11	18	27	39	53	70	90	113	139
MOUNT OUSLEY	1	2	5	8	13	19	28	37	49	63	79	97
MUNGERIE PARK	5	14	25	42	68	101	144	196	259	336	426	526
NARELLAN	4	9	16	26	43	66	95	133	179	237	308	389
NEPEAN 11KV	4	12	22	37	63	96	141	197	267	354	461	583
NEWTON	2	5	9	14	23	34	48	65	86	111	141	174
NORTH EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
NORTH LEPPINGTON	0	0	0	0	0	0	0	0	0	0	0	0
NORTH PARRAMATTA	1	2	4	7	12	17	25	35	46	60	76	95
NORTH RICHMOND	1	2	3	6	9	14	20	27	35	45	57	70
NORTH ROCKS	0	0	0	0	0	0	0	0	0	0	0	0
NORTH WARRAGAMBA	0	2	4	7	11	17	24	33	44	57	72	89
NORTH WOLLONGONG	1	4	8	14	24	35	50	69	90	116	146	178
NORTHMEAD	0	1	1	2	4	6	9	12	16	21	27	34
NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
OAKDALE	0	0	0	0	0	0	0	0	0	0	0	0
ORAN PARK	0	0	0	0	0	0	0	0	0	0	0	0
PARKLEA	3	6	11	17	28	42	60	81	108	139	177	219
PENRITH 11KV	0	0	0	0	0	0	0	0	0	0	0	0
PLUMPTON	1	6	10	18	30	45	64	88	116	150	191	236

Table A.15 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Industrial (other) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0	1	2	4	7	10	14	19	25	32	41	50
PORT KEMBLA	0	2	4	7	12	18	26	36	48	61	77	95
PORTLAND	0	1	2	3	5	7	10	14	18	23	29	36
PRESTONS	1	3	6	9	15	23	33	45	59	77	99	123
PROSPECT	0	0	0	0	0	0	0	0	0	0	0	0
QUAKERS HILL	1	5	9	15	25	37	53	73	96	124	158	195
QUARRIES	0	0	0	0	0	0	0	0	0	0	0	0
RINGWOOD	0	1	2	3	4	7	9	13	17	22	27	33
RIVERSTONE	4	12	22	36	58	86	122	166	219	283	358	441
ROBERTSON	0	0	0	0	0	0	0	0	0	0	0	0
ROOTY HILL	2	7	13	22	36	55	78	107	141	183	232	287
ROSEHILL	0	0	0	0	0	0	0	0	0	0	0	0
RUSSELL VALE	1	2	5	8	13	20	28	39	51	65	82	100
RYDALMERE	1	4	8	14	24	36	51	71	94	122	155	192
SCHOFIELDS	2	6	10	17	27	41	59	80	106	136	173	214
SEVEN HILLS	1	4	8	13	22	32	46	63	84	108	137	170
SHELLHARBOUR	1	5	10	16	27	40	58	78	103	133	169	208
SHERWOOD	1	5	9	16	26	39	56	77	101	131	166	205
SMITHFIELD	1	2	3	4	7	10	15	20	26	33	41	51
SOUTH GRANVILLE	0	0	0	0	0	0	0	0	0	1	1	1
SOUTH LEPPINGTON	1	4	8	13	21	32	45	62	81	105	134	165
SOUTH MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH WINDSOR	2	6	11	19	31	46	66	90	118	152	193	237
SOUTH WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
SPRINGWOOD	1	2	3	5	8	11	16	21	28	35	44	54
ST MARYS	1	5	10	17	29	44	63	86	114	147	187	231
SUSSEX INLET	0	0	0	0	0	0	0	0	0	0	0	0
TAHMOOR	1	4	8	15	24	37	53	72	95	124	157	194
THE OAKS	0	0	0	0	0	0	0	0	0	0	0	0
TOMERONG	0	0	0	0	0	0	0	0	0	0	0	0
ULLADULLA	1	5	10	16	27	40	57	78	102	132	166	204
UNANDERRA	0	2	3	5	8	12	18	24	31	40	51	62
WARILLA	1	3	5	9	15	23	33	45	59	76	97	119
WENTWORTH FALLS	0	1	2	2	4	6	9	12	15	20	25	31
WERRINGTON	0	0	0	0	0	0	0	0	0	0	0	0
WEST CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
WEST LIVERPOOL 11KV	1	5	9	15	25	37	53	73	97	126	161	199
WEST PARRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
WEST PENNANT HILLS	1	2	3	6	9	14	20	27	36	46	59	73
WEST WETHERILL PARK 11KV	0	0	0	0	0	0	0	0	0	0	0	0
WEST WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
WESTMEAD	0	0	0	0	0	0	0	0	0	0	0	0
WETHERILL PARK	0	0	0	0	0	0	0	0	0	0	0	0
WHALAN	0	0	0	0	0	0	0	0	0	0	0	0
WILTON	0	0	0	0	0	0	0	0	0	0	0	0
WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0
WISEMANS	0	0	1	1	2	2	3	5	6	8	10	12
WOMBARRA	0	2	3	5	9	13	18	25	33	42	53	65
WOODPARK	0	0	0	0	0	0	0	0	0	0	0	0
YATTE YATTAH	0	0	0	0	0	0	0	0	0	0	0	0
YENNORA	0	0	1	1	2	3	4	5	7	9	11	14
TOTAL	**107**	**373**	**684**	**1157**	**1906**	**2857**	**4089**	**5586**	**7381**	**9552**	**12122**	**14967**

Table A.16 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Total ZSS												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	192	241	301	376	481	613	782	988	1235	1537	1913	2348
ALBION PARK	301	372	458	569	726	906	1134	1409	1727	2109	2573	3097
AMBARVALE	161	215	283	366	481	623	805	1025	1286	1602	1991	2437
ANZAC VILLAGE	144	186	238	303	395	510	659	839	1056	1319	1643	2017
APPIN	49	75	107	148	205	271	355	455	575	718	893	1093
ARNDELL PARK	78	107	143	188	250	328	428	549	694	869	1085	1332
BAULKHAM HILLS 11KV	153	204	267	346	457	596	774	991	1252	1568	1958	2408
BELLA VISTA	272	359	467	607	807	1057	1379	1771	2240	2809	3507	4303
BERRY	97	132	173	226	300	391	506	645	810	1008	1248	1521
BLACKHEATH	53	65	80	98	123	155	194	242	298	365	446	538
BLACKMANS FLAT	23	46	73	106	153	210	283	371	474	598	749	921
BLAXLAND	158	182	210	246	297	356	431	520	625	751	904	1076
BOLONG	17	25	36	49	68	91	121	156	198	248	309	378
BOMADERRY	191	245	311	397	519	671	865	1097	1374	1705	2105	2556
BONNYRIGG	180	239	313	405	534	695	900	1148	1444	1802	2239	2739
BOSSLEY PARK	168	202	243	296	372	466	586	729	898	1099	1341	1613
BOW BOWING	86	112	143	185	247	324	422	540	680	848	1050	1277
BOWRAL	131	200	285	394	549	734	969	1251	1586	1988	2476	3027
BRINGELLY	50	89	139	205	301	424	585	783	1025	1323	1694	2124
BULLI	106	179	270	384	546	746	992	1289	1643	2071	2597	3198
BYLONG	1	3	4	6	9	12	16	21	26	33	41	51
CABRAMATTA	59	91	131	181	251	338	448	582	741	933	1169	1438
CAMBRIDGE PARK	230	296	376	481	633	823	1067	1361	1713	2138	2654	3238
CAMPBELLTOWN	139	207	292	402	559	758	1015	1330	1711	2177	2755	3422
CANLEY VALE	150	203	268	349	463	603	782	996	1251	1556	1930	2354
CARRAMAR	51	81	118	164	228	305	404	522	661	828	1030	1259
CASTLE HILL	68	169	293	450	671	945	1294	1715	2215	2817	3550	4383
CASULA	186	260	351	467	630	833	1093	1406	1779	2228	2778	3403
CATTAI	73	114	164	227	316	425	566	734	934	1174	1466	1797
CAWDOR	116	182	264	371	525	721	977	1294	1681	2159	2760	3463
CHERITON AVENUE	131	204	295	415	592	815	1106	1462	1892	2418	3065	3806
CHIPPING NORTON	100	126	157	199	257	332	428	545	687	860	1074	1321
CLAREMONT MEADOWS	135	219	325	456	641	872	1169	1531	1967	2497	3155	3917
CORRIMAL	133	187	253	337	458	606	795	1020	1287	1606	1990	2421
CRANEBROOK	126	182	251	340	466	623	825	1068	1357	1707	2132	2615
CULBURRA	84	122	168	225	304	401	525	673	849	1059	1317	1611
DAPTO	332	414	515	642	821	1041	1321	1657	2055	2531	3110	3764
DARKES FOREST	2	7	14	23	36	52	72	96	125	160	202	249
DOONSIDE	319	431	572	747	994	1301	1694	2171	2741	3430	4280	5253
DUNDAS	135	209	300	415	576	777	1033	1343	1713	2160	2709	3335
EAST RICHMOND	88	113	144	186	248	326	426	546	689	860	1065	1294
EASTERN CREEK	14	15	17	20	23	28	35	43	52	63	77	92
EDMONDSON PARK	72	106	148	201	275	366	483	624	792	995	1243	1526
EMU PLAINS	138	165	199	241	301	374	468	580	713	873	1068	1288
FAIRFIELD	81	99	120	146	184	231	290	361	445	546	668	805
FIGTREE	192	254	330	427	567	739	958	1220	1531	1901	2347	2847
GERRINGONG	63	74	87	104	128	158	197	243	298	364	444	535
GLENMORE PARK	271	329	401	493	622	784	990	1239	1537	1896	2336	2836
GLENORIE	43	59	80	106	144	192	254	329	419	529	663	815
GLOSSODIA	88	132	186	254	348	464	611	787	996	1246	1550	1894
GRANVILLE	68	103	147	203	282	382	510	665	852	1079	1359	1680
GREYSTANES	84	107	135	170	219	280	359	454	568	707	877	1072
HARTLEY VALE	3	4	5	6	8	10	12	15	19	23	29	35
HAZELBROOK	87	101	119	140	171	208	255	312	379	458	555	664
HELENSBURGH	55	73	96	124	163	212	275	349	437	542	669	812

Table A.16 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Total ZSS (continued)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	314	395	494	623	810	1044	1346	1714	2156	2692	3348	4097
HOLROYD	187	279	395	541	751	1012	1349	1757	2247	2841	3572	4408
HOMEPRIDE	53	96	147	219	328	466	645	864	1126	1445	1830	2263
HORSLEY PARK	44	49	55	64	76	91	110	133	161	195	235	280
HUNTINGWOOD	33	43	56	72	97	130	171	221	280	352	437	533
HUSKISSON	198	270	350	458	616	812	1063	1365	1722	2152	2667	3244
ILFORD HALL	5	9	15	21	31	43	58	75	97	122	152	186
INNER HARBOUR	1	1	1	1	1	2	2	2	3	3	4	4
JAMBEROO	28	41	57	76	103	136	178	228	288	359	447	548
JASPER RD	148	187	235	296	382	491	630	800	1004	1252	1558	1909
JORDAN SPRINGS	139	175	219	275	353	450	575	724	903	1118	1381	1681
KANDOS	29	72	124	189	278	388	528	694	890	1125	1410	1732
KANGAROO VALLEY	19	28	39	52	71	93	121	155	195	243	302	368
KATOOMBA	98	119	145	178	226	284	359	448	554	681	835	1008
KELLYVILLE	114	150	196	254	334	434	563	719	907	1136	1419	1745
KEMBLA GRANGE	55	76	101	133	177	232	302	385	486	606	754	923
KEMPS CREEK	49	68	91	121	165	219	289	374	476	600	750	920
KENNY STREET	14	15	16	18	20	23	27	31	37	43	51	59
KENTHURST	151	238	340	474	666	907	1218	1596	2051	2602	3277	4049
KENTLYN	268	365	476	620	827	1085	1415	1812	2285	2853	3542	4320
KIAMA	147	191	246	315	414	536	692	880	1105	1375	1706	2081
KINGSWOOD	191	302	438	620	887	1222	1652	2172	2794	3544	4450	5471
KURRAJONG	101	149	210	284	387	515	676	870	1099	1373	1708	2087
LEABONS LANE	87	133	191	263	364	489	649	843	1075	1355	1702	2099
LENNOX	27	61	93	142	218	315	440	594	779	1003	1272	1571
LITHGOW	132	179	237	311	414	541	702	895	1122	1394	1724	2095
LIVERPOOL 11KV	157	192	231	294	395	525	693	899	1147	1448	1803	2196
LUDDENHAM	38	79	130	195	287	403	553	739	964	1241	1586	1989
MACQUARIE FIELDS	242	345	471	626	851	1131	1487	1916	2426	3038	3776	4606
MALDON	161	269	402	561	789	1072	1435	1875	2401	3036	3813	4699
MAMRE	225	287	363	460	598	765	980	1239	1550	1924	2384	2909
MARAYONG	96	158	235	335	468	634	847	1105	1414	1788	2246	2767
MARSDEN PARK	171	197	228	266	319	383	466	566	685	828	1004	1204
MEADOW FLAT	10	15	20	27	37	48	63	81	102	128	158	192
MINTO	370	453	555	685	869	1096	1387	1735	2150	2646	3250	3932
MITTAGONG	158	210	274	357	474	618	802	1025	1291	1613	2006	2455
MOOREBANK	71	108	154	214	301	411	554	727	935	1187	1495	1845
MOSS VALE	153	214	288	384	524	697	918	1184	1500	1878	2335	2848
MOUNT OUSLEY	94	138	192	260	358	478	630	813	1028	1286	1597	1946
MUNGERIE PARK	654	812	1008	1261	1625	2081	2668	3380	4233	5265	6528	7967
NARELLAN	435	535	661	832	1088	1420	1860	2410	3091	3940	5008	6258
NEPEAN 11KV	322	439	589	786	1077	1435	1911	2506	3242	4161	5327	6703
NEWTON	129	157	191	235	297	375	475	597	742	918	1133	1378
NORTH EASTERN CREEK	10	11	13	15	19	24	30	38	47	59	72	87
NORTH LEPPINGTON	21	46	78	119	175	245	336	447	580	743	944	1177
NORTH PARRAMATTA	75	107	147	198	271	367	491	642	824	1045	1318	1631
NORTH RICHMOND	87	130	183	250	346	464	615	796	1011	1269	1581	1933
NORTH ROCKS	75	102	136	178	237	311	406	521	660	828	1038	1280
NORTH WARRAGAMBA	84	142	216	308	437	596	800	1047	1342	1699	2139	2642
NORTH WOLLONGONG	44	79	120	179	252	343	459	599	764	961	1195	1454
NORTHMEAD	76	110	153	207	283	379	502	652	833	1052	1323	1634
NOWRA	136	201	280	382	526	704	932	1205	1530	1919	2391	2925
OAKDALE	16	34	56	85	124	174	238	315	407	519	656	813
ORAN PARK	245	398	595	847	1209	1673	2288	3056	4005	5191	6704	8499
PARKLEA	644	771	928	1131	1423	1789	2235	2777	3429	4221	5196	6314
PENRITH 11KV	60	113	177	268	407	582	773	1006	1283	1618	2018	2465
PLUMPTON	222	295	385	500	664	868	1131	1448	1829	2289	2853	3496

Table A.16 Cumulative capacity by zone substation – Solar and battery installations – Endeavour Energy – Total ZSS (continued)												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	37	59	86	123	177	245	332	437	560	709	886	1084
PORT KEMBLA	86	140	207	292	412	561	751	979	1249	1573	1965	2409
PORTLAND	36	47	61	78	102	132	169	214	268	331	408	495
PRESTONS	260	324	404	506	651	838	1080	1376	1734	2172	2715	3343
PROSPECT	108	126	150	179	221	273	341	424	523	644	793	964
QUAKERS HILL	283	375	490	634	837	1090	1415	1809	2280	2850	3551	4353
QUARRIES	56	73	94	122	162	211	275	352	444	556	694	850
RINGWOOD	70	93	120	155	205	267	346	440	552	687	850	1034
RIVERSTONE	217	262	315	391	505	649	834	1058	1326	1650	2037	2470
ROBERTSON	44	69	100	138	193	261	348	453	579	731	919	1134
ROOTY HILL	266	350	454	587	777	1013	1317	1684	2124	2656	3309	4053
ROSEHILL	17	27	41	58	84	117	160	212	274	350	442	547
RUSSELL VALE	116	173	242	331	457	612	808	1044	1322	1654	2055	2507
RYDALMERE	127	181	248	334	458	612	812	1054	1345	1699	2134	2631
SCHOFIELDS	327	438	575	748	992	1296	1686	2158	2723	3406	4247	5209
SEVEN HILLS	108	126	148	177	222	277	349	437	541	668	821	994
SHELLHARBOUR	232	329	447	600	821	1096	1448	1873	2379	2987	3726	4560
SHERWOOD	105	144	192	256	350	468	619	803	1023	1288	1608	1970
SMITHFIELD	198	247	308	383	489	624	796	1001	1244	1534	1884	2279
SOUTH GRANVILLE	62	96	139	191	265	356	472	613	782	986	1237	1525
SOUTH LEPPINGTON	183	263	361	487	666	889	1176	1523	1938	2440	3056	3760
SOUTH MARSDEN PARK	46	91	148	221	327	460	635	850	1111	1432	1831	2294
SOUTH NOWRA	51	64	80	102	133	172	223	283	355	441	544	659
SOUTH WINDSOR	194	270	363	480	647	854	1119	1438	1817	2274	2828	3456
SOUTH WOLLONGONG	34	52	73	103	147	203	273	358	459	579	721	878
SPRINGWOOD	177	207	243	288	351	428	526	642	780	945	1145	1371
ST MARYS	146	223	317	440	618	840	1125	1470	1883	2381	2987	3674
SUSSEX INLET	54	83	118	163	227	303	401	519	660	829	1037	1274
TAHMOOR	148	252	380	543	775	1064	1434	1881	2416	3062	3853	4755
THE OAKS	50	77	110	153	213	289	389	511	661	846	1078	1351
TOMERONG	102	119	140	167	203	249	306	376	458	557	678	815
ULLADULLA	238	311	400	515	680	885	1147	1461	1834	2280	2820	3427
UNANDERRA	58	75	97	125	165	215	278	353	442	549	677	821
WARILLA	157	229	317	422	570	753	987	1268	1603	2006	2497	3053
WENTWORTH FALLS	59	75	94	118	154	193	244	305	378	466	573	694
WERRINGTON	145	219	308	428	607	832	1121	1397	1727	2126	2611	3158
WEST CASTLE HILL	131	181	242	320	430	568	746	962	1221	1536	1925	2372
WEST LIVERPOOL 11KV	147	216	301	414	583	794	1067	1399	1797	2280	2866	3530
WEST PARRAMATTA	13	19	26	35	51	76	108	147	194	252	321	397
WEST PENNANT HILLS	146	191	247	319	421	549	714	915	1156	1448	1809	2223
WEST WETHERILL PARK 11KV	42	44	46	48	52	56	62	69	77	87	99	112
WEST WOLLONGONG	65	96	135	183	248	330	433	556	702	876	1088	1329
WESTMEAD	6	10	15	21	29	40	54	71	92	117	147	181
WETHERILL PARK	44	49	56	64	78	95	116	142	173	209	253	301
WHALAN	132	164	202	253	324	414	529	669	836	1038	1286	1568
WILTON	38	50	64	83	107	138	176	223	279	346	428	522
WINDSOR	93	133	182	244	335	423	536	671	831	1023	1257	1520
WISEMANS	21	36	54	78	113	151	199	257	326	409	508	619
WOMBARRA	57	78	103	135	179	234	303	386	484	601	744	904
WOODPARK	26	32	39	49	64	82	106	135	170	212	262	319
YATTE YATTAH	30	48	69	96	133	180	239	311	396	500	628	775
YENNORA	84	120	164	218	295	388	507	649	817	1018	1262	1537
TOTAL	**20114**	**27512**	**36607**	**48280**	**64960**	**85702**	**112289**	**144414**	**182863**	**229383**	**286344**	**351282**

Table A.17 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Residential (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	10	11	13	14	15	16	17	18	20	21	22	24
ALBION PARK	14	16	17	19	20	21	22	23	25	26	27	29
AMBARVALE	8	10	11	13	14	15	16	17	19	20	21	23
ANZAC VILLAGE	7	8	9	10	11	12	13	14	15	16	17	18
APPIN	2	3	4	4	5	5	6	6	7	7	8	8
ARNDELL PARK	3	4	5	6	6	7	7	8	9	9	10	11
BAULKHAM HILLS 11KV	7	9	10	11	12	13	14	15	17	18	19	21
BELLA VISTA	13	15	16	18	20	21	23	25	26	28	30	32
BERRY	5	5	6	7	7	8	9	9	10	10	11	12
BLACKHEATH	3	3	3	3	4	4	4	4	5	5	5	5
BLACKMANS FLAT	1	2	2	3	3	4	4	5	5	6	6	7
BLAXLAND	8	8	9	9	10	10	10	11	11	12	12	13
BOLONG	1	1	1	1	2	2	2	2	2	2	3	3
BOMADERRY	9	10	11	12	13	14	14	15	16	17	18	19
BONNYRIGG	9	11	12	13	14	16	17	18	19	21	22	23
BOSSLEY PARK	8	8	9	9	10	10	11	12	12	13	13	14
BOW BOWING	4	4	5	5	5	6	6	6	7	7	7	8
BOWRAL	6	8	9	10	12	13	14	15	16	18	19	21
BRINGELLY	2	3	4	5	5	6	7	7	8	9	10	11
BULLI	5	7	9	10	11	13	14	16	17	19	20	22
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	3	4	4	5	6	6	7	8	9	9	10	11
CAMBRIDGE PARK	10	12	13	14	15	16	17	18	19	21	22	23
CAMPBELLTOWN	6	8	9	11	12	13	15	16	18	19	21	23
CANLEY VALE	7	9	10	11	12	13	14	15	16	18	19	20
CARRAMAR	2	3	4	5	5	6	6	7	8	8	9	10
CASTLE HILL	3	6	8	10	12	14	16	18	20	22	24	27
CASULA	9	11	13	14	16	17	19	20	22	23	25	27
CATTAI	3	4	5	6	7	8	8	9	10	11	12	13
CAWDOR	6	7	9	10	12	13	15	16	18	20	22	24
CHERITON AVENUE	6	7	9	10	11	12	14	15	16	18	19	21
CHIPPING NORTON	4	5	6	6	7	7	8	8	9	9	10	11
CLAREMONT MEADOWS	7	9	11	13	15	17	19	21	23	25	27	30
CORRIMAL	6	7	8	9	10	11	12	13	14	15	16	17
CRANEBROOK	6	7	8	9	10	11	12	13	14	15	17	18
CULBURRA	4	5	6	7	8	9	10	10	11	12	13	14
DAPTO	16	18	19	21	22	24	25	27	28	30	32	34
DARKES FOREST	0	0	0	0	0	1	1	1	1	1	1	1
DOONSIDE	16	19	22	24	27	29	32	34	37	39	42	45
DUNDAS	6	8	10	12	13	15	16	18	19	21	23	25
EAST RICHMOND	4	4	5	5	5	5	6	6	6	7	7	7
EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
EDMONDSON PARK	4	5	5	6	7	8	8	9	10	10	11	12
EMU PLAINS	7	7	8	9	9	10	10	11	11	12	12	13
FAIRFIELD	3	4	4	4	5	5	5	6	6	6	7	7
FIGTREE	9	10	11	12	13	14	15	16	17	18	19	20
GERRINGONG	3	3	3	4	4	4	4	4	5	5	5	5
GLENMORE PARK	13	15	16	17	18	19	20	22	23	24	25	27
GLENORIE	2	2	3	3	3	4	4	4	4	5	5	6
GLOSSODIA	4	6	7	7	8	9	10	11	12	13	14	15
GRANVILLE	3	4	5	5	6	7	8	8	9	10	11	12
GREYSTANES	4	5	5	6	6	7	7	8	8	9	9	10
HARTLEY VALE	0	0	0	0	0	0	0	0	0	0	0	0
HAZELBROOK	4	5	5	5	6	6	6	7	7	7	7	8
HELENSBURGH	2	3	3	4	4	4	5	5	5	6	6	6

