




Attachment 5.03

Area plan projects - 2014 review of preferred strategies

January 2015



REVIEW

Responsibility	Approval	Name	Signature	Date
Endorsed	A/Subtransmission Planning Manager	Srividya Kannan		31/12/2014
Endorsed	Investment Management Manager	Matt Cooper		31/12/2014
Approved	Manager - Asset & Network Planning	Neil Gordon		31/12/14

Reference Documents

Reference	Document Type	Document Name	Version	Comments
1	Area Strategy	Master Capex Project List	Sep 2013	TRIM record D14/431846
2	Supporting Information	Area Plan Projects Review 2014 – supporting information	V1 Nov 2014	TRIM record D14/589585
3	Supporting Information	Area Plan Projects Review 2014 – supporting information	V2 Dec 2014	TRIM record D14/688033
4	Supporting Information	Conditional Projects Review 2014	Nov 2014	TRIM record D14/662765
5	Supporting Information	Area Plan Replacement Projects - Changes agreed with maintenance Engineering 29 Dec 2014	Dec 2014	TRIM record D14/688034

Area Plan Projects – 2014 Review of preferred strategies

December 2014

Version 1.0

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1 Background

1.1 Area Plans

For the purposes of sub-transmission planning, Ausgrid has divided its network into 25 geographic 'Areas' and generates a sub-transmission 'Area Plan' for each geographic 'Area'.

The requirements of the Ausgrid *transmission/dual function network* that links TransGrid's bulk supply points to Ausgrid's distribution network are considered based on the broader Sydney Inner Metropolitan, Central Coast and Hunter regions to create three 'Transmission Area Plans'. Each of these regions encompasses multiple 'Areas'.

Each Area Plan is revised on approximately a three year basis. This process involves a detailed investigation into all the needs, constraints and possible strategic solutions for that area. It is designed to capture all of the drivers relating to the area and encompasses a ground up review of all credible strategies for meeting the network needs in that area. Following this process, the area plan defines a suite of projects that form the *preferred strategy* for that geographic area.

On an annual basis, the timing of projects within the preferred strategy of an area plan will be reviewed as new information and forecasts become available. These changes are published in this document which is prepared by Sub-transmission Planning. This process is described in detail in network standard *INV-STD-10019 - Area Planning*.

1.2 Annual Capital Review Process

The annual capital review process involves, in broad terms:

1. Collating all changes to key inputs into the area planning process, including latest demand forecasts, asset condition assessments, project delivery timing, changes to estimated project costs and any other element that could affect the requirement for major project investment.
2. Reviewing and analysing the impact of those changes on the timing of the projects that comprise the preferred strategy in each Area Plan.
3. Where necessary, identifying the need for additional actions to resolve new constraints or needs, and allocating indicative projects.
4. Inclusion of demand management options where feasible.
5. Issuing a revised project list representing the required timing of each project in the preferred strategy in each Area Plan and the associated cash flows.
6. Reviewing the changes to determine those Areas where the magnitude of the changes may warrant a review of the analysis that identified the preferred strategy in an Area Plan.
7. Scheduling those plans where the preferred strategy may need to change for priority review.

1.3 Key Inputs

1.3.1 Spatial Demand Forecast

The 2014 project list is based on the Spatial Demand Forecast using winter 2013 and summer 2013/14 historical loads. The forecast peak demands have a 50% probability of being exceeded (PoE50) consistent with the former NSW Distribution Licence Conditions.

In 2012 there were significant forecasting process changes – particularly relating to probabilistic weather correction and load normalisation, the new forecasting platform, and the inclusion of econometric growth rate data into the spatial forecasts. Further, in 2013, there was an inclusion of energy efficiency and solar PV analysis into the spatial forecast. Analysis of previous forecasts as compared with the actual measured demand has shown that some earlier forecasts have overestimated demand, and a revised methodology has been put into place for 2013 and 2014. The result has generally been a lowering of the initial starting point when compared to those earlier forecasts.

On the whole, the last two forecasts have been lower than previous forecasts, which had also been decreasing over time. This is likely due to a combination of influences such as price rises, ongoing economic uncertainty, energy efficiency initiatives and the proliferation of embedded generation. At an aggregate system wide level it

appears that there is decreasing demand growth and it could be erroneously assumed that minimal augmentation investment would be required. However, while some locations are declining, others are growing significantly. Investment still needs to be made at individual substations and subtransmission feeders with growth, especially when spot loads are taken into consideration.