Table A.17 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Residential (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	15	17	19	20	22	23	24	26	27	29	31	32
HOLROYD	8	11	13	15	16	18	20	22	24	26	28	30
HOMEPRIDE	2	2	2	3	3	4	4	4	5	5	6	6
HORSLEY PARK	2	2	2	2	2	2	2	2	2	2	3	3
HUNTINGWOOD	1	1	1	2	2	2	2	2	2	2	3	3
HUSKISSON	8	10	11	12	13	13	14	15	16	17	18	19
ILFORD HALL	0	0	0	1	1	1	1	1	1	1	1	1
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	1	2	2	2	3	3	3	3	4	4	4	5
JASPER RD	8	9	10	10	11	12	13	14	14	15	16	17
JORDAN SPRINGS	7	8	9	9	10	11	12	12	13	14	15	16
KANDOS	2	3	4	5	6	7	8	9	10	11	12	13
KANGAROO VALLEY	1	1	1	2	2	2	2	2	2	3	3	3
KATOOMBA	5	5	5	6	6	7	7	7	8	8	8	9
KELLYVILLE	6	7	8	9	10	10	11	12	13	14	15	16
KEMBLA GRANGE	3	3	4	4	5	5	5	6	6	7	7	8
KEMPS CREEK	2	2	3	3	3	4	4	4	5	5	5	6
KENNY STREET	0	0	0	0	0	0	0	0	0	0	0	0
KENTHURST	7	9	10	12	13	15	16	18	20	21	23	25
KENTLYN	13	14	16	18	19	21	22	24	25	27	29	31
KIAMA	7	8	9	10	11	12	12	13	14	15	16	17
KINGSWOOD	8	10	12	14	15	17	18	20	21	23	25	27
KURRAJONG	5	6	7	8	9	10	11	12	13	14	16	17
LEABONS LANE	4	6	7	8	9	10	11	12	13	14	15	17
LENNOX	1	1	1	1	1	1	1	1	1	2	2	2
LITHGOW	6	7	8	9	10	11	12	13	14	14	15	17
LIVERPOOL 11KV	6	6	6	6	6	6	5	5	5	5	5	5
LUDDENHAM	2	3	4	5	6	6	7	8	9	10	11	13
MACQUARIE FIELDS	11	13	15	16	18	20	21	23	24	26	27	29
MALDON	7	10	12	14	16	18	20	22	24	26	28	31
MAMRE	11	12	14	15	16	17	19	20	21	23	24	26
MARAYONG	4	6	7	8	9	10	11	12	13	15	16	17
MARSDEN PARK	9	10	10	11	11	12	13	13	14	14	15	16
MEADOW FLAT	0	1	1	1	1	1	1	1	1	1	1	1
MINTO	18	20	21	23	25	26	28	29	31	32	34	36
MITTAGONG	7	8	9	10	11	12	13	14	15	16	18	19
MOOREBANK	3	4	4	5	6	6	7	7	8	9	9	10
MOSS VALE	7	8	9	10	11	12	13	14	15	16	17	18
MOUNT OUSLEY	4	5	6	7	8	8	9	10	11	11	12	13
MUNGERIE PARK	31	34	38	41	43	46	49	52	55	58	61	65
NARELLAN	20	22	24	25	27	29	31	33	35	37	40	42
NEPEAN 11KV	15	17	20	22	25	27	30	33	36	39	43	47
NEWTON	5	6	6	7	7	8	8	9	9	10	11	11
NORTH EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
NORTH LEPPINGTON	1	2	2	3	3	4	5	5	6	6	7	8
NORTH PARRAMATTA	3	4	4	5	6	6	7	8	8	9	10	11
NORTH RICHMOND	4	5	6	7	8	8	9	10	11	11	12	13
NORTH ROCKS	4	4	5	6	6	7	8	8	9	10	10	11
NORTH WARRAGAMBA	4	5	7	8	9	11	12	13	14	16	17	19
NORTH WOLLONGONG	1	2	2	2	2	3	3	3	3	3	4	4
NORTHMEAD	4	4	5	6	7	7	8	9	10	10	11	12
NOWRA	6	8	9	11	12	13	14	15	16	18	19	20
OAKDALE	1	1	2	2	2	3	3	3	4	4	5	5
ORAN PARK	13	17	21	25	29	33	37	41	45	50	56	62
PARKLEA	31	34	37	39	42	44	47	49	52	54	57	60
PENRITH 11KV	2	2	3	3	3	4	4	4	5	5	6	6
PLUMPTON	11	13	14	16	17	19	20	21	23	24	26	28

Table A.17 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Residential (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	1	2	2	2	3	3	3	3	4	4	4	4
PORT KEMBLA	4	5	6	7	8	9	10	11	12	13	14	15
PORTLAND	2	2	2	2	3	3	3	3	3	4	4	4
PRESTONS	13	15	16	18	19	20	22	23	25	26	28	30
PROSPECT	5	6	6	6	7	7	8	8	9	9	9	10
QUAKERS HILL	14	16	18	20	22	24	26	28	30	32	34	37
QUARRIES	3	3	3	4	4	4	5	5	5	6	6	6
RINGWOOD	3	4	4	5	5	5	6	6	7	7	8	8
RIVERSTONE	9	9	10	10	10	11	11	11	12	12	13	13
ROBERTSON	2	3	3	4	4	5	5	6	6	7	8	8
ROOTY HILL	12	14	16	18	19	21	23	24	26	28	30	32
ROSEHILL	0	1	1	1	1	1	1	2	2	2	2	2
RUSSELL VALE	5	7	8	9	10	11	12	13	14	15	16	17
RYDALMERE	5	6	8	9	10	11	12	13	14	15	16	18
SCHOFIELDS	16	19	22	24	26	29	31	33	36	38	41	44
SEVEN HILLS	4	4	4	5	5	5	5	6	6	6	6	7
SHELLHARBOUR	11	13	15	16	18	20	21	23	24	26	28	30
SHERWOOD	5	5	6	6	7	7	8	8	9	9	10	11
SMITHFIELD	10	11	12	13	14	15	16	17	18	19	20	21
SOUTH GRANVILLE	3	4	5	6	6	7	8	9	9	10	11	12
SOUTH LEPPINGTON	9	11	13	14	16	17	19	20	22	24	26	28
SOUTH MARSDEN PARK	2	3	4	5	6	7	8	8	9	10	12	13
SOUTH NOWRA	2	2	2	3	3	3	3	3	3	4	4	4
SOUTH WINDSOR	8	10	11	12	14	15	16	18	19	20	22	24
SOUTH WOLLONGONG	1	1	1	2	2	2	2	2	2	2	2	3
SPRINGWOOD	9	9	10	11	11	12	12	13	14	14	15	16
ST MARYS	7	9	10	11	13	14	15	16	18	19	21	22
SUSSEX INLET	3	3	4	5	5	6	6	7	8	8	9	10
TAHMOOR	7	10	12	14	16	18	20	22	24	27	29	32
THE OAKS	3	3	4	5	5	6	7	7	8	9	10	11
TOMERONG	5	6	6	6	7	7	8	8	8	9	9	10
ULLADULLA	11	12	13	15	16	17	18	19	20	21	23	24
UNANDERRA	2	2	3	3	3	3	4	4	4	5	5	5
WARILLA	8	9	11	12	13	15	16	17	19	20	21	23
WENTWORTH FALLS	3	3	4	4	4	4	5	5	5	6	6	6
WERRINGTON	6	7	8	9	10	11	12	13	14	15	16	17
WEST CASTLE HILL	6	8	9	10	11	12	13	14	15	16	18	19
WEST LIVERPOOL 11KV	6	8	9	10	11	12	13	14	15	16	17	18
WEST PARRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
WEST PENNANT HILLS	7	9	10	10	11	12	13	14	15	16	17	18
WEST WETHERILL PARK 11KV	0	0	0	0	0	0	0	0	0	0	0	0
WEST WOLLONGONG	3	4	5	5	6	7	7	8	9	9	10	11
WESTMEAD	0	0	0	0	0	0	1	1	1	1	1	1
WETHERILL PARK	1	1	1	1	1	1	1	1	1	1	1	1
WHALAN	6	7	8	8	9	9	10	11	11	12	13	13
WILTON	2	2	2	3	3	3	3	4	4	4	4	5
WINDSOR	4	5	6	6	7	7	8	8	9	10	10	11
WISEMANS	1	1	1	1	2	2	2	2	2	2	3	3
WOMBARRA	3	3	4	4	4	5	5	6	6	6	7	7
WOODPARK	0	0	0	0	1	1	1	1	1	1	1	1
YATTE YATTAH	2	2	2	3	3	4	4	4	5	5	6	6
YENNORA	4	5	5	6	7	8	8	9	10	10	11	12
TOTAL	**932**	**1104**	**1253**	**1393**	**1533**	**1664**	**1798**	**1934**	**2074**	**2224**	**2389**	**2560**

Table A.18 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Commercial (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0	0	0	0	0	0	0	0	0	0	0	0
ALBION PARK	1	2	2	2	2	2	2	3	3	3	3	3
AMBARVALE	0	0	0	0	0	0	0	0	0	0	0	0
ANZAC VILLAGE	0	0	0	1	1	1	1	1	1	1	1	1
APPIN	0	0	0	0	0	0	1	1	1	1	1	1
ARNDELL PARK	1	1	1	1	1	1	1	1	1	1	1	1
BAULKHAM HILLS 11KV	1	1	1	1	1	1	1	1	1	1	1	1
BELLA VISTA	1	2	2	2	2	3	3	3	3	3	4	4
BERRY	0	1	1	1	1	1	1	1	1	1	1	1
BLACKHEATH	0	0	0	0	0	0	0	0	0	0	0	0
BLACKMANS FLAT	0	0	0	0	0	0	0	0	0	0	0	0
BLAXLAND	0	1	1	1	1	1	1	1	1	1	1	1
BOLONG	0	0	0	0	0	0	0	0	0	0	0	0
BOMADERRY	1	1	2	2	2	2	2	3	3	3	3	4
BONNYRIGG	0	1	1	1	1	1	1	1	1	1	2	2
BOSSLEY PARK	1	1	1	1	2	2	2	2	2	2	2	3
BOW BOWING	1	1	1	1	2	2	2	2	2	3	3	3
BOWRAL	1	1	1	1	2	2	2	2	2	3	3	3
BRINGELLY	0	1	1	1	1	1	2	2	2	2	2	3
BULLI	0	0	1	1	1	1	1	1	1	1	2	2
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	0	0	0	0	0	1	1	1	1	1	1	1
CAMBRIDGE PARK	1	1	2	2	2	2	2	3	3	3	3	4
CAMPBELLTOWN	1	1	2	2	2	2	2	3	3	3	3	4
CANLEY VALE	1	1	1	1	1	1	1	1	1	1	1	1
CARRAMAR	0	0	0	0	0	0	0	1	1	1	1	1
CASTLE HILL	0	1	1	1	1	2	2	2	2	3	3	3
CASULA	1	1	1	1	1	1	2	2	2	2	2	2
CATTAI	0	1	1	1	1	1	1	1	1	1	2	2
CAWDOR	0	1	1	1	1	1	1	1	2	2	2	2
CHERITON AVENUE	1	1	1	2	2	2	3	3	3	4	4	5
CHIPPING NORTON	1	1	1	1	1	1	1	1	1	1	1	2
CLAREMONT MEADOWS	0	0	0	0	1	1	1	1	1	1	1	1
CORRIMAL	1	1	1	1	1	2	2	2	2	2	3	3
CRANEBROOK	1	1	1	1	1	1	2	2	2	2	2	2
CULBURRA	0	0	0	0	0	0	0	0	0	0	0	0
DAPTO	1	1	1	2	2	2	2	2	2	2	2	3
DARKES FOREST	0	0	0	0	0	0	0	0	0	0	0	0
DOONSIDE	1	1	1	1	1	1	1	1	1	1	2	2
DUNDAS	1	1	1	1	1	1	1	1	1	1	1	1
EAST RICHMOND	1	1	1	1	1	2	2	2	2	2	3	3
EASTERN CREEK	0	0	1	1	1	1	1	1	1	1	1	1
EDMONDSON PARK	0	0	0	0	0	0	1	1	1	1	1	1
EMU PLAINS	0	0	1	1	1	1	1	1	1	1	1	1
FAIRFIELD	1	1	1	1	1	1	1	1	1	1	1	1
FIGTREE	1	1	1	2	2	2	2	3	3	3	3	4
GERRINGONG	0	0	0	0	0	0	0	1	1	1	1	1
GLENMORE PARK	1	1	1	1	1	1	1	2	2	2	2	2
GLENORIE	0	0	0	0	0	1	1	1	1	1	1	1
GLOSSODIA	0	0	0	1	1	1	1	1	1	1	1	1
GRANVILLE	0	1	1	1	1	1	1	1	1	1	1	1
GREYSTANES	0	0	0	0	0	0	0	1	1	1	1	1
HARTLEY VALE	0	0	0	0	0	0	0	0	0	0	0	0
HAZELBROOK	0	0	0	0	0	0	0	0	0	0	0	0
HELENSBURGH	0	0	0	0	0	0	1	1	1	1	1	1

Table A.18 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Commercial (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	1	2	2	2	2	3	3	3	4	4	4	5
HOLROYD	1	1	1	2	2	2	2	2	2	2	2	2
HOMEPRIDE	1	2	2	3	3	4	4	5	5	6	6	7
HORSLEY PARK	0	0	0	1	1	1	1	1	1	1	1	1
HUNTINGWOOD	0	1	1	1	1	1	1	1	1	1	1	1
HUSKISSON	1	2	2	3	3	3	4	4	4	5	5	6
ILFORD HALL	0	0	0	0	0	0	0	0	0	0	0	0
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	0	0	0	0	0	0	0	0	0	0	0	0
JASPER RD	0	0	0	0	1	1	1	1	1	1	1	1
JORDAN SPRINGS	0	0	0	0	1	1	1	1	1	1	1	1
KANDOS	0	0	0	0	0	1	1	1	1	1	1	1
KANGAROO VALLEY	0	0	0	0	0	0	0	0	0	0	0	0
KATOOMBA	1	1	1	1	1	1	1	1	1	1	1	1
KELLYVILLE	0	0	0	0	0	0	0	0	0	0	0	0
KEMBLA GRANGE	0	0	0	0	0	0	0	0	0	0	0	0
KEMPS CREEK	0	1	1	1	1	1	1	1	1	1	1	2
KENNY STREET	0	1	1	1	1	1	1	1	1	1	1	1
KENTHURST	1	1	2	2	2	3	3	3	3	4	4	4
KENTLYN	1	2	2	2	3	3	3	4	4	4	5	5
KIAMA	1	1	1	1	1	1	1	1	1	1	1	1
KINGSWOOD	1	2	3	4	4	5	6	6	7	8	9	9
KURRAJONG	0	0	0	1	1	1	1	1	1	1	1	1
LEABONS LANE	0	0	0	0	0	0	0	0	0	0	1	1
LENNOX	1	1	2	2	3	3	3	4	4	5	5	6
LITHGOW	1	1	1	1	1	1	1	1	2	2	2	2
LIVERPOOL 11KV	2	2	3	3	4	4	5	5	6	7	7	8
LUDDENHAM	0	0	0	0	0	1	1	1	1	1	1	1
MACQUARIE FIELDS	1	2	2	3	3	4	4	5	5	5	6	6
MALDON	1	1	2	2	2	3	3	3	3	4	4	4
MAMRE	1	1	1	1	1	1	1	2	2	2	2	2
MARAYONG	1	1	1	2	2	2	2	2	3	3	3	3
MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
MEADOW FLAT	0	0	0	0	0	0	0	0	0	0	0	0
MINTO	1	2	2	2	2	3	3	3	3	4	4	4
MITTAGONG	1	1	1	1	1	2	2	2	2	2	2	2
MOOREBANK	1	1	1	1	2	2	2	2	2	3	3	3
MOSS VALE	1	1	2	2	2	3	3	3	3	4	4	4
MOUNT OUSLEY	1	1	1	1	1	1	1	1	2	2	2	2
MUNGERIE PARK	3	3	4	4	5	5	6	6	7	7	8	9
NARELLAN	2	3	4	4	5	5	6	6	7	7	8	9
NEPEAN 11KV	2	2	2	3	3	3	3	3	4	4	4	4
NEWTON	1	1	1	1	1	2	2	2	2	2	2	2
NORTH EASTERN CREEK	0	0	0	0	0	0	0	0	0	1	1	1
NORTH LEPPINGTON	0	0	0	0	0	0	0	0	0	0	0	0
NORTH PARRAMATTA	1	1	1	1	1	1	1	1	1	1	1	2
NORTH RICHMOND	0	1	1	1	1	1	1	1	2	2	2	2
NORTH ROCKS	0	0	0	0	0	0	0	0	0	0	0	0
NORTH WARRAGAMBA	0	0	0	1	1	1	1	1	1	1	1	1
NORTH WOLLONGONG	1	1	2	2	2	2	3	3	3	4	4	4
NORTHMEAD	0	0	0	1	1	1	1	1	1	1	1	1
NOWRA	1	1	1	1	2	2	2	2	3	3	3	3
OAKDALE	0	0	0	0	0	0	0	0	0	0	1	1
ORAN PARK	0	0	0	1	1	1	1	1	1	1	1	1
PARKLEA	2	3	3	3	4	4	4	5	5	5	6	6
PENRITH 11KV	1	2	3	3	4	5	5	6	6	7	8	8
PLUMPTON	1	1	1	1	1	1	1	2	2	2	2	2

Table A.18 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Commercial (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0	1	1	1	1	1	2	2	2	2	2	3
PORT KEMBLA	0	1	1	1	1	1	1	2	2	2	2	2
PORTLAND	0	0	0	0	0	0	0	0	0	0	0	1
PRESTONS	1	1	1	1	1	1	1	1	1	2	2	2
PROSPECT	0	1	1	1	1	1	1	1	1	1	1	1
QUAKERS HILL	1	1	1	1	1	1	2	2	2	2	2	2
QUARRIES	0	0	0	1	1	1	1	1	1	1	1	1
RINGWOOD	0	0	1	1	1	1	1	1	1	1	1	1
RIVERSTONE	2	3	3	3	4	4	4	5	5	6	6	7
ROBERTSON	0	0	0	0	0	0	0	1	1	1	1	1
ROOTY HILL	1	2	2	2	2	2	2	3	3	3	3	3
ROSEHILL	0	0	1	1	1	1	1	1	1	1	1	1
RUSSELL VALE	0	1	1	1	1	1	2	2	2	2	2	2
RYDALMERE	1	1	1	2	2	2	2	2	2	2	2	3
SCHOFIELDS	1	1	1	1	1	1	2	2	2	2	2	2
SEVEN HILLS	1	1	1	2	2	2	2	2	2	2	2	2
SHELLHARBOUR	1	2	2	2	3	3	4	4	4	5	5	6
SHERWOOD	1	1	1	2	2	2	2	2	3	3	3	4
SMITHFIELD	1	1	1	1	1	1	1	1	2	2	2	2
SOUTH GRANVILLE	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH LEPPINGTON	1	1	1	1	1	2	2	2	2	2	2	3
SOUTH MARSDEN PARK	0	0	1	1	1	1	1	2	2	2	2	2
SOUTH NOWRA	1	1	1	1	1	1	1	1	1	1	2	2
SOUTH WINDSOR	2	2	2	3	3	3	3	3	4	4	4	4
SOUTH WOLLONGONG	0	1	1	1	1	2	2	2	2	2	3	3
SPRINGWOOD	1	1	1	1	1	1	1	1	1	1	1	1
ST MARYS	1	1	1	2	2	2	3	3	3	4	4	4
SUSSEX INLET	0	0	0	0	0	0	1	1	1	1	1	1
TAHMOOR	1	1	1	1	2	2	2	2	2	3	3	3
THE OAKS	0	0	0	0	0	0	0	0	0	0	0	0
TOMERONG	0	0	0	0	0	0	0	0	0	0	0	0
ULLADULLA	1	2	2	2	2	3	3	3	4	4	4	5
UNANDERRA	1	1	1	1	1	1	1	1	1	1	1	2
WARILLA	1	1	1	1	1	1	2	2	2	2	2	2
WENTWORTH FALLS	0	0	0	0	0	0	1	1	1	1	1	1
WERRINGTON	1	2	3	3	4	4	5	5	6	6	7	7
WEST CASTLE HILL	0	1	1	1	1	1	1	1	1	1	1	2
WEST LIVERPOOL 11KV	1	2	2	3	3	3	4	4	5	5	6	7
WEST PARRAMATTA	0	1	1	1	1	1	1	1	1	2	2	2
WEST PENNANT HILLS	0	0	0	1	1	1	1	1	1	1	1	1
WEST WETHERILL PARK 11KV	2	2	2	2	2	2	2	2	2	2	2	2
WEST WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
WESTMEAD	0	0	0	0	0	0	0	0	0	0	0	0
WETHERILL PARK	1	1	1	1	1	1	1	2	2	2	2	2
WHALAN	1	1	1	1	1	1	1	1	2	2	2	2
WILTON	0	0	0	0	0	0	0	0	0	0	0	0
WINDSOR	1	1	1	2	2	2	2	2	2	2	2	3
WISEMANS	0	0	1	1	1	1	1	1	1	1	1	1
WOMBARRA	0	0	0	0	0	0	0	0	0	0	0	0
WOODPARK	1	1	1	1	1	1	1	1	1	1	1	2
YATTE YATTAH	0	0	0	0	0	0	0	0	0	0	0	0
YENNORA	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL	**98**	**128**	**153**	**176**	**198**	**219**	**240**	**261**	**282**	**305**	**330**	**356**

Table A.19 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Industrial (other) (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0	0	0	0	0	0	0	0	0	0	0	0
ALBION PARK	0	0	0	0	0	0	0	1	1	1	1	1
AMBARVALE	0	0	0	0	0	0	0	0	0	0	0	0
ANZAC VILLAGE	0	0	0	0	0	0	0	0	0	0	0	0
APPIN	0	0	0	0	0	0	0	0	0	0	0	0
ARNDELL PARK	0	0	0	0	0	0	0	0	0	0	0	0
BAULKHAM HILLS 11KV	0	0	0	0	0	0	0	0	0	0	0	0
BELLA VISTA	0	0	0	0	1	1	1	1	1	1	1	1
BERRY	0	0	0	0	0	0	0	0	0	0	0	0
BLACKHEATH	0	0	0	0	0	0	0	0	0	0	0	0
BLACKMANS FLAT	0	0	0	0	0	0	0	0	0	0	0	0
BLAXLAND	0	0	0	0	0	0	0	0	0	0	0	0
BOLONG	0	0	0	0	0	0	0	0	0	0	0	0
BOMADERRY	0	0	0	0	0	0	0	0	1	1	1	1
BONNYRIGG	0	0	0	0	0	0	0	0	0	0	0	0
BOSSLEY PARK	0	0	0	0	0	0	0	0	0	0	0	1
BOW BOWING	0	0	0	0	0	0	0	0	0	0	0	0
BOWRAL	0	0	0	0	0	0	0	0	0	0	1	1
BRINGELLY	0	0	0	0	0	0	0	0	0	0	0	0
BULLI	0	0	0	0	0	0	0	0	0	0	0	0
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
CAMBRIDGE PARK	0	0	0	1	1	1	1	1	1	1	1	2
CAMPBELLTOWN	0	0	0	0	0	0	0	0	0	0	0	0
CANLEY VALE	0	0	0	0	0	0	0	0	0	0	0	0
CARRAMAR	0	0	0	0	0	0	0	0	0	0	0	0
CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
CASULA	0	0	0	0	0	0	0	0	0	0	0	0
CATTAI	0	0	0	0	0	0	0	0	0	0	0	0
CAWDOR	0	0	0	0	0	0	0	0	0	0	0	0
CHERITON AVENUE	0	0	0	0	1	1	1	1	1	1	1	1
CHIPPING NORTON	0	0	0	0	0	0	0	0	0	0	0	0
CLAREMONT MEADOWS	0	0	0	0	0	0	0	0	0	0	0	0
CORRIMAL	0	0	0	0	0	0	0	0	0	0	0	0
CRANEBROOK	0	0	0	0	0	0	0	0	0	1	1	1
CULBURRA	0	0	0	0	0	0	0	0	0	0	0	0
DAPTO	0	0	0	0	0	0	1	1	1	1	1	1
DARKES FOREST	0	0	0	0	0	0	0	0	0	0	0	0
DOONSIDE	0	0	0	0	0	0	0	0	0	0	1	1
DUNDAS	0	0	0	0	0	0	0	0	1	1	1	1
EAST RICHMOND	0	0	0	0	0	0	0	0	0	0	0	1
EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
EDMONDSON PARK	0	0	0	0	0	0	0	0	0	0	0	0
EMU PLAINS	0	0	0	0	0	0	0	0	0	0	0	0
FAIRFIELD	0	0	0	0	0	0	0	0	0	0	0	0
FIGTREE	0	0	0	0	0	0	0	1	1	1	1	1
GERRINGONG	0	0	0	0	0	0	0	0	0	0	0	0
GLENMORE PARK	0	0	0	0	0	0	0	0	0	0	1	1
GLENORIE	0	0	0	0	0	0	0	0	0	0	0	0
GLOSSODIA	0	0	0	0	0	0	0	0	0	0	0	0
GRANVILLE	0	0	0	0	0	0	0	0	0	0	0	0
GREYSTANES	0	0	0	0	0	0	0	0	0	0	0	0
HARTLEY VALE	0	0	0	0	0	0	0	0	0	0	0	0
HAZELBROOK	0	0	0	0	0	0	0	0	0	0	0	0
HELENSBURGH	0	0	0	0	0	0	0	0	0	0	0	0

Table A.19 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Industrial (other) (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0	0	0	0	0	0	0	1	1	1	1	1
HOLROYD	0	0	0	1	1	1	1	1	1	1	2	2
HOMEPRIDE	0	0	0	0	0	0	0	0	0	0	0	0
HORSLEY PARK	0	0	0	0	0	0	0	0	0	0	0	0
HUNTINGWOOD	0	0	0	0	0	0	0	0	0	0	0	0
HUSKISSON	0	0	0	1	1	1	1	1	1	1	2	2
ILFORD HALL	0	0	0	0	0	0	0	0	0	0	0	0
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	0	0	0	0	0	0	0	0	0	0	0	0
JASPER RD	0	0	0	0	0	0	0	0	0	0	0	0
JORDAN SPRINGS	0	0	0	0	0	0	0	0	0	0	0	0
KANDOS	0	0	0	0	0	0	0	0	0	0	0	0
KANGAROO VALLEY	0	0	0	0	0	0	0	0	0	0	0	0
KATOOMBA	0	0	0	0	0	0	0	0	0	0	0	0
KELLYVILLE	0	0	0	0	0	0	0	0	0	0	0	0
KEMBLA GRANGE	0	0	0	0	0	0	0	0	0	0	0	0
KEMPS CREEK	0	0	0	0	0	0	0	0	0	0	0	0
KENNY STREET	0	0	0	0	0	0	0	0	0	0	0	0
KENTHURST	0	0	0	0	0	0	0	1	1	1	1	1
KENTLYN	0	0	0	1	1	1	1	1	1	1	2	2
KIAMA	0	0	0	0	0	0	0	0	0	0	1	1
KINGSWOOD	0	0	0	0	1	1	1	1	1	1	1	1
KURRAJONG	0	0	0	0	0	0	0	0	0	0	0	0
LEABONS LANE	0	0	0	0	0	0	0	0	0	0	0	0
LENNOX	0	0	0	0	0	0	0	0	0	0	0	0
LITHGOW	0	0	0	0	0	0	0	0	0	0	0	0
LIVERPOOL 11KV	0	0	1	1	1	1	2	2	2	2	3	3
LUDDENHAM	0	0	0	0	0	0	0	0	0	0	0	0
MACQUARIE FIELDS	0	0	0	1	1	1	1	1	1	1	2	2
MALDON	0	0	0	0	0	0	0	1	1	1	1	1
MAMRE	0	0	0	0	0	0	0	0	0	1	1	1
MARAYONG	0	0	0	0	0	0	0	0	0	0	0	0
MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
MEADOW FLAT	0	0	0	0	0	0	0	0	0	0	0	0
MINTO	0	0	0	0	0	0	0	0	1	1	1	1
MITTAGONG	0	0	0	0	0	0	0	0	0	0	0	1
MOOREBANK	0	0	0	0	0	0	0	0	0	0	0	0
MOSS VALE	0	0	0	0	0	0	0	0	0	0	1	1
MOUNT OUSLEY	0	0	0	0	0	0	0	0	0	0	0	0
MUNGERIE PARK	0	0	1	1	1	1	1	1	2	2	2	2
NARELLAN	0	0	0	1	1	1	1	1	1	1	1	2
NEPEAN 11KV	0	0	1	1	1	1	1	1	2	2	2	2
NEWTON	0	0	0	0	0	0	0	1	1	1	1	1
NORTH EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0
NORTH LEPPINGTON	0	0	0	0	0	0	0	0	0	0	0	0
NORTH PARRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
NORTH RICHMOND	0	0	0	0	0	0	0	0	0	0	0	0
NORTH ROCKS	0	0	0	0	0	0	0	0	0	0	0	0
NORTH WARRAGAMBA	0	0	0	0	0	0	0	0	0	0	0	0
NORTH WOLLONGONG	0	0	0	0	0	0	0	0	1	1	1	1
NORTHMEAD	0	0	0	0	0	0	0	0	0	0	0	0
NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
OAKDALE	0	0	0	0	0	0	0	0	0	0	0	0
ORAN PARK	0	0	0	0	0	0	0	0	0	0	0	0
PARKLEA	0	0	0	0	0	0	1	1	1	1	1	1
PENRITH 11KV	0	0	0	0	0	0	0	0	0	0	0	0
PLUMPTON	0	0	0	0	0	0	1	1	1	1	1	1

Table A.19 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Industrial (other) (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0	0	0	0	0	0	0	0	0	0	0	0
PORT KEMBLA	0	0	0	0	0	0	0	0	0	0	0	0
PORTLAND	0	0	0	0	0	0	0	0	0	0	0	0
PRESTONS	0	0	0	0	0	0	0	0	0	0	0	1
PROSPECT	0	0	0	0	0	0	0	0	0	0	0	0
QUAKERS HILL	0	0	0	0	0	0	0	1	1	1	1	1
QUARRIES	0	0	0	0	0	0	0	0	0	0	0	0
RINGWOOD	0	0	0	0	0	0	0	0	0	0	0	0
RIVERSTONE	0	0	1	1	1	1	1	1	1	2	2	2
ROBERTSON	0	0	0	0	0	0	0	0	0	0	0	0
ROOTY HILL	0	0	0	0	1	1	1	1	1	1	1	1
ROSEHILL	0	0	0	0	0	0	0	0	0	0	0	0
RUSSELL VALE	0	0	0	0	0	0	0	0	0	0	0	0
RYDALMERE	0	0	0	0	0	0	0	0	1	1	1	1
SCHOFIELDS	0	0	0	0	0	0	1	1	1	1	1	1
SEVEN HILLS	0	0	0	0	0	0	0	0	1	1	1	1
SHELLHARBOUR	0	0	0	0	0	0	1	1	1	1	1	1
SHERWOOD	0	0	0	0	0	0	0	1	1	1	1	1
SMITHFIELD	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH GRANVILLE	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH LEPPINGTON	0	0	0	0	0	0	0	0	1	1	1	1
SOUTH MARSDEN PARK	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH NOWRA	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH WINDSOR	0	0	0	0	0	1	1	1	1	1	1	1
SOUTH WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
SPRINGWOOD	0	0	0	0	0	0	0	0	0	0	0	0
ST MARYS	0	0	0	0	0	0	1	1	1	1	1	1
SUSSEX INLET	0	0	0	0	0	0	0	0	0	0	0	0
TAHMOOR	0	0	0	0	0	0	0	1	1	1	1	1
THE OAKS	0	0	0	0	0	0	0	0	0	0	0	0
TOMERONG	0	0	0	0	0	0	0	0	0	0	0	0
ULLADULLA	0	0	0	0	0	0	0	1	1	1	1	1
UNANDERRA	0	0	0	0	0	0	0	0	0	0	0	0
WARILLA	0	0	0	0	0	0	0	0	0	0	0	1
WENTWORTH FALLS	0	0	0	0	0	0	0	0	0	0	0	0
WERRINGTON	0	0	0	0	0	0	0	0	0	0	0	0
WEST CASTLE HILL	0	0	0	0	0	0	0	0	0	0	0	0
WEST LIVERPOOL 11KV	0	0	0	0	0	0	0	1	1	1	1	1
WEST PARRAMATTA	0	0	0	0	0	0	0	0	0	0	0	0
WEST PENNANT HILLS	0	0	0	0	0	0	0	0	0	0	0	0
WEST WETHERILL PARK 11KV	0	0	0	0	0	0	0	0	0	0	0	0
WEST WOLLONGONG	0	0	0	0	0	0	0	0	0	0	0	0
WESTMEAD	0	0	0	0	0	0	0	0	0	0	0	0
WETHERILL PARK	0	0	0	0	0	0	0	0	0	0	0	0
WHALAN	0	0	0	0	0	0	0	0	0	0	0	0
WILTON	0	0	0	0	0	0	0	0	0	0	0	0
WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0
WISEMANS	0	0	0	0	0	0	0	0	0	0	0	0
WOMBARRA	0	0	0	0	0	0	0	0	0	0	0	0
WOODPARK	0	0	0	0	0	0	0	0	0	0	0	0
YATTE YATTAH	0	0	0	0	0	0	0	0	0	0	0	0
YENNORA	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**4**	**11**	**16**	**21**	**26**	**31**	**36**	**41**	**46**	**51**	**57**	**63**

Table A.20 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Total ZSS (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	10	12	13	14	15	16	17	19	20	21	23	24
ALBION PARK	16	18	19	21	22	24	25	27	28	29	31	33
AMBARVALE	9	10	12	13	14	15	16	18	19	20	22	23
ANZAC VILLAGE	8	9	10	11	12	13	14	15	16	17	18	19
APPIN	3	3	4	5	5	6	6	7	7	8	9	9
ARNDELL PARK	4	5	6	6	7	8	8	9	10	10	11	12
BAULKHAM HILLS 11KV	8	9	11	12	13	14	15	17	18	19	20	22
BELLA VISTA	14	16	19	21	23	24	26	28	30	33	35	38
BERRY	5	6	7	8	8	9	10	10	11	12	13	14
BLACKHEATH	3	3	3	4	4	4	4	5	5	5	6	6
BLACKMANS FLAT	1	2	2	3	3	4	4	5	5	6	6	7
BLAXLAND	8	9	9	10	10	11	11	12	12	13	13	14
BOLONG	1	1	1	2	2	2	2	2	2	3	3	3
BOMADERRY	10	11	13	14	15	16	17	18	19	21	22	23
BONNYRIGG	10	11	13	14	15	17	18	19	21	22	24	25
BOSSLEY PARK	9	10	10	11	12	12	13	14	15	15	16	17
BOW BOWING	4	5	6	6	7	7	8	8	9	10	10	11
BOWRAL	7	9	10	12	13	15	16	18	19	21	22	24
BRINGELLY	3	4	5	6	6	7	8	9	10	11	13	14
BULLI	5	7	9	11	13	14	16	17	19	20	22	24
BYLONG	0	0	0	0	0	0	0	0	0	0	0	0
CABRAMATTA	3	4	5	6	6	7	8	8	9	10	11	12
CAMBRIDGE PARK	12	13	15	16	18	19	21	22	24	25	27	28
CAMPBELLTOWN	7	9	11	12	14	15	17	19	20	22	24	26
CANLEY VALE	8	9	11	12	13	14	15	17	18	19	20	22
CARRAMAR	3	4	4	5	6	6	7	8	8	9	10	10
CASTLE HILL	4	6	9	11	13	16	18	20	22	25	27	30
CASULA	10	12	14	15	17	19	20	22	24	25	27	29
CATTAI	4	5	6	7	8	9	10	10	11	12	13	14
CAWDOR	6	8	10	11	13	14	16	18	19	21	24	26
CHERITON AVENUE	7	9	10	12	14	15	17	19	21	22	25	27
CHIPPING NORTON	5	6	6	7	8	8	9	9	10	11	12	12
CLAREMONT MEADOWS	7	10	12	14	16	18	20	22	24	26	28	31
CORRIMAL	7	8	9	11	12	13	14	15	16	17	19	20
CRANEBROOK	6	8	9	11	12	13	14	15	17	18	19	21
CULBURRA	4	6	6	7	8	9	10	11	11	12	13	14
DAPTO	17	19	21	23	25	26	28	30	31	33	35	37
DARKES FOREST	0	0	0	0	1	1	1	1	1	1	1	1
DOONSIDE	17	20	23	26	28	31	33	36	38	41	44	48
DUNDAS	7	9	11	13	14	16	18	19	21	23	25	27
EAST RICHMOND	4	5	6	6	7	7	8	8	9	9	10	11
EASTERN CREEK	1	1	1	1	1	1	1	1	1	1	1	1
EDMONDSON PARK	4	5	6	6	7	8	9	9	10	11	12	13
EMU PLAINS	7	8	9	9	10	10	11	12	12	13	13	14
FAIRFIELD	4	5	5	5	6	6	6	7	7	8	8	8
FIGTREE	10	11	13	14	15	17	18	19	20	21	23	24
GERRINGONG	3	4	4	4	4	5	5	5	5	5	6	6
GLENMORE PARK	14	16	17	18	20	21	22	23	25	26	28	29
GLENORIE	2	3	3	3	4	4	5	5	5	6	6	7
GLOSSODIA	5	6	7	8	9	10	11	12	13	14	15	16
GRANVILLE	3	4	5	6	7	8	9	9	10	11	12	13
GREYSTANES	4	5	6	6	7	7	8	8	9	9	10	11
HARTLEY VALE	0	0	0	0	0	0	0	0	0	0	0	0
HAZELBROOK	5	5	5	6	6	6	7	7	7	8	8	8
HELENSBURGH	3	3	4	4	4	5	5	6	6	6	7	7

Table A.20 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Total ZSS (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	16	19	21	22	24	26	28	30	32	34	36	38
HOLROYD	10	12	14	17	19	21	23	25	27	29	32	35
HOMEPRIDE	2	4	5	5	6	7	8	9	10	11	12	13
HORSLEY PARK	2	2	2	3	3	3	3	3	3	3	3	3
HUNTINGWOOD	2	2	2	2	3	3	3	3	3	4	4	4
HUSKISSON	10	12	13	15	16	18	19	20	22	23	25	26
ILFORD HALL	0	0	1	1	1	1	1	1	1	1	1	1
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	1	2	2	2	3	3	3	4	4	4	4	5
JASPER RD	8	9	10	11	12	13	13	14	15	16	17	19
JORDAN SPRINGS	7	8	9	10	11	12	12	13	14	15	16	17
KANDOS	2	3	4	5	6	7	8	9	10	12	13	14
KANGAROO VALLEY	1	1	1	2	2	2	2	2	3	3	3	3
KATOOMBA	5	6	6	7	7	8	8	8	9	9	10	10
KELLYVILLE	6	7	8	9	10	11	11	12	13	14	15	16
KEMBLA GRANGE	3	3	4	4	5	5	6	6	7	7	8	8
KEMPS CREEK	2	3	3	4	4	5	5	5	6	6	7	7
KENNY STREET	1	1	1	1	1	1	1	1	1	1	1	1
KENTHURST	8	10	12	14	16	18	20	21	23	26	28	30
KENTLYN	14	17	19	21	23	25	27	29	31	33	35	37
KIAMA	8	9	10	11	12	13	14	15	16	17	18	19
KINGSWOOD	10	13	15	18	20	22	25	27	29	32	35	37
KURRAJONG	5	7	8	9	10	11	12	13	14	15	17	18
LEABONS LANE	5	6	7	8	9	10	11	12	14	15	16	17
LENNOX	1	2	3	3	4	4	5	5	6	7	7	8
LITHGOW	7	8	9	10	12	12	13	14	15	17	18	19
LIVERPOOL 11KV	8	9	9	10	11	11	12	12	13	14	15	15
LUDDENHAM	2	3	4	5	6	7	8	9	10	11	12	14
MACQUARIE FIELDS	12	15	18	20	22	24	26	28	30	32	35	37
MALDON	8	11	14	16	19	21	23	25	28	30	33	36
MAMRE	12	13	15	16	18	19	20	22	23	25	26	28
MARAYONG	5	7	8	10	11	12	13	15	16	17	19	21
MARSDEN PARK	9	10	10	11	12	12	13	13	14	14	15	16
MEADOW FLAT	1	1	1	1	1	1	1	1	1	1	2	2
MINTO	19	22	24	26	27	29	31	33	35	36	39	41
MITTAGONG	8	10	11	12	13	14	15	17	18	19	20	22
MOOREBANK	4	5	6	6	7	8	9	10	10	11	12	13
MOSS VALE	8	9	11	12	14	15	16	17	19	20	21	23
MOUNT OUSLEY	5	6	7	8	9	10	11	12	12	13	14	15
MUNGERIE PARK	34	38	42	46	49	53	56	60	63	67	72	76
NARELLAN	22	25	28	30	32	35	37	40	43	46	49	53
NEPEAN 11KV	17	20	23	26	29	32	34	38	41	45	49	53
NEWTON	6	7	8	8	9	10	10	11	12	12	13	14
NORTH EASTERN CREEK	0	0	0	0	1	1	1	1	1	1	1	1
NORTH LEPPINGTON	1	2	2	3	4	4	5	5	6	7	7	8
NORTH PARRAMATTA	4	5	5	6	7	8	8	9	10	11	12	13
NORTH RICHMOND	5	6	7	8	9	10	11	11	12	13	14	16
NORTH ROCKS	4	5	5	6	7	7	8	9	9	10	11	12
NORTH WARRAGAMBA	4	6	7	9	10	11	13	14	15	17	18	20
NORTH WOLLONGONG	2	3	4	4	5	5	6	6	7	8	8	9
NORTHMEAD	4	5	6	7	7	8	9	10	11	11	12	13
NOWRA	7	9	10	12	13	15	16	17	19	20	22	24
OAKDALE	1	1	2	2	3	3	3	4	4	5	5	6
ORAN PARK	13	18	21	25	29	33	37	42	46	51	57	63
PARKLEA	34	37	40	43	46	49	52	54	57	60	64	67
PENRITH 11KV	3	4	5	6	7	8	9	10	11	12	13	14
PLUMPTON	12	14	15	17	19	20	22	24	25	27	29	31

Table A.20 Total in-house use by PV systems by zone substation – All solar systems – Endeavour Energy – Total ZSS (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	2	2	3	3	4	4	5	5	6	6	7	7
PORT KEMBLA	4	6	7	8	9	10	12	13	14	15	16	18
PORTLAND	2	2	2	3	3	3	3	4	4	4	4	5
PRESTONS	14	16	17	19	20	22	23	25	26	28	30	32
PROSPECT	6	6	7	7	7	8	8	9	9	10	10	11
QUAKERS HILL	15	17	20	22	24	26	28	30	32	35	37	40
QUARRIES	3	3	4	4	5	5	5	6	6	7	7	7
RINGWOOD	4	4	5	5	6	6	7	7	8	8	9	9
RIVERSTONE	11	12	13	14	15	16	17	18	18	19	20	22
ROBERTSON	2	3	4	4	5	5	6	6	7	8	8	9
ROOTY HILL	14	16	18	20	22	24	26	28	29	32	34	36
ROSEHILL	1	1	1	2	2	2	2	2	3	3	3	4
RUSSELL VALE	6	7	9	10	11	12	14	15	16	17	18	20
RYDALMERE	6	8	9	10	12	13	14	15	17	18	19	21
SCHOFIELDS	17	20	23	26	28	31	33	36	38	41	44	47
SEVEN HILLS	5	6	6	7	7	7	8	8	8	9	9	10
SHELLHARBOUR	12	15	17	19	21	23	25	27	29	32	34	37
SHERWOOD	5	6	7	8	9	10	11	11	12	13	14	15
SMITHFIELD	10	12	13	14	15	16	17	18	19	20	22	23
SOUTH GRANVILLE	3	4	5	6	7	7	8	9	10	11	12	13
SOUTH LEPPINGTON	10	12	14	16	18	19	21	23	25	27	29	31
SOUTH MARSDEN PARK	2	4	5	6	7	8	9	10	11	12	14	15
SOUTH NOWRA	3	3	3	3	4	4	4	5	5	5	5	6
SOUTH WINDSOR	10	12	14	15	17	19	20	22	23	25	27	29
SOUTH WOLLONGONG	2	2	2	3	3	3	4	4	4	5	5	6
SPRINGWOOD	9	10	11	11	12	13	13	14	15	15	16	17
ST MARYS	8	10	12	13	15	17	18	20	22	23	25	28
SUSSEX INLET	3	4	4	5	6	6	7	8	8	9	10	10
TAHMOOR	8	11	13	16	18	20	23	25	27	30	33	36
THE OAKS	3	3	4	5	5	6	7	7	8	9	10	11
TOMERONG	5	6	6	7	7	7	8	8	9	9	9	10
ULLADULLA	12	14	15	17	19	20	21	23	24	26	28	29
UNANDERRA	3	3	4	4	4	5	5	5	6	6	7	7
WARILLA	8	10	12	13	15	16	18	19	21	22	24	26
WENTWORTH FALLS	3	4	4	4	5	5	5	6	6	6	7	7
WERRINGTON	7	9	11	13	14	16	17	18	20	21	23	24
WEST CASTLE HILL	7	8	9	11	12	13	14	15	16	18	19	21
WEST LIVERPOOL 11KV	7	9	11	13	14	16	17	19	20	22	24	25
WEST PARRAMATTA	1	1	1	1	1	1	1	1	2	2	2	2
WEST PENNANT HILLS	8	9	10	11	12	13	14	15	16	18	19	20
WEST WETHERILL PARK 11KV	2	2	2	2	2	2	2	2	2	2	2	2
WEST WOLLONGONG	3	4	5	6	6	7	8	8	9	10	10	11
WESTMEAD	0	0	1	1	1	1	1	1	1	1	1	1
WETHERILL PARK	2	2	2	2	2	3	3	3	3	3	3	3
WHALAN	7	8	9	9	10	11	11	12	13	14	14	15
WILTON	2	2	3	3	3	3	4	4	4	4	5	5
WINDSOR	5	6	7	8	9	9	10	11	11	12	13	14
WISEMANS	1	1	2	2	2	3	3	3	3	4	4	4
WOMBARRA	3	3	4	4	5	5	6	6	7	7	8	8
WOODPARK	1	1	1	2	2	2	2	2	2	2	2	3
YATTE YATTAH	2	2	3	3	3	4	4	5	5	5	6	6
YENNORA	4	5	6	7	8	9	9	10	11	12	12	13
TOTAL	**1034**	**1243**	**1422**	**1590**	**1758**	**1914**	**2074**	**2236**	**2403**	**2580**	**2776**	**2980**

Table A.21 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Residential (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	9.8	11.2	12.3	13.4	14.5	15.4	16.3	17.2	18.2	19.1	20.1	21.0
ALBION PARK	14.0	15.5	16.8	18.0	19.2	20.2	21.2	22.1	23.1	24.0	25.0	26.0
AMBARVALE	8.3	9.8	11.0	12.2	13.3	14.2	15.2	16.2	17.1	18.0	19.0	20.0
ANZAC VILLAGE	7.0	8.1	9.0	9.9	10.7	11.4	12.2	12.9	13.6	14.3	15.1	15.9
APPIN	2.4	3.0	3.5	4.0	4.4	4.9	5.3	5.7	6.0	6.4	6.8	7.2
ARNDELL PARK	3.4	4.2	4.8	5.4	6.0	6.5	7.0	7.5	8.0	8.5	9.1	9.6
BAULKHAM HILLS 11KV	7.2	8.5	9.6	10.7	11.7	12.6	13.5	14.4	15.3	16.1	17.1	18.0
BELLA VISTA	12.2	14.2	15.9	17.5	19.0	20.3	21.7	23.0	24.3	25.6	27.0	28.3
BERRY	4.4	5.2	5.8	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5
BLACKHEATH	2.5	2.8	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9
BLACKMANS FLAT	1.1	1.7	2.2	2.7	3.1	3.5	3.9	4.2	4.6	5.0	5.3	5.7
BLAXLAND	7.5	8.1	8.5	8.9	9.3	9.7	10.1	10.4	10.7	11.0	11.4	11.7
BOLONG	0.8	1.0	1.2	1.4	1.5	1.7	1.8	1.9	2.1	2.2	2.3	2.4
BOMADERRY	8.5	9.6	10.6	11.4	12.2	12.9	13.6	14.3	15.0	15.7	16.4	17.1
BONNYRIGG	8.9	10.4	11.6	12.8	13.9	14.9	15.9	16.8	17.7	18.7	19.7	20.6
BOSSLEY PARK	7.4	8.1	8.7	9.2	9.7	10.1	10.5	10.9	11.3	11.7	12.1	12.5
BOW BOWING	3.6	4.0	4.4	4.8	5.1	5.4	5.6	5.9	6.2	6.5	6.7	7.0
BOWRAL	5.8	7.4	8.7	9.9	11.0	12.0	13.0	14.0	14.9	15.8	16.8	17.8
BRINGELLY	2.1	3.0	3.7	4.4	5.0	5.6	6.2	6.8	7.4	8.1	8.7	9.4
BULLI	5.0	6.7	8.2	9.6	10.9	12.1	13.3	14.4	15.5	16.6	17.8	19.0
BYLONG	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4
CABRAMATTA	2.6	3.5	4.2	4.9	5.5	6.1	6.6	7.2	7.7	8.3	8.8	9.4
CAMBRIDGE PARK	10.3	11.6	12.7	13.7	14.7	15.5	16.4	17.2	18.1	18.9	19.8	20.7
CAMPBELLTOWN	5.9	7.5	8.9	10.1	11.4	12.5	13.7	14.8	15.9	17.0	18.2	19.5
CANLEY VALE	7.1	8.4	9.6	10.7	11.7	12.6	13.5	14.3	15.1	16.0	16.9	17.7
CARRAMAR	2.3	3.1	3.8	4.4	5.0	5.5	6.0	6.4	6.9	7.4	7.8	8.3
CASTLE HILL	3.1	5.6	7.7	9.6	11.4	13.0	14.6	16.1	17.6	19.2	20.8	22.3
CASULA	9.1	10.9	12.4	13.8	15.2	16.4	17.6	18.7	19.8	21.0	22.2	23.3
CATTAI	3.3	4.3	5.1	5.9	6.6	7.2	7.9	8.5	9.1	9.7	10.3	10.9
CAWDOR	5.6	7.3	8.7	10.0	11.4	12.6	13.8	15.0	16.2	17.5	18.8	20.2
CHERITON AVENUE	5.7	7.2	8.4	9.6	10.7	11.7	12.7	13.7	14.7	15.7	16.8	17.9
CHIPPING NORTON	4.3	4.9	5.5	5.9	6.4	6.9	7.3	7.7	8.1	8.6	9.0	9.5
CLAREMONT MEADOWS	6.6	8.9	10.8	12.6	14.4	16.0	17.6	19.1	20.7	22.2	23.9	25.6
CORRIMAL	6.0	7.1	8.1	9.0	9.8	10.5	11.2	11.9	12.6	13.3	14.0	14.7
CRANEBROOK	5.6	6.9	7.9	8.9	9.9	10.7	11.5	12.4	13.1	13.9	14.8	15.6
CULBURRA	4.1	5.2	6.0	6.8	7.6	8.2	8.9	9.5	10.2	10.8	11.4	12.1
DAPTO	15.3	17.2	18.8	20.3	21.7	22.9	24.2	25.3	26.5	27.6	28.8	30.0
DARKES FOREST	0.1	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.8	0.9	0.9
DOONSIDE	15.8	18.7	21.3	23.6	25.8	27.8	29.8	31.7	33.6	35.6	37.6	39.6
DUNDAS	6.3	8.2	9.8	11.3	12.7	14.0	15.2	16.4	17.6	18.8	20.1	21.4
EAST RICHMOND	3.7	4.1	4.4	4.7	4.9	5.2	5.4	5.6	5.9	6.1	6.3	6.5
EASTERN CREEK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
EDMONDSON PARK	3.6	4.5	5.2	5.9	6.5	7.1	7.7	8.3	8.8	9.4	10.0	10.5
EMU PLAINS	6.6	7.2	7.8	8.3	8.8	9.3	9.7	10.1	10.5	10.9	11.4	11.8
FAIRFIELD	3.2	3.6	4.0	4.3	4.6	4.8	5.1	5.3	5.5	5.8	6.0	6.3
FIGTREE	8.5	9.7	10.7	11.7	12.5	13.3	14.1	14.8	15.6	16.3	17.0	17.8
GERRINGONG	2.9	3.2	3.4	3.6	3.7	3.9	4.0	4.2	4.3	4.5	4.6	4.8
GLENMORE PARK	12.8	14.2	15.4	16.5	17.6	18.5	19.4	20.3	21.2	22.1	23.0	23.9
GLENORIE	1.9	2.3	2.6	2.9	3.1	3.4	3.6	3.9	4.1	4.3	4.6	4.8
GLOSSODIA	4.3	5.4	6.3	7.2	8.0	8.7	9.4	10.1	10.8	11.5	12.2	12.9
GRANVILLE	2.9	3.8	4.5	5.2	5.9	6.5	7.1	7.7	8.2	8.8	9.5	10.1
GREYSTANES	4.0	4.6	5.1	5.5	6.0	6.4	6.8	7.2	7.6	7.9	8.4	8.8
HARTLEY VALE	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
HAZELBROOK	4.2	4.6	4.9	5.2	5.5	5.7	5.9	6.2	6.4	6.6	6.8	7.1
HELENSBURGH	2.4	2.8	3.2	3.5	3.8	4.0	4.3	4.5	4.8	5.0	5.3	5.5

Table A.21 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Residential (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	14.9	16.6	18.1	19.4	20.8	21.9	23.1	24.3	25.4	26.5	27.7	29.0
HOLROYD	8.1	10.3	12.2	14.0	15.7	17.2	18.7	20.2	21.6	23.1	24.7	26.2
HOMEPRIDE	1.5	2.0	2.4	2.8	3.1	3.5	3.8	4.1	4.4	4.7	5.1	5.4
HORSLEY PARK	1.8	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4
HUNTINGWOOD	1.1	1.3	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
HUSKISSON	8.3	9.4	10.4	11.2	12.1	12.8	13.5	14.2	14.9	15.6	16.3	17.0
ILFORD HALL	0.2	0.3	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	1.0
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	1.4	1.7	2.0	2.2	2.5	2.7	2.9	3.1	3.3	3.5	3.8	4.0
JASPER RD	7.5	8.5	9.3	10.0	10.8	11.4	12.1	12.7	13.4	14.0	14.7	15.4
JORDAN SPRINGS	6.8	7.7	8.5	9.2	9.8	10.4	11.0	11.6	12.1	12.7	13.3	13.9
KANDOS	1.5	2.8	3.8	4.8	5.7	6.5	7.2	8.0	8.7	9.4	10.2	10.9
KANGAROO VALLEY	0.9	1.1	1.3	1.5	1.6	1.8	1.9	2.0	2.2	2.3	2.4	2.6
KATOOMBA	4.4	4.9	5.3	5.6	6.0	6.3	6.6	6.8	7.1	7.4	7.7	8.0
KELLYVILLE	5.8	6.8	7.7	8.5	9.3	10.0	10.6	11.3	12.0	12.7	13.4	14.1
KEMBLA GRANGE	2.6	3.1	3.6	4.0	4.4	4.7	5.1	5.4	5.8	6.1	6.4	6.8
KEMPS CREEK	1.9	2.3	2.6	2.9	3.2	3.5	3.7	4.0	4.2	4.4	4.7	4.9
KENNY STREET	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
KENTHURST	6.5	8.4	9.9	11.4	12.8	14.0	15.3	16.5	17.7	18.9	20.2	21.5
KENTLYN	12.2	14.1	15.7	17.2	18.6	19.9	21.1	22.3	23.5	24.7	25.9	27.1
KIAMA	6.8	7.9	8.8	9.6	10.4	11.1	11.8	12.5	13.2	13.8	14.5	15.2
KINGSWOOD	8.1	10.0	11.6	13.1	14.5	15.7	17.0	18.2	19.4	20.6	21.8	23.1
KURRAJONG	4.7	6.0	7.1	8.1	9.0	9.9	10.7	11.5	12.2	13.0	13.8	14.6
LEABONS LANE	4.3	5.6	6.6	7.6	8.6	9.4	10.3	11.1	11.9	12.7	13.6	14.4
LENNOX	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.5
LITHGOW	6.0	7.1	8.0	8.9	9.7	10.4	11.1	11.8	12.5	13.2	13.8	14.5
LIVERPOOL 11KV	6.1	5.9	5.8	5.7	5.6	5.4	5.3	5.2	5.2	5.1	4.9	4.8
LUDDENHAM	1.7	2.8	3.6	4.5	5.3	6.0	6.7	7.4	8.1	8.9	9.7	10.5
MACQUARIE FIELDS	10.9	12.8	14.4	15.9	17.3	18.6	19.8	21.0	22.2	23.3	24.6	25.8
MALDON	7.2	9.6	11.6	13.5	15.3	16.9	18.5	20.0	21.5	23.0	24.7	26.3
MAMRE	10.4	11.9	13.2	14.4	15.6	16.6	17.6	18.6	19.6	20.6	21.6	22.7
MARAYONG	4.2	5.6	6.7	7.7	8.7	9.6	10.4	11.3	12.1	13.0	13.9	14.8
MARSDEN PARK	8.8	9.5	10.1	10.6	11.1	11.6	12.0	12.4	12.9	13.3	13.7	14.2
MEADOW FLAT	0.5	0.6	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.1	1.2
MINTO	17.4	19.3	20.9	22.4	23.8	25.0	26.3	27.5	28.6	29.8	31.0	32.2
MITTAGONG	7.0	8.2	9.2	10.1	11.0	11.8	12.6	13.4	14.1	14.9	15.7	16.5
MOOREBANK	3.0	3.7	4.3	4.9	5.4	5.9	6.4	6.8	7.3	7.8	8.3	8.8
MOSS VALE	6.7	7.9	8.9	9.8	10.6	11.4	12.1	12.9	13.6	14.3	15.0	15.8
MOUNT OUSLEY	4.1	5.0	5.8	6.5	7.2	7.9	8.5	9.1	9.6	10.2	10.8	11.3
MUNGERIE PARK	30.2	33.6	36.6	39.3	41.9	44.3	46.6	48.9	51.1	53.4	55.8	58.2
NARELLAN	19.5	21.4	23.1	24.7	26.3	27.8	29.4	30.9	32.4	34.1	35.8	37.7
NEPEAN 11KV	14.2	16.9	19.3	21.6	23.9	26.1	28.2	30.4	32.6	34.9	37.4	40.0
NEWTON	4.9	5.5	6.0	6.5	7.0	7.5	7.9	8.3	8.7	9.1	9.6	10.0
NORTH EASTERN CREEK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NORTH LEPPINGTON	1.0	1.7	2.2	2.7	3.3	3.7	4.2	4.6	5.1	5.5	6.0	6.5
NORTH PARRAMATTA	2.9	3.7	4.3	5.0	5.6	6.1	6.6	7.2	7.7	8.2	8.8	9.3
NORTH RICHMOND	4.0	4.9	5.8	6.5	7.2	7.9	8.5	9.1	9.6	10.2	10.8	11.5
NORTH ROCKS	3.6	4.4	5.0	5.6	6.2	6.7	7.2	7.7	8.2	8.7	9.3	9.8
NORTH WARRAGAMBA	3.9	5.3	6.6	7.8	8.9	9.9	10.9	11.9	12.8	13.8	14.8	15.8
NORTH WOLLONGONG	1.3	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.1	3.3	3.5
NORTHMEAD	3.5	4.4	5.1	5.8	6.5	7.1	7.6	8.2	8.8	9.4	10.0	10.6
NOWRA	6.3	7.8	9.0	10.1	11.2	12.2	13.1	14.0	14.9	15.8	16.7	17.6
OAKDALE	0.8	1.2	1.6	1.9	2.3	2.6	2.9	3.1	3.4	3.7	4.0	4.3
ORAN PARK	12.4	16.6	20.3	23.9	27.4	30.7	34.0	37.3	40.7	44.3	48.1	52.1
PARKLEA	30.7	33.6	36.0	38.3	40.5	42.5	44.4	46.3	48.2	50.2	52.2	54.3
PENRITH 11KV	1.7	2.1	2.5	2.9	3.2	3.5	3.8	4.1	4.4	4.7	5.0	5.3
PLUMPTON	10.6	12.3	13.8	15.2	16.5	17.7	18.8	20.0	21.1	22.2	23.4	24.6

Table A.21 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Residential (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	1.4	1.7	2.0	2.2	2.5	2.7	2.9	3.1	3.2	3.4	3.6	3.8
PORT KEMBLA	3.7	4.9	5.9	6.9	7.7	8.5	9.3	10.0	10.7	11.5	12.2	13.0
PORTLAND	1.6	1.9	2.1	2.3	2.5	2.6	2.8	2.9	3.1	3.2	3.4	3.5
PRESTONS	12.8	14.4	15.8	17.0	18.3	19.4	20.6	21.7	22.8	23.9	25.2	26.4
PROSPECT	5.0	5.5	5.9	6.3	6.6	7.0	7.3	7.6	8.0	8.3	8.6	9.0
QUAKERS HILL	13.5	15.9	17.8	19.7	21.4	23.0	24.6	26.1	27.6	29.1	30.7	32.3
QUARRIES	2.5	2.9	3.2	3.5	3.8	4.1	4.3	4.6	4.8	5.1	5.4	5.6
RINGWOOD	3.2	3.7	4.1	4.5	4.9	5.2	5.6	5.9	6.2	6.5	6.8	7.2
RIVERSTONE	8.4	8.9	9.3	9.7	10.0	10.3	10.6	10.9	11.2	11.5	11.8	12.1
ROBERTSON	2.0	2.7	3.2	3.7	4.2	4.6	5.0	5.4	5.8	6.2	6.7	7.1
ROOTY HILL	11.8	13.8	15.5	17.1	18.6	19.9	21.3	22.5	23.8	25.1	26.5	27.9
ROSEHILL	0.3	0.5	0.7	0.8	1.0	1.1	1.3	1.4	1.5	1.6	1.8	1.9
RUSSELL VALE	5.3	6.5	7.6	8.5	9.4	10.2	11.0	11.8	12.5	13.2	14.0	14.8
RYDALMERE	5.0	6.3	7.3	8.3	9.3	10.1	11.0	11.8	12.7	13.5	14.4	15.3
SCHOFIELDS	15.8	18.7	21.1	23.3	25.4	27.3	29.2	31.1	32.9	34.7	36.7	38.6
SEVEN HILLS	3.9	4.1	4.4	4.6	4.8	5.0	5.2	5.3	5.5	5.7	5.9	6.1
SHELLHARBOUR	10.7	12.7	14.3	15.9	17.4	18.7	20.0	21.3	22.5	23.8	25.1	26.4
SHERWOOD	4.4	5.1	5.6	6.1	6.6	7.0	7.4	7.8	8.2	8.7	9.1	9.5
SMITHFIELD	9.5	10.7	11.7	12.6	13.5	14.2	15.0	15.7	16.4	17.1	17.8	18.5
SOUTH GRANVILLE	2.9	3.8	4.6	5.3	6.0	6.7	7.3	7.9	8.5	9.1	9.7	10.3
SOUTH LEPPINGTON	8.8	10.7	12.3	13.7	15.2	16.5	17.7	19.0	20.2	21.4	22.7	24.0
SOUTH MARSDEN PARK	2.0	3.1	3.9	4.8	5.5	6.3	7.0	7.7	8.4	9.1	9.9	10.7
SOUTH NOWRA	1.9	2.2	2.3	2.5	2.7	2.8	3.0	3.1	3.2	3.4	3.5	3.6
SOUTH WINDSOR	7.6	9.3	10.7	12.0	13.2	14.3	15.4	16.5	17.5	18.5	19.6	20.6
SOUTH WOLLONGONG	1.1	1.3	1.4	1.5	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
SPRINGWOOD	8.4	9.2	9.8	10.4	10.9	11.4	11.9	12.4	12.8	13.2	13.7	14.2
ST MARYS	6.8	8.4	9.7	10.9	12.1	13.2	14.2	15.2	16.2	17.2	18.3	19.3
SUSSEX INLET	2.6	3.4	4.0	4.5	5.0	5.5	6.0	6.4	6.9	7.3	7.8	8.3
TAHMOOR	7.0	9.5	11.6	13.6	15.4	17.1	18.8	20.4	22.0	23.6	25.3	26.9
THE OAKS	2.5	3.3	3.9	4.5	5.1	5.6	6.1	6.7	7.2	7.8	8.4	9.0
TOMERONG	5.1	5.5	5.9	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4	8.7
ULLADULLA	10.4	11.8	13.0	14.1	15.2	16.1	17.0	17.9	18.8	19.7	20.6	21.5
UNANDERRA	1.9	2.2	2.5	2.8	3.0	3.3	3.5	3.7	3.9	4.1	4.3	4.5
WARILLA	7.5	9.1	10.4	11.7	12.9	13.9	15.0	16.0	17.0	18.0	19.0	20.1
WENTWORTH FALLS	2.8	3.2	3.5	3.7	4.0	4.2	4.4	4.6	4.9	5.1	5.3	5.5
WERRINGTON	6.0	7.1	8.1	9.0	9.9	10.6	11.4	12.1	12.8	13.6	14.3	15.1
WEST CASTLE HILL	6.2	7.5	8.5	9.5	10.5	11.4	12.2	13.1	13.9	14.7	15.6	16.5
WEST LIVERPOOL 11KV	6.3	7.5	8.5	9.4	10.3	11.1	11.9	12.7	13.4	14.2	15.0	15.9
WEST PARRAMATTA	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WEST PENNANT HILLS	7.2	8.3	9.3	10.1	11.0	11.7	12.5	13.2	14.0	14.7	15.5	16.3
WEST WETHERILL PARK 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST WOLLONGONG	3.1	3.9	4.6	5.3	5.9	6.4	6.9	7.4	7.9	8.4	8.9	9.5
WESTMEAD	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6
WETHERILL PARK	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2
WHALAN	6.2	6.9	7.5	8.1	8.6	9.1	9.6	10.0	10.5	10.9	11.4	11.9
WILTON	1.8	2.1	2.4	2.6	2.8	3.0	3.2	3.4	3.5	3.7	3.9	4.1
WINDSOR	4.0	4.7	5.4	6.0	6.5	7.0	7.5	7.9	8.3	8.8	9.3	9.7
WISEMANS	0.8	1.1	1.2	1.4	1.5	1.7	1.8	1.9	2.1	2.2	2.3	2.5
WOMBARRA	2.6	3.1	3.5	3.9	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4
WOODPARK	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8
YATTE YATTAH	1.5	2.0	2.4	2.8	3.1	3.5	3.8	4.1	4.4	4.7	5.0	5.3
YENNORA	3.5	4.4	5.2	5.9	6.5	7.1	7.7	8.2	8.8	9.3	9.8	10.4
TOTAL	**911.3**	**1076.9**	**1217.0**	**1346.4**	**1471.6**	**1583.8**	**1694.5**	**1802.0**	**1908.0**	**2015.9**	**2129.8**	**2242.9**

Table A.22 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Commercial (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
ALBION PARK	1.2	1.5	1.7	1.9	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.6
AMBARVALE	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
ANZAC VILLAGE	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7
APPIN	0.2	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6
ARNDELL PARK	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
BAULKHAM HILLS 11KV	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9
BELLA VISTA	1.3	1.6	1.8	2.0	2.2	2.3	2.5	2.6	2.8	2.9	3.0	3.1
BERRY	0.4	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.0	1.1	1.1
BLACKHEATH	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
BLACKMANS FLAT	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BLAXLAND	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8
BOLONG	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
BOMADERRY	1.0	1.3	1.5	1.7	1.9	2.0	2.2	2.3	2.4	2.5	2.6	2.8
BONNYRIGG	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3
BOSSLEY PARK	0.9	1.1	1.2	1.4	1.5	1.6	1.7	1.8	1.9	1.9	2.0	2.1
BOW BOWING	0.6	0.9	1.1	1.3	1.4	1.6	1.7	1.8	1.9	2.1	2.2	2.3
BOWRAL	0.7	0.9	1.2	1.4	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3
BRINGELLY	0.3	0.5	0.7	0.9	1.1	1.2	1.3	1.5	1.6	1.7	1.8	1.9
BULLI	0.3	0.5	0.6	0.7	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
CAMBRIDGE PARK	1.1	1.3	1.6	1.8	1.9	2.1	2.3	2.4	2.5	2.7	2.8	2.9
CAMPBELLTOWN	1.0	1.3	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.5	2.6	2.8
CANLEY VALE	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9
CARRAMAR	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6
CASTLE HILL	0.3	0.6	0.9	1.1	1.3	1.5	1.7	1.8	2.0	2.1	2.2	2.4
CASULA	0.5	0.7	0.9	1.0	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.9
CATTAI	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3
CAWDOR	0.3	0.5	0.6	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
CHERITON AVENUE	0.7	1.1	1.4	1.7	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4
CHIPPING NORTON	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3
CLAREMONT MEADOWS	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
CORRIMAL	0.5	0.8	1.0	1.2	1.3	1.5	1.6	1.7	1.8	1.9	2.0	2.1
CRANEBROOK	0.6	0.8	0.9	1.0	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.8
CULBURRA	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
DAPTO	1.0	1.2	1.3	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.1
DARKES FOREST	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
DOONSIDE	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.4
DUNDAS	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.0
EAST RICHMOND	0.6	0.8	1.0	1.2	1.4	1.5	1.7	1.8	1.9	2.0	2.1	2.2
EASTERN CREEK	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
EDMONDSON PARK	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6
EMU PLAINS	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9
FAIRFIELD	0.7	0.7	0.8	0.8	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0
FIGTREE	0.8	1.1	1.4	1.6	1.8	1.9	2.1	2.3	2.4	2.5	2.6	2.8
GERRINGONG	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
GLENMORE PARK	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.6	1.7
GLENORIE	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7
GLOSSODIA	0.3	0.3	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9
GRANVILLE	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	0.9	1.0
GREYSTANES	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
HELENSBURGH	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6

Table A.22 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Commercial (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	1.1	1.5	1.8	2.1	2.3	2.5	2.7	2.9	3.1	3.3	3.5	3.7
HOLROYD	1.1	1.3	1.4	1.5	1.6	1.6	1.7	1.8	1.9	1.9	2.0	2.1
HOMEPRIDE	0.9	1.5	2.0	2.5	2.9	3.2	3.6	3.9	4.2	4.5	4.7	5.0
HORSLEY PARK	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7
HUNTINGWOOD	0.4	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.1
HUSKISSON	1.3	1.9	2.3	2.6	2.9	3.1	3.4	3.6	3.8	4.0	4.2	4.4
ILFORD HALL	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
JASPER RD	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9
JORDAN SPRINGS	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8
KANDOS	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7
KANGAROO VALLEY	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
KATOOMBA	0.5	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.1
KELLYVILLE	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
KEMBLA GRANGE	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
KEMPS CREEK	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.2
KENNY STREET	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
KENTHURST	0.9	1.3	1.6	1.9	2.1	2.3	2.5	2.7	2.8	3.0	3.2	3.3
KENTLYN	1.2	1.7	2.0	2.3	2.5	2.8	3.0	3.1	3.3	3.5	3.7	3.8
KIAMA	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2
KINGSWOOD	1.2	2.0	2.7	3.4	4.0	4.5	5.0	5.4	5.8	6.2	6.6	7.0
KURRAJONG	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
LEABONS LANE	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
LENNOX	0.5	1.2	1.6	2.0	2.4	2.7	3.0	3.3	3.6	3.9	4.1	4.4
LITHGOW	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.4	1.5	1.5
LIVERPOOL 11KV	1.5	2.1	2.7	3.1	3.6	4.0	4.3	4.7	5.0	5.3	5.6	6.0
LUDDENHAM	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8
MACQUARIE FIELDS	1.2	1.8	2.4	2.8	3.1	3.4	3.7	4.0	4.2	4.4	4.7	4.9
MALDON	0.8	1.3	1.7	1.9	2.1	2.3	2.5	2.7	2.8	3.0	3.1	3.3
MAMRE	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.6
MARAYONG	0.5	0.9	1.2	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.5	2.6
MARSDEN PARK	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
MEADOW FLAT	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
MINTO	1.4	1.7	1.9	2.2	2.3	2.5	2.7	2.8	2.9	3.1	3.2	3.3
MITTAGONG	0.8	1.0	1.2	1.3	1.4	1.5	1.6	1.7	1.7	1.8	1.9	1.9
MOOREBANK	0.6	0.8	1.1	1.3	1.4	1.6	1.8	1.9	2.0	2.2	2.3	2.4
MOSS VALE	0.9	1.3	1.6	1.8	2.1	2.3	2.5	2.7	2.9	3.1	3.2	3.4
MOUNT OUSLEY	0.5	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.6
MUNGERIE PARK	2.7	3.3	3.8	4.2	4.6	5.0	5.3	5.7	6.0	6.2	6.5	6.8
NARELLAN	2.3	2.9	3.4	3.8	4.3	4.7	5.1	5.4	5.8	6.1	6.5	6.9
NEPEAN 11KV	1.8	2.1	2.3	2.5	2.7	2.8	3.0	3.1	3.2	3.3	3.4	3.5
NEWTON	1.3	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6
NORTH EASTERN CREEK	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
NORTH LEPPINGTON	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
NORTH PARRAMATTA	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3
NORTH RICHMOND	0.4	0.6	0.7	0.8	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.6
NORTH ROCKS	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
NORTH WARRAGAMBA	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8
NORTH WOLLONGONG	0.7	1.1	1.5	1.8	2.1	2.3	2.4	2.6	2.8	2.9	3.1	3.2
NORTHMEAD	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8
NOWRA	0.6	0.8	1.1	1.3	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.5
OAKDALE	0.0	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4
ORAN PARK	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8
PARKLEA	2.0	2.5	2.9	3.3	3.6	3.9	4.1	4.3	4.5	4.6	4.8	5.0
PENRITH 11KV	1.0	1.8	2.5	3.2	3.8	4.3	4.6	5.0	5.3	5.6	5.9	6.2
PLUMPTON	0.7	0.8	1.0	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.7

Table A.22 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Commercial (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.4	0.6	0.8	1.0	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.9
PORT KEMBLA	0.4	0.6	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7
PORTLAND	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
PRESTONS	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.3	1.4	1.5
PROSPECT	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
QUAKERS HILL	0.9	1.0	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.6	1.7	1.8
QUARRIES	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9
RINGWOOD	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9
RIVERSTONE	2.0	2.4	2.8	3.2	3.5	3.8	4.0	4.3	4.5	4.7	5.0	5.2
ROBERTSON	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6
ROOTY HILL	1.4	1.6	1.8	1.9	2.0	2.1	2.3	2.3	2.4	2.5	2.6	2.7
ROSEHILL	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0	1.0
RUSSELL VALE	0.5	0.7	0.9	1.0	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9
RYDALMERE	1.1	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.0	2.1
SCHOFIELDS	0.8	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.6	1.7	1.8	1.8
SEVEN HILLS	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.9	1.9	2.0	2.1
SHELLHARBOUR	1.0	1.5	1.9	2.3	2.6	2.9	3.2	3.4	3.7	3.9	4.1	4.3
SHERWOOD	0.7	1.0	1.2	1.5	1.7	1.8	2.0	2.2	2.3	2.4	2.6	2.7
SMITHFIELD	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.4	1.5	1.6
SOUTH GRANVILLE	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
SOUTH LEPPINGTON	0.6	0.8	1.0	1.1	1.3	1.4	1.5	1.6	1.8	1.9	2.0	2.1
SOUTH MARSDEN PARK	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.3	1.4	1.5	1.6	1.8
SOUTH NOWRA	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.3	1.4
SOUTH WINDSOR	1.8	2.0	2.3	2.4	2.6	2.8	2.9	3.1	3.2	3.3	3.4	3.5
SOUTH WOLLONGONG	0.4	0.7	0.9	1.1	1.3	1.4	1.6	1.7	1.8	1.9	2.0	2.2
SPRINGWOOD	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
ST MARYS	0.6	1.0	1.3	1.6	1.8	2.1	2.3	2.5	2.7	2.9	3.0	3.2
SUSSEX INLET	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6
TAHMOOR	0.5	0.8	1.0	1.2	1.4	1.6	1.7	1.9	2.0	2.2	2.3	2.4
THE OAKS	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
TOMERONG	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
ULLADULLA	1.1	1.5	1.8	2.1	2.3	2.5	2.7	2.9	3.0	3.2	3.4	3.5
UNANDERRA	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.3
WARILLA	0.5	0.8	1.0	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.8	1.9
WENTWORTH FALLS	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6
WERRINGTON	1.1	1.9	2.5	3.1	3.6	4.1	4.5	4.7	4.9	5.2	5.4	5.6
WEST CASTLE HILL	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.2
WEST LIVERPOOL 11KV	1.0	1.6	2.0	2.4	2.8	3.2	3.5	3.8	4.1	4.3	4.6	4.9
WEST PARRAMATTA	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.3	1.4
WEST PENNANT HILLS	0.3	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.0
WEST WETHERILL PARK 11KV	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8
WEST WOLLONGONG	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
WESTMEAD	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4
WETHERILL PARK	1.0	1.1	1.2	1.2	1.3	1.4	1.4	1.4	1.5	1.5	1.6	1.6
WHALAN	0.5	0.6	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.4	1.4	1.5
WILTON	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
WINDSOR	0.7	1.0	1.2	1.4	1.6	1.7	1.8	1.9	1.9	2.0	2.1	2.1
WISEMANS	0.2	0.4	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.0	1.1	1.1
WOMBARRA	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
WOODPARK	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.3	1.3
YATTE YATTAH	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
YENNORA	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1
TOTAL	**95.3**	**123.5**	**146.7**	**167.1**	**185.8**	**201.6**	**216.4**	**229.9**	**242.5**	**254.6**	**267.0**	**279.0**

Table A.23 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Industrial (other) (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ALBION PARK	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6
AMBARVALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ANZAC VILLAGE	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
APPIN	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ARNDELL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAULKHAM HILLS 11KV	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
BELLA VISTA	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.0
BERRY	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
BLACKHEATH	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BLACKMANS FLAT	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BLAXLAND	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BOLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOMADERRY	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5
BONNYRIGG	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
BOSSLEY PARK	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4
BOW BOWING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOWRAL	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4
BRINGELLY	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
BULLI	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAMBRIDGE PARK	0.1	0.3	0.4	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.1	1.1
CAMPBELLTOWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
CANLEY VALE	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4
CARRAMAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CASTLE HILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CASULA	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
CATTAI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAWDOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CHERITON AVENUE	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.9	0.9	1.0
CHIPPING NORTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLAREMONT MEADOWS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
CORRIMAL	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
CRANEBROOK	0.0	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5
CULBURRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DAPTO	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DOONSIDE	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4
DUNDAS	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6
EAST RICHMOND	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EDMONDSON PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EMU PLAINS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FAIRFIELD	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
FIGTREE	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6
GERRINGONG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GLENMORE PARK	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4
GLENORIE	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GLOSSODIA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GRANVILLE	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
GREYSTANES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
HELENSBURGH	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2

Table A.23 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Industrial (other) (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6
HOLROYD	0.1	0.2	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3
HOMEPRIDE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HORSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUNTINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUSKISSON	0.1	0.3	0.4	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JASPER RD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JORDAN SPRINGS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KANDOS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KANGAROO VALLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KATOOMBA	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
KELLYVILLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KEMBLA GRANGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KEMPS CREEK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENTHURST	0.0	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6
KENTLYN	0.1	0.3	0.4	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3
KIAMA	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4
KINGSWOOD	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.0
KURRAJONG	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
LEABONS LANE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LENNOX	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LITHGOW	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4
LIVERPOOL 11KV	0.1	0.4	0.6	0.8	1.0	1.2	1.3	1.5	1.6	1.7	1.9	2.0
LUDDENHAM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MACQUARIE FIELDS	0.1	0.3	0.4	0.5	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3
MALDON	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6
MAMRE	0.0	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5
MARAYONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MINTO	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5
MITTAGONG	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4
MOOREBANK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MOSS VALE	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4
MOUNT OUSLEY	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
MUNGERIE PARK	0.2	0.4	0.6	0.7	0.9	1.0	1.1	1.2	1.4	1.5	1.6	1.7
NARELLAN	0.1	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.1
NEPEAN 11KV	0.1	0.3	0.5	0.6	0.8	0.9	1.0	1.2	1.3	1.4	1.5	1.6
NEWTON	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH PARRAMATTA	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3
NORTH RICHMOND	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
NORTH ROCKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH WARRAGAMBA	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3
NORTH WOLLONGONG	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5
NORTHMEAD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OAKDALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORAN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PARKLEA	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7
PENRITH 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PLUMPTON	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7

Table A.23 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Industrial (other) (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
PORT KEMBLA	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3
PORTLAND	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PRESTONS	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4
PROSPECT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QUAKERS HILL	0.0	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6
QUARRIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RINGWOOD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
RIVERSTONE	0.2	0.3	0.5	0.6	0.8	0.9	1.0	1.1	1.2	1.2	1.3	1.4
ROBERTSON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROOTY HILL	0.1	0.2	0.3	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.9
ROSEHILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RUSSELL VALE	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
RYDALMERE	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6
SCHOFIELDS	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7
SEVEN HILLS	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5
SHELLHARBOUR	0.0	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6
SHERWOOD	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6
SMITHFIELD	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
SOUTH GRANVILLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH LEPPINGTON	0.0	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5
SOUTH MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH WINDSOR	0.1	0.2	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8
SOUTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SPRINGWOOD	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
ST MARYS	0.0	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7
SUSSEX INLET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAHMOOR	0.0	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6
THE OAKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOMERONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ULLADULLA	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6
UNANDERRA	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
WARILLA	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4
WENTWORTH FALLS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WERRINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST CASTLE HILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST LIVERPOOL 11KV	0.0	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST PENNANT HILLS	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
WEST WETHERILL PARK 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WHALAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WILTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WINDSOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WISEMANS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WOMBARRA	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
WOODPARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YATTE YATTAH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YENNORA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	**4.0**	**10.1**	**15.2**	**19.8**	**24.0**	**27.7**	**31.1**	**34.3**	**37.3**	**40.1**	**43.1**	**45.9**

Table A.24 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Total ZSS (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	10.0	11.4	12.5	13.6	14.7	15.6	16.6	17.5	18.4	19.3	20.3	21.3
ALBION PARK	15.2	17.1	18.7	20.2	21.6	22.7	23.9	24.9	26.0	27.0	28.1	29.2
AMBARVALE	8.4	9.9	11.2	12.4	13.5	14.5	15.5	16.5	17.4	18.4	19.4	20.4
ANZAC VILLAGE	7.4	8.6	9.6	10.5	11.3	12.1	12.9	13.7	14.4	15.2	16.0	16.8
APPIN	2.5	3.2	3.8	4.4	4.9	5.4	5.8	6.2	6.6	7.0	7.4	7.9
ARNDELL PARK	3.9	4.7	5.4	6.0	6.6	7.1	7.7	8.2	8.7	9.2	9.8	10.3
BAULKHAM HILLS 11KV	7.8	9.2	10.4	11.5	12.5	13.5	14.4	15.4	16.3	17.2	18.2	19.1
BELLA VISTA	13.7	16.0	18.0	19.9	21.7	23.3	24.8	26.3	27.8	29.3	30.9	32.5
BERRY	4.9	5.8	6.6	7.3	8.0	8.5	9.1	9.7	10.2	10.7	11.3	11.8
BLACKHEATH	2.7	3.0	3.3	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2
BLACKMANS FLAT	1.2	1.8	2.3	2.8	3.3	3.7	4.1	4.5	4.8	5.2	5.6	6.0
BLAXLAND	8.0	8.6	9.1	9.6	10.1	10.5	10.8	11.2	11.6	11.9	12.3	12.6
BOLONG	0.9	1.1	1.3	1.5	1.6	1.8	1.9	2.1	2.2	2.4	2.5	2.7
BOMADERRY	9.6	11.0	12.2	13.3	14.4	15.3	16.2	17.0	17.8	18.7	19.5	20.4
BONNYRIGG	9.3	10.9	12.3	13.6	14.8	15.9	16.9	18.0	19.0	20.0	21.0	22.1
BOSSLEY PARK	8.4	9.3	10.1	10.7	11.4	11.9	12.5	13.0	13.5	14.0	14.5	15.0
BOW BOWING	4.3	4.9	5.5	6.0	6.5	6.9	7.4	7.8	8.1	8.5	8.9	9.3
BOWRAL	6.5	8.4	10.0	11.4	12.8	14.0	15.1	16.2	17.3	18.3	19.4	20.5
BRINGELLY	2.5	3.5	4.4	5.3	6.1	6.9	7.6	8.4	9.1	9.8	10.6	11.5
BULLI	5.3	7.3	8.9	10.4	11.9	13.2	14.5	15.7	16.8	18.0	19.3	20.5
BYLONG	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4
CABRAMATTA	3.0	3.9	4.6	5.3	6.0	6.6	7.2	7.7	8.3	8.9	9.4	10.0
CAMBRIDGE PARK	11.4	13.2	14.6	15.9	17.2	18.3	19.4	20.5	21.5	22.6	23.6	24.7
CAMPBELLTOWN	6.9	8.8	10.3	11.8	13.3	14.6	15.8	17.1	18.3	19.6	20.9	22.3
CANLEY VALE	7.6	9.1	10.3	11.5	12.6	13.5	14.5	15.4	16.2	17.1	18.1	19.0
CARRAMAR	2.6	3.4	4.1	4.8	5.4	5.9	6.4	6.9	7.4	7.9	8.4	8.9
CASTLE HILL	3.4	6.2	8.5	10.6	12.7	14.5	16.3	17.9	19.6	21.3	23.0	24.7
CASULA	9.6	11.6	13.3	14.9	16.4	17.8	19.1	20.3	21.6	22.8	24.1	25.4
CATTAI	3.7	4.8	5.7	6.6	7.4	8.1	8.8	9.5	10.2	10.8	11.5	12.2
CAWDOR	6.0	7.8	9.3	10.8	12.3	13.6	14.9	16.2	17.5	18.9	20.3	21.8
CHERITON AVENUE	6.5	8.5	10.1	11.7	13.2	14.5	15.8	17.1	18.3	19.6	20.9	22.3
CHIPPING NORTON	5.0	5.7	6.3	6.8	7.4	7.9	8.4	8.8	9.3	9.8	10.3	10.8
CLAREMONT MEADOWS	6.9	9.3	11.3	13.1	14.9	16.6	18.2	19.7	21.3	22.9	24.6	26.3
CORRIMAL	6.6	8.0	9.2	10.3	11.3	12.2	13.1	13.9	14.7	15.5	16.3	17.1
CRANEBROOK	6.2	7.8	9.0	10.2	11.3	12.3	13.2	14.2	15.1	16.0	16.9	17.9
CULBURRA	4.3	5.4	6.3	7.1	7.8	8.5	9.2	9.8	10.5	11.1	11.8	12.4
DAPTO	16.4	18.5	20.4	22.0	23.6	25.0	26.4	27.7	28.9	30.2	31.5	32.8
DARKES FOREST	0.1	0.2	0.3	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.2
DOONSIDE	16.4	19.5	22.2	24.6	27.0	29.1	31.2	33.2	35.2	37.2	39.3	41.4
DUNDAS	6.8	8.9	10.6	12.2	13.7	15.1	16.4	17.7	19.0	20.2	21.6	22.9
EAST RICHMOND	4.4	5.0	5.6	6.1	6.5	6.9	7.3	7.7	8.1	8.4	8.8	9.1
EASTERN CREEK	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8
EDMONDSON PARK	3.7	4.7	5.5	6.2	6.9	7.5	8.2	8.7	9.3	9.9	10.5	11.1
EMU PLAINS	7.0	7.7	8.3	8.9	9.4	9.9	10.4	10.9	11.3	11.7	12.2	12.7
FAIRFIELD	4.0	4.4	4.8	5.2	5.5	5.8	6.1	6.4	6.7	6.9	7.2	7.5
FIGTREE	9.4	11.0	12.3	13.5	14.7	15.7	16.6	17.6	18.4	19.3	20.2	21.1
GERRINGONG	3.2	3.5	3.7	4.0	4.2	4.4	4.5	4.7	4.9	5.1	5.2	5.4
GLENMORE PARK	13.7	15.3	16.6	17.8	19.0	20.0	21.1	22.0	23.0	24.0	25.0	26.0
GLENORIE	2.1	2.6	3.0	3.3	3.7	4.0	4.2	4.5	4.8	5.1	5.4	5.7
GLOSSODIA	4.5	5.7	6.8	7.7	8.6	9.4	10.1	10.9	11.6	12.3	13.0	13.8
GRANVILLE	3.4	4.3	5.2	5.9	6.7	7.3	8.0	8.6	9.2	9.9	10.5	11.2
GREYSTANES	4.3	4.9	5.4	5.9	6.4	6.8	7.2	7.6	8.0	8.4	8.9	9.3
HARTLEY VALE	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
HAZELBROOK	4.5	4.9	5.2	5.5	5.8	6.1	6.3	6.6	6.8	7.0	7.3	7.5
HELENSBURGH	2.7	3.2	3.6	4.0	4.3	4.6	4.9	5.2	5.5	5.7	6.0	6.3

Table A.24 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Total ZSS (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	16.1	18.2	20.1	21.8	23.4	24.8	26.3	27.6	29.0	30.4	31.8	33.2
HOLROYD	9.3	11.8	14.0	16.0	17.9	19.6	21.3	22.9	24.5	26.1	27.9	29.6
HOMEPRIDE	2.4	3.5	4.4	5.2	6.0	6.7	7.3	8.0	8.6	9.2	9.8	10.5
HORSLEY PARK	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.8	2.9	3.0	3.1	3.1
HUNTINGWOOD	1.5	1.8	2.0	2.2	2.4	2.6	2.8	2.9	3.1	3.3	3.4	3.6
HUSKISSON	9.8	11.6	13.1	14.4	15.6	16.7	17.8	18.8	19.7	20.7	21.7	22.7
ILFORD HALL	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.2
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	1.4	1.8	2.1	2.4	2.6	2.9	3.1	3.3	3.5	3.7	3.9	4.2
JASPER RD	7.7	8.7	9.6	10.5	11.3	12.0	12.7	13.4	14.1	14.8	15.5	16.3
JORDAN SPRINGS	7.1	8.0	8.9	9.6	10.3	11.0	11.6	12.2	12.8	13.4	14.1	14.7
KANDOS	1.7	3.0	4.1	5.1	6.1	6.9	7.7	8.5	9.3	10.0	10.8	11.6
KANGAROO VALLEY	1.0	1.2	1.4	1.6	1.8	1.9	2.1	2.2	2.4	2.5	2.6	2.8
KATOOMBA	5.0	5.5	6.0	6.5	6.9	7.2	7.6	7.9	8.3	8.6	8.9	9.3
KELLYVILLE	5.9	6.9	7.8	8.6	9.4	10.1	10.8	11.5	12.2	12.9	13.6	14.3
KEMBLA GRANGE	2.7	3.3	3.8	4.2	4.6	5.0	5.3	5.7	6.0	6.4	6.7	7.1
KEMPS CREEK	2.4	2.9	3.3	3.7	4.1	4.4	4.7	5.0	5.3	5.6	6.0	6.3
KENNY STREET	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
KENTHURST	7.5	9.8	11.7	13.5	15.2	16.7	18.2	19.6	21.0	22.5	24.0	25.5
KENTLYN	13.5	16.1	18.2	20.1	21.8	23.4	25.0	26.4	27.8	29.3	30.8	32.2
KIAMA	7.4	8.6	9.7	10.6	11.5	12.3	13.1	13.8	14.6	15.3	16.1	16.8
KINGSWOOD	9.4	12.2	14.7	16.9	19.0	20.8	22.6	24.3	26.0	27.7	29.4	31.1
KURRAJONG	5.1	6.5	7.6	8.7	9.7	10.5	11.4	12.2	13.0	13.8	14.7	15.5
LEABONS LANE	4.5	5.8	6.9	7.9	8.9	9.7	10.6	11.4	12.3	13.1	14.0	14.9
LENNOX	1.2	2.0	2.6	3.0	3.5	3.9	4.3	4.7	5.0	5.3	5.7	6.0
LITHGOW	6.7	8.0	9.1	10.1	11.0	11.8	12.7	13.4	14.2	14.9	15.7	16.4
LIVERPOOL 11KV	7.6	8.4	9.0	9.6	10.1	10.6	11.0	11.4	11.8	12.1	12.5	12.8
LUDDENHAM	1.9	3.0	4.0	4.9	5.7	6.5	7.3	8.0	8.8	9.6	10.4	11.2
MACQUARIE FIELDS	12.2	14.9	17.2	19.2	21.1	22.8	24.4	25.9	27.4	28.9	30.4	31.9
MALDON	8.1	11.0	13.5	15.7	17.7	19.6	21.4	23.1	24.8	26.5	28.3	30.1
MAMRE	11.4	13.1	14.5	15.8	17.1	18.2	19.3	20.4	21.4	22.5	23.6	24.7
MARAYONG	4.8	6.5	7.9	9.2	10.3	11.4	12.4	13.4	14.4	15.4	16.4	17.4
MARSDEN PARK	8.9	9.6	10.2	10.8	11.3	11.7	12.2	12.6	13.0	13.5	13.9	14.4
MEADOW FLAT	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.3	1.3	1.4
MINTO	18.9	21.1	23.0	24.8	26.4	27.9	29.3	30.7	32.0	33.3	34.7	36.1
MITTAGONG	7.9	9.3	10.5	11.6	12.6	13.5	14.5	15.3	16.2	17.0	17.9	18.8
MOOREBANK	3.5	4.5	5.3	6.1	6.8	7.5	8.1	8.7	9.4	10.0	10.6	11.2
MOSS VALE	7.6	9.2	10.6	11.8	13.0	14.0	15.0	15.9	16.8	17.7	18.7	19.6
MOUNT OUSLEY	4.6	5.8	6.7	7.6	8.5	9.2	9.9	10.6	11.2	11.9	12.6	13.2
MUNGERIE PARK	33.0	37.3	40.9	44.3	47.5	50.3	53.1	55.8	58.4	61.1	63.9	66.6
NARELLAN	21.9	24.6	26.9	29.1	31.2	33.2	35.2	37.1	39.1	41.2	43.4	45.7
NEPEAN 11KV	16.2	19.4	22.2	24.8	27.5	29.8	32.2	34.6	37.1	39.6	42.4	45.2
NEWTON	6.2	7.0	7.6	8.2	8.7	9.3	9.7	10.2	10.7	11.2	11.6	12.1
NORTH EASTERN CREEK	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
NORTH LEPPINGTON	1.1	1.8	2.4	2.9	3.5	4.0	4.4	4.9	5.4	5.8	6.3	6.8
NORTH PARRAMATTA	3.6	4.5	5.2	5.9	6.6	7.2	7.8	8.4	9.0	9.6	10.2	10.9
NORTH RICHMOND	4.4	5.6	6.6	7.4	8.3	9.1	9.8	10.5	11.2	11.8	12.5	13.2
NORTH ROCKS	3.8	4.6	5.2	5.8	6.4	6.9	7.5	8.0	8.5	9.0	9.5	10.1
NORTH WARRAGAMBA	4.2	5.8	7.2	8.4	9.6	10.7	11.7	12.8	13.8	14.8	15.9	16.9
NORTH WOLLONGONG	1.9	2.8	3.5	4.1	4.6	5.0	5.4	5.8	6.1	6.5	6.9	7.2
NORTHMEAD	3.8	4.8	5.6	6.3	7.0	7.7	8.3	8.9	9.6	10.2	10.8	11.5
NOWRA	6.9	8.6	10.1	11.5	12.7	13.9	15.0	16.0	17.0	18.1	19.1	20.2
OAKDALE	0.8	1.3	1.8	2.1	2.5	2.8	3.2	3.5	3.8	4.1	4.4	4.7
ORAN PARK	12.7	17.0	20.8	24.4	28.0	31.3	34.6	38.0	41.4	45.0	49.0	53.0
PARKLEA	32.8	36.3	39.2	41.9	44.5	46.8	49.0	51.2	53.3	55.4	57.7	59.9
PENRITH 11KV	2.7	4.0	5.1	6.1	7.0	7.8	8.5	9.1	9.7	10.3	11.0	11.6
PLUMPTON	11.3	13.3	15.0	16.5	18.0	19.4	20.7	21.9	23.2	24.4	25.8	27.1

Table A.24 Total in-house use by PV systems by zone substation – Solar only systems (no battery storage) – Endeavour Energy – Total ZSS (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	1.8	2.3	2.8	3.3	3.7	4.0	4.4	4.7	5.0	5.3	5.6	5.9
PORT KEMBLA	4.2	5.6	6.8	7.9	8.9	9.8	10.7	11.6	12.4	13.2	14.1	14.9
PORTLAND	1.8	2.1	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.7	3.9	4.1
PRESTONS	13.4	15.2	16.7	18.1	19.5	20.7	22.0	23.2	24.4	25.6	26.9	28.2
PROSPECT	5.4	6.0	6.4	6.8	7.2	7.6	7.9	8.3	8.6	9.0	9.3	9.7
QUAKERS HILL	14.5	17.0	19.1	21.1	23.0	24.7	26.4	28.0	29.6	31.3	33.0	34.7
QUARRIES	2.8	3.3	3.7	4.0	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5
RINGWOOD	3.5	4.1	4.6	5.1	5.6	5.9	6.3	6.7	7.0	7.4	7.8	8.1
RIVERSTONE	10.6	11.7	12.6	13.5	14.3	15.0	15.6	16.3	16.9	17.5	18.1	18.7
ROBERTSON	2.2	2.9	3.5	4.0	4.5	5.0	5.4	5.9	6.3	6.7	7.2	7.7
ROOTY HILL	13.3	15.6	17.5	19.3	21.1	22.6	24.1	25.6	27.0	28.4	29.9	31.4
ROSEHILL	0.7	1.0	1.2	1.5	1.7	1.9	2.0	2.2	2.4	2.6	2.7	2.9
RUSSELL VALE	5.7	7.2	8.5	9.6	10.7	11.7	12.6	13.5	14.4	15.2	16.1	16.9
RYDALMERE	6.2	7.7	8.9	10.1	11.2	12.2	13.1	14.1	15.0	16.0	17.0	18.0
SCHOFIELDS	16.7	19.8	22.4	24.8	27.1	29.1	31.2	33.1	35.0	37.0	39.1	41.1
SEVEN HILLS	5.1	5.6	6.0	6.3	6.7	7.0	7.3	7.5	7.8	8.1	8.4	8.6
SHELLHARBOUR	11.7	14.3	16.5	18.4	20.3	22.0	23.6	25.2	26.7	28.2	29.8	31.4
SHERWOOD	5.2	6.2	7.1	7.8	8.6	9.2	9.9	10.5	11.1	11.6	12.2	12.8
SMITHFIELD	10.1	11.5	12.6	13.6	14.6	15.5	16.3	17.1	17.9	18.7	19.5	20.3
SOUTH GRANVILLE	3.1	4.1	4.9	5.6	6.4	7.0	7.6	8.2	8.8	9.5	10.1	10.7
SOUTH LEPPINGTON	9.4	11.6	13.4	15.1	16.7	18.2	19.6	21.0	22.4	23.7	25.2	26.6
SOUTH MARSDEN PARK	2.3	3.5	4.6	5.5	6.5	7.3	8.2	9.0	9.8	10.7	11.6	12.5
SOUTH NOWRA	2.4	2.8	3.1	3.3	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0
SOUTH WINDSOR	9.5	11.5	13.2	14.8	16.3	17.6	18.9	20.1	21.3	22.5	23.7	24.9
SOUTH WOLLONGONG	1.6	2.0	2.3	2.7	2.9	3.2	3.4	3.7	3.9	4.1	4.3	4.5
SPRINGWOOD	8.9	9.7	10.4	11.0	11.6	12.2	12.7	13.1	13.6	14.1	14.6	15.0
ST MARYS	7.4	9.5	11.2	12.8	14.3	15.6	16.9	18.2	19.4	20.7	21.9	23.2
SUSSEX INLET	2.8	3.6	4.2	4.8	5.4	5.9	6.4	6.9	7.4	7.9	8.4	8.9
TAHMOOR	7.6	10.4	12.8	15.0	17.2	19.1	20.9	22.7	24.5	26.2	28.1	29.9
THE OAKS	2.6	3.4	4.0	4.6	5.2	5.7	6.3	6.8	7.4	7.9	8.5	9.1
TOMERONG	5.2	5.7	6.1	6.5	6.9	7.2	7.5	7.8	8.1	8.4	8.7	9.0
ULLADULLA	11.5	13.4	15.0	16.4	17.8	19.0	20.2	21.3	22.3	23.4	24.5	25.6
UNANDERRA	2.6	3.1	3.5	3.8	4.1	4.4	4.7	5.0	5.2	5.5	5.7	6.0
WARILLA	8.0	9.9	11.6	13.0	14.3	15.5	16.7	17.8	18.9	20.0	21.2	22.3
WENTWORTH FALLS	3.0	3.5	3.8	4.1	4.5	4.7	5.0	5.2	5.5	5.7	5.9	6.2
WERRINGTON	7.1	9.0	10.6	12.1	13.5	14.7	15.9	16.8	17.8	18.7	19.7	20.7
WEST CASTLE HILL	6.7	8.0	9.2	10.3	11.3	12.2	13.2	14.1	14.9	15.8	16.8	17.7
WEST LIVERPOOL 11KV	7.3	9.1	10.7	12.1	13.4	14.6	15.8	16.9	18.0	19.0	20.2	21.3
WEST PARRAMATTA	0.5	0.6	0.8	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
WEST PENNANT HILLS	7.5	8.8	9.8	10.8	11.7	12.6	13.4	14.2	15.0	15.8	16.7	17.5
WEST WETHERILL PARK 11KV	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8
WEST WOLLONGONG	3.2	4.1	4.8	5.4	6.1	6.6	7.1	7.7	8.2	8.7	9.2	9.7
WESTMEAD	0.3	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0
WETHERILL PARK	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.7	2.8
WHALAN	6.7	7.6	8.3	8.9	9.6	10.2	10.7	11.2	11.8	12.3	12.9	13.4
WILTON	1.9	2.3	2.5	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4
WINDSOR	4.6	5.7	6.6	7.4	8.1	8.7	9.2	9.8	10.3	10.8	11.3	11.8
WISEMANS	1.0	1.4	1.7	2.0	2.3	2.5	2.7	2.9	3.1	3.2	3.4	3.6
WOMBARRA	2.8	3.4	3.8	4.3	4.7	5.0	5.4	5.7	6.0	6.3	6.7	7.0
WOODPARK	1.1	1.2	1.3	1.4	1.6	1.6	1.7	1.8	1.9	2.0	2.1	2.2
YATTE YATTAH	1.6	2.1	2.5	2.8	3.2	3.5	3.9	4.2	4.5	4.8	5.1	5.4
YENNORA	4.2	5.1	6.0	6.7	7.4	8.1	8.7	9.3	9.8	10.4	11.0	11.6
TOTAL	**1010.5**	**1210.5**	**1378.9**	**1533.3**	**1681.5**	**1813.1**	**1942.0**	**2066.1**	**2187.8**	**2310.6**	**2439.9**	**2567.8**

Table A.25 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – Residential (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.2	1.4	1.8	2.2	2.8
ALBION PARK	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.3	1.6	2.0	2.4	2.9
AMBARVALE	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.8	2.3	2.8
ANZAC VILLAGE	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.8	2.2
APPIN	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.1
ARNDELL PARK	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.2	1.5
BAULKHAM HILLS 11KV	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.3	1.7	2.1	2.6
BELLA VISTA	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.5	3.2	3.9
BERRY	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.2	1.4
BLACKHEATH	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
BLACKMANS FLAT	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0
BLAXLAND	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.8	0.9	1.1
BOLONG	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4
BOMADERRY	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.4	1.7	2.1
BONNYRIGG	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.8	2.3	2.8
BOSSLEY PARK	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.3
BOW BOWING	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8
BOWRAL	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.8	2.2	2.7
BRINGELLY	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.4	1.7
BULLI	0.1	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.6	2.1	2.6	3.2
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
CABRAMATTA	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6
CAMBRIDGE PARK	0.2	0.3	0.4	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.1	2.5
CAMPBELLTOWN	0.1	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.6	2.1	2.6	3.2
CANLEY VALE	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.3	1.6	2.0	2.5
CARRAMAR	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3
CASTLE HILL	0.1	0.2	0.3	0.5	0.7	0.9	1.3	1.7	2.2	2.8	3.5	4.3
CASULA	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.4	1.8	2.2	2.7	3.4
CATTAI	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7
CAWDOR	0.1	0.2	0.3	0.4	0.6	0.7	1.0	1.3	1.7	2.2	2.8	3.5
CHERITON AVENUE	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.5	1.8	2.3	2.9
CHIPPING NORTON	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.3
CLAREMONT MEADOWS	0.1	0.2	0.4	0.5	0.7	1.0	1.3	1.7	2.2	2.8	3.6	4.4
CORRIMAL	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.3	1.7	2.0
CRANEBROOK	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.5	1.9	2.3
CULBURRA	0.1	0.1	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.8
DAPTO	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.4	2.9	3.6
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
DOONSIDE	0.4	0.5	0.6	0.8	1.1	1.4	1.8	2.4	3.0	3.7	4.6	5.7
DUNDAS	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.8	2.3	2.8	3.5
EAST RICHMOND	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EDMONDSON PARK	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.3	1.6
EMU PLAINS	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.3
FAIRFIELD	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7
FIGTREE	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8	2.2
GERRINGONG	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5
GLENMORE PARK	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8	2.3	2.7
GLENORIE	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
GLOSSODIA	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0
GRANVILLE	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.4	1.7
GREYSTANES	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.2
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7
HELENSBURGH	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7

Table A.25 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – Residential (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.9	2.3	2.9	3.5
HOLROYD	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.7	2.2	2.7	3.4	4.3
HOMEPRIDE	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9
HORSLEY PARK	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
HUNTINGWOOD	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
HUSKISSON	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.4	1.7	2.1
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6
JASPER RD	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.3	1.6	2.0
JORDAN SPRINGS	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.4	1.7
KANDOS	0.0	0.1	0.2	0.2	0.3	0.5	0.6	0.8	1.1	1.3	1.7	2.1
KANGAROO VALLEY	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
KATOOMBA	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9
KELLYVILLE	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0
KEMBLA GRANGE	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0
KEMPS CREEK	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENTHURST	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.8	2.3	2.8	3.5
KENTLYN	0.3	0.4	0.5	0.6	0.7	0.9	1.2	1.5	1.9	2.4	2.9	3.5
KIAMA	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.9	1.1	1.3	1.7	2.0
KINGSWOOD	0.2	0.3	0.4	0.5	0.6	0.9	1.1	1.4	1.8	2.3	2.8	3.5
KURRAJONG	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.8	2.3
LEABONS LANE	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.9	2.4
LENNOX	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
LITHGOW	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.3	1.6	2.0
LIVERPOOL 11KV	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	-0.1	-0.1
LUDDENHAM	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6	2.0
MACQUARIE FIELDS	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.3	2.9	3.5
MALDON	0.2	0.3	0.4	0.5	0.8	1.0	1.4	1.8	2.2	2.8	3.6	4.4
MAMRE	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.4	3.0
MARAYONG	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.6	2.0	2.4
MARSDEN PARK	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.8	0.9	1.1	1.4
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
MINTO	0.4	0.5	0.6	0.7	0.9	1.1	1.3	1.6	2.0	2.5	3.0	3.6
MITTAGONG	0.2	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.9	2.3
MOOREBANK	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.4
MOSS VALE	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.8	2.1
MOUNT OUSLEY	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7
MUNGERIE PARK	0.7	0.8	1.0	1.2	1.5	1.9	2.4	3.0	3.7	4.6	5.7	6.9
NARELLAN	0.4	0.5	0.6	0.8	0.9	1.2	1.5	1.9	2.4	3.0	3.8	4.8
NEPEAN 11KV	0.3	0.4	0.6	0.8	1.0	1.4	1.9	2.4	3.1	4.0	5.2	6.5
NEWTON	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.3
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH LEPPINGTON	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3
NORTH PARRAMATTA	0.1	0.1	0.1	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.2	1.5
NORTH RICHMOND	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7
NORTH ROCKS	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
NORTH WARRAGAMBA	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.1	1.4	1.8	2.2	2.8
NORTH WOLLONGONG	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
NORTHMEAD	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7
NOWRA	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7	2.1	2.6
OAKDALE	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8
ORAN PARK	0.3	0.5	0.7	1.0	1.4	1.9	2.6	3.5	4.6	6.0	7.7	9.8
PARKLEA	0.7	0.8	1.0	1.1	1.4	1.7	2.2	2.7	3.3	4.0	4.9	6.0
PENRITH 11KV	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8
PLUMPTON	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.8	2.2	2.8	3.4

Table A.25 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – Residential (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
PORT KEMBLA	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7	2.1
PORTLAND	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.5
PRESTONS	0.3	0.4	0.4	0.5	0.7	0.9	1.1	1.4	1.8	2.2	2.8	3.4
PROSPECT	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.6	0.7	0.8	1.0
QUAKERS HILL	0.3	0.4	0.5	0.7	0.9	1.1	1.5	1.9	2.4	2.9	3.7	4.5
QUARRIES	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8
RINGWOOD	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	0.9
RIVERSTONE	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.8	1.0
ROBERTSON	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2
ROOTY HILL	0.3	0.3	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.5	3.1	3.8
ROSEHILL	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4
RUSSELL VALE	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.4	1.8	2.2
RYDALMERE	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.6	2.0	2.4
SCHOFIELDS	0.4	0.5	0.6	0.8	1.1	1.4	1.8	2.3	2.9	3.6	4.4	5.4
SEVEN HILLS	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6
SHELLHARBOUR	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.6	2.0	2.4	3.0	3.7
SHERWOOD	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.2
SMITHFIELD	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8	2.2
SOUTH GRANVILLE	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7
SOUTH LEPPINGTON	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.5	1.9	2.3	2.9	3.6
SOUTH MARSDEN PARK	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6	2.0
SOUTH NOWRA	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4
SOUTH WINDSOR	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6	2.0	2.5	3.0
SOUTH WOLLONGONG	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
SPRINGWOOD	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.2	1.4
ST MARYS	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.4	2.9
SUSSEX INLET	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.3
TAHMOOR	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.8	2.3	3.0	3.7	4.6
THE OAKS	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.6
TOMERONG	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9
ULLADULLA	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.2	1.4	1.8	2.2	2.7
UNANDERRA	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
WARILLA	0.2	0.2	0.3	0.4	0.6	0.7	1.0	1.2	1.5	1.9	2.4	2.9
WENTWORTH FALLS	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.7
WERRINGTON	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.8	2.2
WEST CASTLE HILL	0.1	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.5
WEST LIVERPOOL 11KV	0.1	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.9	2.3
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST PENNANT HILLS	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.2	1.4	1.8	2.2
WEST WETHERILL PARK 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST WOLLONGONG	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
WHALAN	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	0.9	1.2	1.4
WILTON	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5
WINDSOR	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.3
WISEMANS	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4
WOMBARRA	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9
WOODPARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
YATTE YATTAH	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9
YENNORA	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.3	1.6
TOTAL	**20.5**	**27.4**	**36.1**	**46.8**	**61.6**	**80.0**	**103.6**	**132.1**	**166.3**	**207.6**	**258.8**	**317.6**

Table A.26 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – Commercial (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ALBION PARK	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5
AMBARVALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
ANZAC VILLAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
APPIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
ARNDELL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
BAULKHAM HILLS 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
BELLA VISTA	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8
BERRY	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3
BLACKHEATH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLACKMANS FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLAXLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
BOLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
BOMADERRY	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
BONNYRIGG	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4
BOSSLEY PARK	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
BOW BOWING	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.6	0.7
BOWRAL	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7
BRINGELLY	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.6	0.7
BULLI	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
CAMBRIDGE PARK	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8
CAMPBELLTOWN	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8
CANLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
CARRAMAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
CASTLE HILL	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9
CASULA	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
CATTAI	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4
CAWDOR	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.6
CHERITON AVENUE	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2
CHIPPING NORTON	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
CLAREMONT MEADOWS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
CORRIMAL	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6
CRANEBROOK	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
CULBURRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
DAPTO	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
DOONSIDE	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
DUNDAS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
EAST RICHMOND	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.6	0.7
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
EDMONDSON PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
EMU PLAINS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
FAIRFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
FIGTREE	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8
GERRINGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
GLENMORE PARK	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
GLENORIE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
GLOSSODIA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
GRANVILLE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
GREYSTANES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HELENSBURGH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1

Table A.26 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – Commercial (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1
HOLROYD	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
HOMEPRIDE	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.1	1.4	1.8
HORSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
HUNTINGWOOD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
HUSKISSON	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JASPER RD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
JORDAN SPRINGS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
KANDOS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
KANGAROO VALLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KATOOMBA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
KELLYVILLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
KEMBLA GRANGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
KEMPS CREEK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
KENTHURST	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0
KENTLYN	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1
KIAMA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
KINGSWOOD	0.0	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.6	2.0	2.5
KURRAJONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
LEABONS LANE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
LENNOX	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6
LITHGOW	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4
LIVERPOOL 11KV	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	1.0	1.2	1.6	1.9
LUDDENHAM	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
MACQUARIE FIELDS	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.5
MALDON	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9
MAMRE	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
MARAYONG	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8
MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
MINTO	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.7	0.8
MITTAGONG	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
MOOREBANK	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8
MOSS VALE	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.0
MOUNT OUSLEY	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
MUNGERIE PARK	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8
NARELLAN	0.1	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.7	2.1
NEPEAN 11KV	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.7
NEWTON	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
NORTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
NORTH PARRAMATTA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
NORTH RICHMOND	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
NORTH ROCKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH WARRAGAMBA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
NORTH WOLLONGONG	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9
NORTHMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
NOWRA	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8
OAKDALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
ORAN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2
PARKLEA	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2
PENRITH 11KV	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.1	1.3	1.7	2.0
PLUMPTON	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5

Table A.26 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – Commercial (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.7
PORT KEMBLA	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
PORTLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
PRESTONS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
PROSPECT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
QUAKERS HILL	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
QUARRIES	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
RINGWOOD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
RIVERSTONE	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.4
ROBERTSON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
ROOTY HILL	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
ROSEHILL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
RUSSELL VALE	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
RYDALMERE	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
SCHOFIELDS	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
SEVEN HILLS	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
SHELLHARBOUR	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4
SHERWOOD	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9
SMITHFIELD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
SOUTH GRANVILLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
SOUTH LEPPINGTON	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
SOUTH MARSDEN PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7
SOUTH NOWRA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4
SOUTH WINDSOR	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.8
SOUTH WOLLONGONG	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7
SPRINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
ST MARYS	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1
SUSSEX INLET	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
TAHMOOR	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8
THE OAKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOMERONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
ULLADULLA	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0
UNANDERRA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
WARILLA	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
WENTWORTH FALLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
WERRINGTON	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6
WEST CASTLE HILL	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
WEST LIVERPOOL 11KV	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.1	1.3	1.6
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
WEST PENNANT HILLS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
WEST WETHERILL PARK 11KV	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WEST WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
WETHERILL PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
WHALAN	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
WILTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
WINDSOR	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
WISEMANS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
WOMBARRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
WOODPARK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
YATTE YATTAH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YENNORA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
TOTAL	**3.0**	**4.4**	**6.1**	**8.6**	**12.5**	**17.3**	**23.5**	**30.9**	**39.8**	**50.6**	**63.3**	**77.4**

Table A.27 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – Industrial (other) (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ALBION PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
AMBARVALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ANZAC VILLAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
APPIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ARNDELL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BAULKHAM HILLS 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
BELLA VISTA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4
BERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
BLACKHEATH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLACKMANS FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BLAXLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOMADERRY	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
BONNYRIGG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
BOSSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
BOW BOWING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BOWRAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
BRINGELLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BULLI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAMBRIDGE PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
CAMPBELLTOWN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CANLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
CARRAMAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CASTLE HILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CASULA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
CATTAI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CAWDOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CHERITON AVENUE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4
CHIPPING NORTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLAREMONT MEADOWS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CORRIMAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
CRANEBROOK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
CULBURRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DAPTO	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DOONSIDE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
DUNDAS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
EAST RICHMOND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EDMONDSON PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EMU PLAINS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FAIRFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
FIGTREE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
GERRINGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLENMORE PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
GLENORIE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GLOSSODIA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GRANVILLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
GREYSTANES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HELENSBURGH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1

Table A.27 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – Industrial (other) (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
HOLROYD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
HOMEPRIDE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HORSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUNTINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUSKISSON	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JASPER RD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JORDAN SPRINGS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KANDOS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KANGAROO VALLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KATOOMBA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
KELLYVILLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KEMBLA GRANGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KEMPS CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENTHURST	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
KENTLYN	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
KIAMA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
KINGSWOOD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4
KURRAJONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
LEABONS LANE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LENNOX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LITHGOW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
LIVERPOOL 11KV	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8
LUDDENHAM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MACQUARIE FIELDS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
MALDON	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
MAMRE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
MARAYONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MINTO	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
MITTAGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
MOOREBANK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MOSS VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2
MOUNT OUSLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
MUNGERIE PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
NARELLAN	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
NEPEAN 11KV	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7
NEWTON	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH PARRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
NORTH RICHMOND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
NORTH ROCKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH WARRAGAMBA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
NORTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
NORTHMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OAKDALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORAN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PARKLEA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3
PENRITH 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PLUMPTON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3

Table A.27 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – Industrial (other) (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
PORT KEMBLA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
PORTLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PRESTONS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
PROSPECT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QUAKERS HILL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
QUARRIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RIVERSTONE	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5
ROBERTSON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROOTY HILL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
ROSEHILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RUSSELL VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
RYDALMERE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
SCHOFIELDS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3
SEVEN HILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
SHELLHARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2
SHERWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2
SMITHFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
SOUTH GRANVILLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
SOUTH MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH WINDSOR	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
SOUTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SPRINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
ST MARYS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
SUSSEX INLET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAHMOOR	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
THE OAKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOMERONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ULLADULLA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
UNANDERRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
WARILLA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
WENTWORTH FALLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WERRINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST CASTLE HILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST LIVERPOOL 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST PENNANT HILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
WEST WETHERILL PARK 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WEST WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WHALAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WILTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WINDSOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WISEMANS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WOMBARRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
WOODPARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YATTE YATTAH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
YENNORA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	**0.1**	**0.4**	**0.8**	**1.4**	**2.2**	**3.4**	**4.8**	**6.6**	**8.7**	**11.2**	**14.2**	**17.6**

Table A.28 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – ZSS (GWh)												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ABBOTSBURY	0.2	0.3	0.4	0.4	0.6	0.7	0.9	1.2	1.5	1.8	2.3	2.8
ALBION PARK	0.4	0.4	0.5	0.7	0.9	1.1	1.3	1.7	2.0	2.5	3.0	3.6
AMBARVALE	0.2	0.3	0.3	0.4	0.6	0.7	1.0	1.2	1.5	1.9	2.4	2.9
ANZAC VILLAGE	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.6	1.9	2.4
APPIN	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.3
ARNDELL PARK	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6
BAULKHAM HILLS 11KV	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.3	2.8
BELLA VISTA	0.3	0.4	0.5	0.7	0.9	1.2	1.6	2.1	2.6	3.3	4.1	5.1
BERRY	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8
BLACKHEATH	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6
BLACKMANS FLAT	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1
BLAXLAND	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.2
BOLONG	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
BOMADERRY	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.5	3.0
BONNYRIGG	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.4	1.7	2.1	2.6	3.2
BOSSLEY PARK	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.9	1.1	1.3	1.6	1.9
BOW BOWING	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
BOWRAL	0.2	0.2	0.3	0.5	0.6	0.9	1.1	1.5	1.9	2.3	2.9	3.6
BRINGELLY	0.1	0.1	0.2	0.2	0.4	0.5	0.7	0.9	1.2	1.6	2.0	2.5
BULLI	0.1	0.2	0.3	0.4	0.6	0.9	1.1	1.5	1.9	2.4	3.0	3.7
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
CABRAMATTA	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7
CAMBRIDGE PARK	0.3	0.3	0.4	0.6	0.7	1.0	1.2	1.6	2.0	2.5	3.1	3.8
CAMPBELLTOWN	0.2	0.2	0.3	0.5	0.7	0.9	1.2	1.6	2.0	2.6	3.3	4.0
CANLEY VALE	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.3	2.8
CARRAMAR	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
CASTLE HILL	0.1	0.2	0.3	0.5	0.8	1.1	1.5	2.0	2.6	3.3	4.2	5.2
CASULA	0.2	0.3	0.4	0.6	0.7	1.0	1.3	1.7	2.1	2.6	3.3	4.0
CATTAI	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7	2.1
CAWDOR	0.1	0.2	0.3	0.4	0.6	0.9	1.2	1.5	2.0	2.6	3.3	4.1
CHERITON AVENUE	0.2	0.2	0.3	0.5	0.7	1.0	1.3	1.7	2.2	2.8	3.6	4.5
CHIPPING NORTON	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6
CLAREMONT MEADOWS	0.2	0.3	0.4	0.5	0.8	1.0	1.4	1.8	2.3	2.9	3.7	4.6
CORRIMAL	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.3	2.8
CRANEBROOK	0.1	0.2	0.3	0.4	0.5	0.7	1.0	1.2	1.6	2.0	2.5	3.0
CULBURRA	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.9
DAPTO	0.4	0.5	0.6	0.7	0.9	1.2	1.5	1.9	2.3	2.9	3.5	4.3
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
DOONSIDE	0.4	0.5	0.7	0.9	1.2	1.5	2.0	2.6	3.2	4.0	5.0	6.2
DUNDAS	0.2	0.2	0.4	0.5	0.7	0.9	1.2	1.6	2.0	2.5	3.2	3.9
EAST RICHMOND	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
EDMONDSON PARK	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.8
EMU PLAINS	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.5
FAIRFIELD	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	0.9
FIGTREE	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.4	1.7	2.2	2.7	3.2
GERRINGONG	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6
GLENMORE PARK	0.3	0.4	0.5	0.6	0.7	0.9	1.2	1.4	1.8	2.2	2.7	3.3
GLENORIE	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0
GLOSSODIA	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.2
GRANVILLE	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6	2.0
GREYSTANES	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.3
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.7	0.8
HELENSBURGH	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9

Table A.28 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – ZSS (GWh) – continued												
ZS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
HINCHINBROOK	0.4	0.5	0.6	0.7	1.0	1.2	1.6	2.0	2.5	3.2	4.0	4.8
HOLROYD	0.2	0.3	0.5	0.6	0.9	1.2	1.6	2.1	2.6	3.3	4.2	5.2
HOMEPRIDE	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.7	2.2	2.7
HORSLEY PARK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
HUNTINGWOOD	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
HUSKISSON	0.2	0.3	0.4	0.5	0.7	1.0	1.2	1.6	2.0	2.5	3.1	3.8
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
JASPER RD	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.8	2.2
JORDAN SPRINGS	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.3	1.6	2.0
KANDOS	0.0	0.1	0.2	0.2	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.3
KANGAROO VALLEY	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
KATOOMBA	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.7	0.8	1.0	1.2
KELLYVILLE	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.3	1.7	2.1
KEMBLA GRANGE	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.0
KEMPS CREEK	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
KENTHURST	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.9	2.4	3.1	3.9	4.8
KENTLYN	0.3	0.4	0.6	0.7	1.0	1.3	1.7	2.1	2.7	3.4	4.2	5.1
KIAMA	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.4
KINGSWOOD	0.2	0.4	0.5	0.7	1.0	1.4	1.9	2.5	3.2	4.1	5.2	6.4
KURRAJONG	0.1	0.2	0.2	0.3	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.5
LEABONS LANE	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6	2.0	2.5
LENNOX	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8
LITHGOW	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.3	1.7	2.0	2.5
LIVERPOOL 11KV	0.2	0.2	0.3	0.3	0.5	0.6	0.8	1.1	1.4	1.7	2.1	2.6
LUDDENHAM	0.0	0.1	0.2	0.2	0.3	0.5	0.6	0.9	1.1	1.4	1.8	2.3
MACQUARIE FIELDS	0.3	0.4	0.6	0.7	1.0	1.3	1.8	2.3	2.9	3.6	4.5	5.4
MALDON	0.2	0.3	0.5	0.7	0.9	1.3	1.7	2.2	2.8	3.6	4.5	5.6
MAMRE	0.3	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.3	2.8	3.4
MARAYONG	0.1	0.2	0.3	0.4	0.6	0.7	1.0	1.3	1.7	2.1	2.6	3.3
MARSDEN PARK	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.7	0.8	1.0	1.2	1.4
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
MINTO	0.4	0.5	0.7	0.8	1.0	1.3	1.6	2.1	2.5	3.1	3.8	4.6
MITTAGONG	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.9	2.4	2.9
MOOREBANK	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.8	2.2
MOSS VALE	0.2	0.3	0.3	0.5	0.6	0.8	1.1	1.4	1.8	2.2	2.7	3.3
MOUNT OUSLEY	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.8	2.2
MUNGERIE PARK	0.8	1.0	1.2	1.5	1.9	2.4	3.1	4.0	5.0	6.2	7.7	9.4
NARELLAN	0.5	0.6	0.8	1.0	1.3	1.7	2.2	2.8	3.7	4.7	5.9	7.4
NEPEAN 11KV	0.4	0.5	0.7	0.9	1.3	1.7	2.3	3.0	3.8	4.9	6.3	7.9
NEWTON	0.2	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
NORTH LEPPINGTON	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4
NORTH PARRAMATTA	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.6	1.9
NORTH RICHMOND	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.3
NORTH ROCKS	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
NORTH WARRAGAMBA	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.6	2.0	2.5	3.1
NORTH WOLLONGONG	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.7
NORTHMEAD	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.6	1.9
NOWRA	0.2	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.8	2.3	2.8	3.4
OAKDALE	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0
ORAN PARK	0.3	0.5	0.7	1.0	1.4	2.0	2.7	3.6	4.7	6.1	7.9	10.0
PARKLEA	0.8	0.9	1.1	1.3	1.7	2.1	2.6	3.3	4.0	5.0	6.1	7.4
PENRITH 11KV	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.5	1.9	2.3	2.9
PLUMPTON	0.3	0.3	0.5	0.6	0.8	1.0	1.3	1.7	2.2	2.7	3.4	4.1

Table A.28 Total in-house use by PV systems by zone substation – Solar and battery storage systems – Endeavour Energy – ZSS (GWh) – continued												
ZS	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
PORT CENTRAL	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.3
PORT KEMBLA	0.1	0.2	0.2	0.3	0.5	0.6	0.9	1.1	1.4	1.8	2.2	2.7
PORTLAND	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
PRESTONS	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.6	2.0	2.6	3.2	4.0
PROSPECT	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	0.9	1.1
QUAKERS HILL	0.3	0.4	0.6	0.7	1.0	1.3	1.7	2.1	2.7	3.4	4.2	5.1
QUARRIES	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0
RINGWOOD	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2
RIVERSTONE	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.6	1.9	2.4	2.9
ROBERTSON	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.3
ROOTY HILL	0.3	0.4	0.5	0.7	0.9	1.2	1.5	2.0	2.5	3.1	3.9	4.8
ROSEHILL	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
RUSSELL VALE	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.4	2.9
RYDALMERE	0.1	0.2	0.3	0.4	0.5	0.7	1.0	1.2	1.6	2.0	2.5	3.1
SCHOFIELDS	0.4	0.5	0.7	0.9	1.2	1.5	2.0	2.5	3.2	4.0	5.0	6.1
SEVEN HILLS	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.2
SHELLHARBOUR	0.3	0.4	0.5	0.7	1.0	1.3	1.7	2.2	2.8	3.5	4.4	5.4
SHERWOOD	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.3
SMITHFIELD	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.2	1.5	1.8	2.2	2.7
SOUTH GRANVILLE	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.5	1.8
SOUTH LEPPINGTON	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.8	2.3	2.9	3.6	4.4
SOUTH MARSDEN PARK	0.1	0.1	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.7	2.2	2.7
SOUTH NOWRA	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8
SOUTH WINDSOR	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.7	2.1	2.7	3.3	4.1
SOUTH WOLLONGONG	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0
SPRINGWOOD	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.9	1.1	1.3	1.6
ST MARYS	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.7	2.2	2.8	3.5	4.3
SUSSEX INLET	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
TAHMOOR	0.2	0.3	0.4	0.6	0.9	1.3	1.7	2.2	2.9	3.6	4.6	5.6
THE OAKS	0.1	0.1	0.1	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.3	1.6
TOMERONG	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.7	0.8	1.0
ULLADULLA	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.7	2.1	2.6	3.2	3.9
UNANDERRA	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9
WARILLA	0.2	0.3	0.4	0.5	0.7	0.9	1.2	1.5	1.9	2.4	2.9	3.6
WENTWORTH FALLS	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.6	0.7	0.8
WERRINGTON	0.2	0.3	0.4	0.5	0.7	1.0	1.3	1.6	2.0	2.5	3.1	3.7
WEST CASTLE HILL	0.2	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.4	1.8	2.3	2.8
WEST LIVERPOOL 11KV	0.2	0.3	0.4	0.5	0.7	0.9	1.3	1.7	2.1	2.7	3.4	4.2
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
WEST PENNANT HILLS	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.1	1.4	1.7	2.1	2.6
WEST WETHERILL PARK 11KV	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WEST WOLLONGONG	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
WETHERILL PARK	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4
WHALAN	0.2	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8
WILTON	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
WINDSOR	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8
WISEMANS	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
WOMBARRA	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.0
WOODPARK	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4
YATTE YATTAH	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9
YENNORA	0.1	0.1	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.8
TOTAL	**23.6**	**32.3**	**43.0**	**56.7**	**76.3**	**100.6**	**131.9**	**169.6**	**214.8**	**269.4**	**336.3**	**412.6**

Appendix B

Plug-in electric vehicle forecasts by zone substation

Table B.1 Total plug-in electric vehicle stock by zone substation – 2020 to 2032 (GWh)													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
ABBOTSBURY	8	12	17	27	45	70	100	137	177	223	272	323	378
ALBION PARK	9	14	21	34	55	85	120	161	207	256	310	372	442
AMBARVALE	5	7	11	18	31	49	71	98	129	165	203	244	289
ANZAC VILLAGE	4	7	10	16	27	44	64	89	118	151	187	226	267
APPIN	1	2	4	6	10	16	23	32	41	52	63	74	87
ARNDELL PARK	4	6	8	14	23	37	53	73	97	123	152	183	217
BAULKHAM HILLS 11KV	19	28	40	65	108	170	243	332	432	543	663	793	931
BELLA VISTA	17	26	37	61	101	159	228	312	407	512	627	752	885
BERRIMA JUNCTION	0	0	0	0	0	0	0	0	0	0	0	0	0
BERRY	9	13	23	37	61	94	133	179	229	284	343	407	474
BLACKHEATH	5	7	13	22	36	56	80	109	142	178	218	260	305
BLACKMANS FLAT	1	2	6	10	16	26	37	50	65	81	98	116	136
BLAXLAND	13	19	28	46	76	120	172	236	309	390	478	573	676
BOMADERRY	9	13	22	35	56	86	120	161	204	252	302	355	410
BONNYRIGG	10	15	22	35	58	90	128	175	227	285	347	413	482
BOSSLEY PARK	7	10	13	21	34	52	72	97	123	152	182	212	243
BOW BOWING	3	4	6	9	16	25	37	51	67	85	105	126	149
BOWRAL	26	38	63	101	165	255	358	481	616	762	920	1088	1266
BRINGELLY	3	5	7	12	21	33	48	67	87	111	136	164	193
BULLI	8	12	18	30	50	79	114	157	205	259	318	382	451
BYLONG	0	0	0	1	1	3	4	6	8	10	12	15	18
CABRAMATTA	4	6	9	14	23	36	52	70	91	114	139	164	191
CAMBRIDGE PARK	5	9	12	21	36	57	84	118	156	200	249	301	358
CAMPBELLTOWN	5	8	12	19	33	53	76	106	139	177	217	261	308
CANLEY VALE	13	19	27	43	70	108	151	204	262	326	393	464	537
CARRAMAR	8	12	16	26	42	63	88	118	149	184	220	256	294
CASTLE HILL	32	48	67	109	179	279	396	538	695	870	1058	1260	1476
CASULA	6	10	14	23	40	64	92	129	170	218	270	325	384
CATTAI	5	7	11	18	30	46	65	87	112	139	168	199	231
CAWDOR	4	6	12	19	31	48	68	91	116	143	172	203	235
CHERITON AVENUE	18	26	38	61	101	158	225	307	397	497	605	722	847
CHIPPING NORTON	2	4	6	9	16	25	36	50	66	85	105	126	149
CLAREMONT MEADOWS	5	8	13	21	36	57	83	116	153	195	241	291	344
CORRIMAL	8	12	17	28	47	74	107	147	192	243	300	361	428
CRANEBROOK	4	6	10	16	27	43	62	86	113	145	178	215	254
CULBURRA	5	7	12	20	32	48	67	89	113	139	166	195	225
DAPTO	10	16	24	39	64	100	141	192	248	310	376	452	536
DARKES FOREST	0	1	1	2	3	5	8	10	14	18	22	26	30
DOONSIDE	19	28	41	68	114	182	263	365	481	612	756	911	1079
DUNDAS	26	39	57	93	152	237	335	455	587	733	890	1058	1235
EAST RICHMOND	4	6	9	15	24	37	52	71	91	114	137	162	188
EASTERN CREEK	0	0	1	1	2	3	5	6	8	11	13	16	19
EDMONDSON PARK	2	4	6	9	16	26	37	52	69	89	110	133	158
EMU PLAINS	10	15	21	34	56	88	126	173	225	283	345	414	489
FAIRFIELD	5	7	10	16	26	39	55	73	94	116	139	163	188
FIGTREE	9	14	20	33	56	88	127	175	229	289	356	429	509

Table B.1 Total plug-in electric vehicle stock by zone substation – 2020 to 2032 (GWh) – continued													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
GERRINGONG	5	7	14	23	38	59	83	112	145	180	219	260	305
GLENMORE PARK	4	6	9	16	27	43	63	88	117	150	186	225	267
GLENORIE	4	6	9	15	24	38	54	73	95	119	145	173	202
GLOSSODIA	4	6	9	15	24	36	50	67	85	104	125	145	166
GREYSTANES	9	14	20	32	53	83	118	161	209	263	321	382	448
HARTLEY VALE	0	0	1	2	3	4	6	8	10	13	16	19	22
HAZELBROOK	10	15	21	35	57	90	130	178	232	294	360	432	508
HELENSBURGH	3	4	6	9	16	25	36	50	65	82	101	122	145
HINCHINBROOK	8	12	17	29	49	78	114	158	209	268	332	400	474
HOLROYD	28	43	61	99	164	257	367	503	655	825	1008	1206	1416
HOMEPRIDE	5	8	12	20	34	55	80	111	147	188	232	280	331
HORSLEY PARK	1	1	2	3	5	8	12	16	21	26	32	38	44
HUNTINGWOOD	2	3	4	7	12	18	25	34	44	55	66	78	91
HUSKISSON	8	12	22	34	55	84	117	156	198	243	291	341	393
ILFORD HALL	0	0	1	1	2	5	7	10	13	17	21	25	30
INNER HARBOUR	0	0	0	0	0	0	0	0	0	0	0	0	0
JAMBEROO	1	2	3	5	8	11	16	20	25	30	35	42	50
JORDAN SPRINGS	3	5	7	12	20	33	47	65	86	109	134	161	190
KANDOS	1	1	6	10	17	52	76	107	141	179	222	269	320
KANGAROO VALLEY	2	2	4	6	10	16	22	30	38	46	56	65	75
KATOOMBA	10	15	22	36	60	93	134	183	238	300	367	439	516
KELLYVILLE	10	15	21	33	55	86	123	167	217	272	331	396	464
KEMBLA GRANGE	2	4	5	9	15	24	34	47	61	78	96	115	137
KEMPS CREEK	1	2	3	5	9	15	22	31	41	52	65	79	93
KENNY STREET	0	0	0	1	1	2	3	4	5	6	8	10	11
KENTHURST	16	24	34	56	92	144	205	278	361	451	550	656	770
KENTLYN	7	11	16	27	46	72	105	145	191	243	300	360	425
KIAMA	21	31	61	98	161	251	356	482	622	776	944	1125	1319
KINGSWOOD	7	11	16	27	46	74	108	152	202	259	322	389	463
KURRAJONG	5	7	11	18	29	44	61	82	104	129	154	179	206
LEABONS LANE	7	11	15	26	43	68	99	138	181	231	285	343	407
LENNOX	19	29	40	66	109	170	242	331	429	539	657	784	920
LITHGOW	4	6	21	34	56	88	123	166	213	265	319	378	440
LUDDENHAM	2	4	6	9	16	25	36	50	65	83	102	122	144
MACQUARIE FIELDS	7	11	15	25	43	69	99	138	182	232	286	343	405
MALDON	9	13	23	37	60	91	127	170	216	265	318	373	431
MAMRE	6	9	13	22	38	61	88	123	163	208	258	311	369
MARAYONG	7	11	15	25	43	68	98	136	179	228	281	339	402
MARSDEN PARK	6	9	13	22	36	55	79	107	138	173	210	250	291
MEADOW FLAT	0	0	2	3	5	8	12	16	20	25	30	35	41
MINTO	6	9	13	21	36	57	83	115	151	193	238	286	337
MITTAGONG	10	15	25	40	65	101	141	190	243	301	363	429	499
MOOREBANK	3	4	6	9	16	25	36	50	67	85	105	126	149
MOSS VALE	23	34	56	90	146	225	316	424	543	671	810	958	1114
MUNGERIE PARK	36	54	79	128	211	329	469	640	831	1042	1271	1518	1782
NARELLAN	9	14	20	34	57	91	132	183	240	305	375	451	533
NEWTON	3	5	7	12	19	31	45	62	82	104	129	155	184

Table B.1 Total plug-in electric vehicle stock by zone substation – 2020 to 2032 (GWh) – continued													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
NORTH EASTERN CREEK	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH LEPPINGTON	3	5	7	11	18	28	41	56	73	92	113	136	160
NORTH PARRAMATTA	30	45	64	103	171	269	383	524	680	854	1043	1246	1463
NORTH RICHMOND	3	5	8	12	20	30	42	57	73	91	110	129	148
NORTH ROCKS	14	21	30	49	81	127	181	246	320	401	489	584	685
NORTH WARRAGAMBA	2	3	7	11	17	26	35	46	58	70	82	95	107
NORTH WOLLONGONG	3	5	7	11	18	29	42	57	75	95	117	141	167
NORTHMEAD	18	26	38	61	101	158	225	307	399	500	611	729	856
NOWRA	7	10	17	27	43	66	91	120	152	185	220	258	298
OAKDALE	1	1	3	4	6	9	12	15	17	20	22	24	25
ORAN PARK	16	24	35	58	98	156	224	309	404	511	627	752	887
PARKLEA	21	32	45	74	122	191	272	371	481	603	735	881	1039
PENRITH 11KV	3	4	6	11	18	29	42	59	79	101	126	153	182
PLUMPTON	18	28	40	66	110	175	252	347	454	575	707	849	1002
PORT CENTRAL	6	9	15	25	41	63	90	123	160	200	244	293	344
PORT KEMBLA	6	9	12	19	30	46	64	86	109	134	161	194	232
PORTLAND	0	1	4	7	11	17	24	32	41	50	60	70	81
PRESTONS	6	9	13	22	36	58	85	118	155	198	245	295	348
PROSPECT	10	14	20	33	55	86	123	168	219	275	335	400	470
QUAKERS HILL	15	22	32	53	89	142	205	283	373	474	584	704	833
QUARRIES	5	7	10	17	28	44	63	86	112	142	174	209	246
RINGWOOD	8	12	20	32	53	81	114	153	196	243	293	346	403
RIVERSTONE	9	14	21	34	55	86	121	165	213	266	323	383	448
ROBERTSON	9	14	21	33	55	85	120	162	209	261	317	377	440
ROOTY HILL	11	17	25	41	69	109	158	219	289	367	453	546	647
ROSEHILL	6	9	13	20	34	52	75	102	132	165	202	240	282
RUSSELL VALE	7	11	16	27	45	71	103	141	185	234	288	347	411
RYDALMERE	89	132	185	295	482	745	1048	1413	1812	2248	2714	3211	3736
SCHOFIELDS	14	22	31	51	85	134	193	266	348	440	541	650	767
SEVEN HILLS	6	10	14	23	38	61	88	121	158	200	246	296	349
SHELLHARBOUR	11	16	25	40	63	95	131	172	215	261	308	367	438
SHERWOOD	12	18	25	39	65	100	142	192	248	310	376	445	519
SMITHFIELD	11	16	22	35	57	86	120	161	204	252	301	352	404
SOUTH GRANVILLE	26	39	53	85	137	211	295	396	505	624	750	882	1021
SOUTH LEPPINGTON	4	7	10	17	28	45	66	91	120	152	188	226	266
SOUTH MARSDEN PARK	3	5	7	12	20	32	46	63	83	105	128	154	181
SOUTH NOWRA	2	2	5	7	11	17	24	32	41	51	60	71	82
SOUTH WINDSOR	6	9	13	21	35	55	78	107	139	175	213	253	295
SOUTH WOLLONGONG	2	3	4	7	12	20	28	39	51	64	79	96	113
SPRINGWOOD	13	19	31	51	85	133	190	260	338	426	520	622	731
ST MARYS	7	11	16	28	47	75	109	152	201	257	319	385	458
SUSSEX INLET	5	8	12	20	33	51	73	100	130	163	198	237	277

Table B.1	Total plug-in electric vehicle stock by zone substation – 2020 to 2032 (GWh) – continued												
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
TAHMOOR	9	13	24	38	62	94	131	174	220	270	322	377	435
THE OAKS	1	2	4	7	11	17	24	32	41	50	60	71	82
ULLADULLA	11	16	27	43	70	108	151	203	260	321	387	456	529
UNANDERRA	3	5	7	12	20	32	46	64	84	106	130	157	186
WARILLA	5	6	8	11	15	20	24	26	26	23	18	21	31
WENTWORTH FALLS	5	8	12	19	32	50	72	100	130	165	203	243	287
WERRINGTON	7	12	17	28	48	76	110	154	203	259	321	388	460
WEST CASTLE HILL	15	23	32	52	86	134	191	260	337	423	515	615	721
WEST PARRAMATTA	5	8	11	18	30	47	67	92	119	149	182	217	254
WEST PENNANT HILLS	18	27	38	62	102	159	226	308	399	500	610	728	854
WEST WOLLONGONG	5	8	11	18	30	48	69	95	125	158	194	234	277
WESTMEAD	4	6	8	14	23	36	51	70	91	114	139	166	195
WETHERILL PARK	1	1	1	2	3	4	6	8	10	13	16	18	21
WHALAN	4	7	9	16	26	42	60	84	110	140	173	209	247
WILTON	0	0	2	3	4	6	7	9	11	12	14	15	15
WINDSOR	4	6	10	16	26	40	56	75	96	119	143	168	194
WISEMANS	3	5	7	11	18	28	39	52	66	82	99	116	133
WOMBARRA	3	4	6	11	18	28	41	56	74	93	115	138	164
WOODPARK	4	5	8	12	21	32	46	62	80	100	122	145	170
YATTE YATTAH	9	13	19	31	51	80	113	153	197	246	298	355	414
YENNORA	12	17	24	38	61	92	128	171	217	268	320	373	429
BOLONG ROAD	1	2	3	5	7	11	15	21	26	32	38	45	52
GRANVILLE 132KV	12	18	25	41	67	105	149	204	264	331	403	481	564
JASPER ROAD	15	23	33	53	87	136	193	263	341	427	520	621	728
LIVERPOOL	7	11	17	28	47	74	108	150	197	252	311	374	442
MT OUSLEY	5	8	12	19	32	51	74	102	134	169	208	251	297
NEPEAN ZS	9	14	21	35	59	93	134	184	240	302	370	442	519
TOMERONG ZS	3	4	7	11	17	27	37	49	63	77	92	108	124
WEST LIVERPOOL ZS	5	8	15	24	41	65	94	130	171	217	267	320	378
WEST WETHERILL PARK	0	0	0	0	0	1	1	1	2	2	2	3	3
TOTAL	**1339**	**2010**	**3026**	**4912**	**8112**	**12705**	**18087**	**24659**	**31965**	**40089**	**48845**	**58280**	**68361**

Table B.2	Total plug-in electric vehicle load at summer maximum demand (4:30 PM) by zone substation – 2020 to 2032 (MW)												
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
ABBOTSBURY	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2
ALBION PARK	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3
AMBARVALE	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.6	0.8	0.9
ANZAC VILLAGE	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9
APPIN	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
ARNDELL PARK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.6	0.7
BAULKHAM HILLS 11KV	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.8	1.1	1.4	1.8	2.2	2.6
BELLA VISTA	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.4	1.8	2.2	2.6
BERRIMA JUNCTION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BERRY	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3
BLACKHEATH	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9
BLACKMANS FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4
BLAXLAND	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.8	2.1
BOMADERRY	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.0
BONNYRIGG	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.4
BOSSLEY PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7
BOW BOWING	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5
BOWRAL	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.7	2.1	2.5	3.0
BRINGELLY	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.6	0.7
BULLI	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	1.0	1.2	1.4
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
CAMBRIDGE PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.1	1.3
CAMPBELLTOWN	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.0
CANLEY VALE	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.5
CARRAMAR	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.8
CASTLE HILL	0.1	0.1	0.1	0.2	0.3	0.5	0.9	1.2	1.7	2.2	2.8	3.4	4.1
CASULA	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.1	1.3
CATTAI	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.8
CAWDOR	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
CHERITON AVENUE	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.7	2.0	2.4
CHIPPING NORTON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
CLAREMONT MEADOWS	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2
CORRIMAL	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.3
CRANEBROOK	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.6	0.8	0.9
CULBURRA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6
DAPTO	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.3	1.5
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
DOONSIDE	0.0	0.1	0.1	0.1	0.2	0.4	0.6	0.9	1.3	1.7	2.2	2.8	3.3
DUNDAS	0.1	0.1	0.1	0.2	0.3	0.4	0.7	1.0	1.4	1.8	2.3	2.8	3.3
EAST RICHMOND	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
EDMONDSON PARK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6
EMU PLAINS	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.5
FAIRFIELD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5
FIGTREE	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.5

Table B.2	Total plug-in electric vehicle load at summer maximum demand (4:30 PM) by zone substation – 2020 to 2032 (MW) – continued												
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
GERRINGONG	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0
GLENMORE PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.6	0.8	1.0
GLENORIE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
GLOSSODIA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7
GREYSTANES	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.7	0.9	1.1	1.3
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
HAZELBROOK	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.1	1.3	1.6
HELENSBURGH	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4
HINCHINBROOK	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6
HOLROYD	0.1	0.1	0.1	0.2	0.3	0.5	0.8	1.1	1.6	2.1	2.7	3.3	4.0
HOMEPRIDE	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1
HORSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
HUNTINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
HUSKISSON	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.8	1.0
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
JORDAN SPRINGS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7
KANDOS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.8
KANGAROO VALLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
KATOOMBA	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.1	1.4	1.6
KELLYVILLE	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.3
KEMBLA GRANGE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
KEMPS CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENTHURST	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.5	1.8	2.2
KENTLYN	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.7	0.9	1.2	1.4
KIAMA	0.1	0.1	0.1	0.2	0.4	0.6	0.9	1.3	1.8	2.3	2.9	3.5	4.2
KINGSWOOD	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.7
KURRAJONG	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
LEABONS LANE	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.3
LENNOX	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.7	2.1	2.5
LITHGOW	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.1
LUDDENHAM	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5
MACQUARIE FIELDS	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.5	0.7	0.9	1.2	1.4
MALDON	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.2
MAMRE	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2
MARAYONG	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2
MARSDEN PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
MINTO	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.1
MITTAGONG	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	0.9	1.1	1.3
MOOREBANK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
MOSS VALE	0.0	0.1	0.1	0.2	0.2	0.4	0.6	0.9	1.2	1.5	1.8	2.2	2.6
MUNGERIE PARK	0.1	0.1	0.2	0.2	0.4	0.7	1.0	1.5	2.1	2.7	3.5	4.3	5.1
NARELLAN	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.5	1.8
NEWTON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6

Table B.2	Total plug-in electric vehicle load at summer maximum demand (4:30 PM) by zone substation – 2020 to 2032 (MW) – continued												
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5
NORTH PARRAMATTA	0.1	0.1	0.1	0.2	0.3	0.5	0.8	1.2	1.6	2.1	2.7	3.3	4.0
NORTH RICHMOND	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
NORTH ROCKS	0.0	0.0	0.1	0.1	0.1	0.2	0.4	0.6	0.8	1.0	1.3	1.6	1.9
NORTH WARRAGAMBA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.4
NORTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5
NORTHMEAD	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.6	2.0	2.4
NOWRA	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.8
OAKDALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
ORAN PARK	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.8	1.1	1.5	1.9	2.3	2.8
PARKLEA	0.1	0.1	0.1	0.1	0.2	0.4	0.6	0.9	1.3	1.6	2.1	2.6	3.1
PENRITH 11KV	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7
PLUMPTON	0.0	0.1	0.1	0.1	0.2	0.4	0.6	0.8	1.2	1.6	2.0	2.5	3.0
PORT CENTRAL	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1
PORT KEMBLA	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
PORTLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
PRESTONS	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1
PROSPECT	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.3
QUAKERS HILL	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.7	2.1	2.6
QUARRIES	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7
RINGWOOD	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0
RIVERSTONE	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.4
ROBERTSON	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1.0	1.2
ROOTY HILL	0.0	0.0	0.1	0.1	0.1	0.2	0.4	0.5	0.8	1.0	1.3	1.7	2.0
ROSEHILL	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8
RUSSELL VALE	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.7	0.8	1.0	1.2
RYDALMERE	0.2	0.2	0.4	0.5	0.8	1.3	2.0	2.9	3.9	5.1	6.4	7.7	9.1
SCHOFIELDS	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.7	0.9	1.2	1.6	1.9	2.3
SEVEN HILLS	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.9	1.0
SHELLHARBOUR	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.1	1.4
SHERWOOD	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.4
SMITHFIELD	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.5	0.6	0.8	1.0	1.1
SOUTH GRANVILLE	0.1	0.1	0.1	0.1	0.2	0.4	0.6	0.8	1.1	1.5	1.9	2.3	2.7
SOUTH LEPPINGTON	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.5	0.6	0.7	0.9
SOUTH MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
SOUTH NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
SOUTH WINDSOR	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	0.9	1.1
SOUTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
SPRINGWOOD	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.9	1.2	1.5	1.9	2.2
ST MARYS	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.6
SUSSEX INLET	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8

Table B.2	Total plug-in electric vehicle load at summer maximum demand (4:30 PM) by zone substation – 2020 to 2032 (MW) – continued												
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
TAHMOOR	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.2
THE OAKS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
ULLADULLA	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.2	1.4
UNANDERRA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6
WARILLA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
WENTWORTH FALLS	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9
WERRINGTON	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.5
WEST CASTLE HILL	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.7	2.1
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7
WEST PENNANT HILLS	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.6	2.0	2.4
WEST WOLLONGONG	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.8
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5
WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
WHALAN	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8
WILTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
WINDSOR	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8
WISEMANS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
WOMBARRA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5
WOODPARK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5
YATTE YATTAH	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.5	0.6	0.8	1.0	1.1
YENNORA	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.6	0.8	1.0	1.2
BOLONG ROAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
GRANVILLE 132KV	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.1	1.3	1.6
JASPER ROAD	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.7	2.1
LIVERPOOL	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.4	0.5	0.7	0.9	1.2	1.4
MT OUSLEY	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.9
NEPEAN ZS	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.5	1.7
TOMERONG ZS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
WEST LIVERPOOL ZS	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.2
WEST WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	**3.1**	**4.2**	**6.3**	**9.5**	**15.4**	**25.8**	**40.7**	**58.7**	**81.5**	**107.3**	**137.2**	**168.5**	**201.1**

Table B.3 Total plug-in electric vehicle load at summer maximum demand (5:00 PM) by zone substation – 2020 to 2032 (MW)													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
ABBOTSBURY	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
ALBION PARK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
AMBARVALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
ANZAC VILLAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
APPIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
ARNDELL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
BAULKHAM HILLS 11KV	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
BELLA VISTA	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6
BERRIMA JUNCTION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BERRY	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
BLACKHEATH	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
BLACKMANS FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
BLAXLAND	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
BOMADERRY	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
BONNYRIGG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
BOSSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
BOW BOWING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
BOWRAL	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	0.9
BRINGELLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
BULLI	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
CAMBRIDGE PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
CAMPBELLTOWN	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
CANLEY VALE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
CARRAMAR	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
CASTLE HILL	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0
CASULA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
CATTAI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
CAWDOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
CHERITON AVENUE	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
CHIPPING NORTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
CLAREMONT MEADOWS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
CORRIMAL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
CRANEBROOK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
CULBURRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
DAPTO	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DOONSIDE	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8
DUNDAS	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.8	0.9
EAST RICHMOND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EDMONDSON PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
EMU PLAINS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
FAIRFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
FIGTREE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4

Table B.3 Total plug-in electric vehicle load at summer maximum demand (5:00 PM) by zone substation – 2020 to 2032 (MW) – continued													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
GERRINGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
GLENMORE PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
GLENORIE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
GLOSSODIA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
GREYSTANES	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
HELENSBURGH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
HINCHINBROOK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
HOLROYD	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.5	0.6	0.7	0.9	1.0
HOMEPRIDE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
HORSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUNTINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
HUSKISSON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JORDAN SPRINGS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
KANDOS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
KANGAROO VALLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
KATOOMBA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
KELLYVILLE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
KEMBLA GRANGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
KEMPS CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENTHURST	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.5
KENTLYN	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
KIAMA	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	0.9
KINGSWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
KURRAJONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
LEABONS LANE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
LENNOX	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
LITHGOW	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
LUDDENHAM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
MACQUARIE FIELDS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
MALDON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
MAMRE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
MARAYONG	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MINTO	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
MITTAGONG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
MOOREBANK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
MOSS VALE	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8
MUNGERIE PARK	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3
NARELLAN	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
NEWTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1

Table B.3 Total plug-in electric vehicle load at summer maximum demand (5:00 PM) by zone substation – 2020 to 2032 (MW) – continued													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
NORTH PARRAMATTA	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0
NORTH RICHMOND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
NORTH ROCKS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5
NORTH WARRAGAMBA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
NORTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
NORTHMEAD	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6
NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
OAKDALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORAN PARK	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6
PARKLEA	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7
PENRITH 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
PLUMPTON	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
PORT CENTRAL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
PORT KEMBLA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
PORTLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
PRESTONS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
PROSPECT	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
QUAKERS HILL	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6
QUARRIES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
RINGWOOD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
RIVERSTONE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
ROBERTSON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
ROOTY HILL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5
ROSEHILL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
RUSSELL VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
RYDALMERE	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.0	1.3	1.6	2.0	2.3	2.7
SCHOFIELDS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.5
SEVEN HILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
SHELLHARBOUR	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
SHERWOOD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
SMITHFIELD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
SOUTH GRANVILLE	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7
SOUTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
SOUTH MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
SOUTH NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
SOUTH WINDSOR	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
SOUTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
SPRINGWOOD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5
ST MARYS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
SUSSEX INLET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2

Table B.3 Total plug-in electric vehicle load at summer maximum demand (5:00 PM) by zone substation – 2020 to 2032 (MW) – continued													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
TAHMOOR	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
THE OAKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
ULLADULLA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
UNANDERRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
WARILLA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WENTWORTH FALLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
WERRINGTON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
WEST CASTLE HILL	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
WEST PENNANT HILLS	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6
WEST WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WHALAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
WILTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WINDSOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
WISEMANS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
WOMBARRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
WOODPARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
YATTE YATTAH	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
YENNORA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
BOLONG ROAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GRANVILLE 132KV	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
JASPER ROAD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5
LIVERPOOL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3
MT OUSLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
NEPEAN ZS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
TOMERONG ZS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
WEST LIVERPOOL ZS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
WEST WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	**0.8**	**1.3**	**1.9**	**3.2**	**5.4**	**8.5**	**12.2**	**16.9**	**22.2**	**28.1**	**34.7**	**41.2**	**48.2**

Table B.4 Total plug-in electric vehicle load at winter maximum demand (6:00 PM) by zone substation – 2020 to 2032 (MW)													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
ABBOTSBURY	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
ALBION PARK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
AMBARVALE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
ANZAC VILLAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
APPIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
ARNDELL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
BAULKHAM HILLS 11KV	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7
BELLA VISTA	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
BERRIMA JUNCTION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BERRY	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
BLACKHEATH	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
BLACKMANS FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
BLAXLAND	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5
BOMADERRY	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
BONNYRIGG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
BOSSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
BOW BOWING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
BOWRAL	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0
BRINGELLY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
BULLI	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
BYLONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CABRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
CAMBRIDGE PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
CAMPBELLTOWN	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
CANLEY VALE	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4
CARRAMAR	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
CASTLE HILL	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.1
CASULA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
CATTAI	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
CAWDOR	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
CHERITON AVENUE	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.6
CHIPPING NORTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
CLAREMONT MEADOWS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
CORRIMAL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
CRANEBROOK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
CULBURRA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
DAPTO	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4
DARKES FOREST	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DOONSIDE	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8
DUNDAS	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
EAST RICHMOND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EDMONDSON PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
EMU PLAINS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
FAIRFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
FIGTREE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4

Table B.4 Total plug-in electric vehicle load at winter maximum demand (6:00 PM) by zone substation – 2020 to 2032 (MW) – continued													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
GERRINGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
GLENMORE PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
GLENORIE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
GLOSSODIA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
GREYSTANES	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
HARTLEY VALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HAZELBROOK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
HELENSBURGH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
HINCHINBROOK	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
HOLROYD	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	0.9	1.1
HOMEPRIDE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3
HORSLEY PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HUNTINGWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
HUSKISSON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
ILFORD HALL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INNER HARBOUR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JAMBEROO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
JORDAN SPRINGS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
KANDOS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
KANGAROO VALLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
KATOOMBA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
KELLYVILLE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
KEMBLA GRANGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
KEMPS CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
KENNY STREET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KENTHURST	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6
KENTLYN	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
KIAMA	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0
KINGSWOOD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
KURRAJONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
LEABONS LANE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
LENNOX	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7
LITHGOW	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
LUDDENHAM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
MACQUARIE FIELDS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
MALDON	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
MAMRE	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
MARAYONG	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
MEADOW FLAT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MINTO	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
MITTAGONG	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
MOOREBANK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
MOSS VALE	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8
MUNGERIE PARK	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.4
NARELLAN	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
NEWTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1

Table B.4 Total plug-in electric vehicle load at winter maximum demand (6:00 PM) by zone substation – 2020 to 2032 (MW) – continued													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
NORTH EASTERN CREEK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
NORTH PARRAMATTA	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.1
NORTH RICHMOND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
NORTH ROCKS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.5
NORTH WARRAGAMBA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
NORTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
NORTHMEAD	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
NOWRA	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
OAKDALE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ORAN PARK	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
PARKLEA	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8
PENRITH 11KV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
PLUMPTON	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
PORT CENTRAL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
PORT KEMBLA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
PORTLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
PRESTONS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3
PROSPECT	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
QUAKERS HILL	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.6
QUARRIES	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
RINGWOOD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
RIVERSTONE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3
ROBERTSON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
ROOTY HILL	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5
ROSEHILL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
RUSSELL VALE	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3
RYDALMERE	0.1	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.4	1.8	2.1	2.5	2.9
SCHOFIELDS	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
SEVEN HILLS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
SHELLHARBOUR	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
SHERWOOD	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4
SMITHFIELD	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
SOUTH GRANVILLE	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8
SOUTH LEPPINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
SOUTH MARSDEN PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
SOUTH NOWRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
SOUTH WINDSOR	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
SOUTH WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
SPRINGWOOD	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
ST MARYS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
SUSSEX INLET	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2

Table B.4 Total plug-in electric vehicle load at winter maximum demand (6:00 PM) by zone substation – 2020 to 2032 (MW) – continued													
Zone substation	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
TAHMOOR	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
THE OAKS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
ULLADULLA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4
UNANDERRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
WARILLA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WENTWORTH FALLS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
WERRINGTON	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
WEST CASTLE HILL	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
WEST PARRAMATTA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
WEST PENNANT HILLS	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7
WEST WOLLONGONG	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
WESTMEAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WHALAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2
WILTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WINDSOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
WISEMANS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
WOMBARRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
WOODPARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1
YATTE YATTAH	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
YENNORA	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
BOLONG ROAD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GRANVILLE 132KV	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4
JASPER ROAD	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6
LIVERPOOL	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3
MT OUSLEY	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2
NEPEAN ZS	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4
TOMERONG ZS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
WEST LIVERPOOL ZS	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3
WEST WETHERILL PARK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	**1.0**	**1.6**	**2.6**	**4.3**	**6.9**	**10.4**	**14.6**	**19.6**	**25.2**	**31.5**	**38.1**	**44.9**	**52.1**