Whilst summer is confirmed as the overall dominant season, there are a number of substations that either peak in winter or peak in both summer and winter.

1.3.2 Ausgrid Planning Criteria

Consistent with the July 2014 changes to the NSW Licence Conditions, the trigger for investment in relation to underground cable systems and Subtransmission Substations was adjusted by the application of risk similar to that applied to overhead cable systems and Zone Substations. However, the magnitude of risk applied to underground cables and Subtransmission Substations has been capped at 10MVA. This has had the effect of delaying the need for several growth driven projects within the next regulatory period and in some cases moving those projects to the following regulatory period and beyond.

The decision to apply risk to underground cables and subtransmission substations was taken after several studies undertaken during the year showed that the majority of potential savings from all the scenarios is a result of applying this risk and concluded that savings could be made to the capital investment programme without any obvious changes to overall system reliability. Initial works are in progress to incorporate probabilistic analysis in planning standard and further work will be carried out over the next year to finalise new Ausgrid planning standards employing probabilistic planning techniques.

In regard to the inner metropolitan network, risk was not applied to the 132kV circuits as the planning of transmission networks is covered in a separate agreement between the NSW Government and TransGrid.

1.3.3 Asset Condition

Asset condition issues have been identified by Primary Systems branch of the Chief Engineer Division. Both larger "Strategic Asset Prioritisation" programmes (e.g. 11kV switchgear replacement, gas and fluid-filled cable programmes) and individual reports on specific localised issues have been identified. These reports provide a qualitative indication of asset condition and likelihood of failure, and an optimum replacement date, or range of dates. If synergies with other drivers are apparent, such that a more efficient and optimum replacement programme can be achieved, the replacement year can be adjusted. This is subject to internal review and must ensure that the overall replacement programme goals and risk profile is not materially affected,

The key changes to the asset condition drivers over the past two years have been:

- The revision to the oil-filled cable replacement programme, which had already deferred the final retirement date of the last fluid-filled cables from 2024 to 2029¹.
- Revision of the 11kV switchgear replacement programme, altering some 11kV switchgear replacement needs including the replacement of air-insulated switchgear without earthed metal barriers².

1.3.4 Demand Management

Demand Management (or other non-network) options are identified as an intrinsic element of the new Area Plans. Potential demand management and non-network solutions were considered for each identified capacity driver. This included technical and financial analysis, and this has resulted in a Demand Management project to defer the "Camperdown additional transformer and Associated 33kV Feeder Project" until 2016/17.

1.3.5 Other Drivers

A number of other issues can drive investment in the network however, in general, projects resulting from these drivers are only a relatively minor component of the capital works programme. These drivers include:

- Compliance with regulations, including Duty of Care, fault levels and other safety issues.
- Customer Connections.

For this review, a case-by-case approach has been taken in assessing Duty of Care items, and as a result some projects have been deferred to coincide with other investment drivers where feasible.

¹ Strategic Asset Prioritisation – Sub-transmission Cables, Rev 02, 31/07/2012

² Strategic Asset Prioritisation – 11kV Switchgear, Rev 2.1, April 2013

1.3.6 Conditional Projects

A desktop review of all the conditional projects driven by major customer loads was undertaken to determine the percentage likelihood of these projects proceeding. For the assigned likelihood and the rationale for the chosen percentage for the conditional projects, refer Section – 5.0 for details.

2 Summary of Changes to previous list

2.1 TransGrid 330kV Feeder Strategy Change

The major change in the 2014 Project Review is that, due to reduced forecast load for the Inner Metropolitan Load Area, the TransGrid 330kV cable project (from Rookwood Road BSP to Beaconsfield West BSP) has essentially been replaced by a new Ausgrid 132kV cable project.

Whereas the TransGrid project had been planned for completion by September 2018 at an overall cost of \$730M, the Ausgrid 132kV cable project (i.e. two cables to be run from Lane Cove STS to Pymont STS) is planned for completion in the 2022/23 year at an overall cost of \$338M.

The Ausgrid project is planned to commence with \$6M expenditure in the 2015/19 Regulatory Period with the remaining \$314M to follow in the 2020/24 Regulatory Period. The current status of the Ausgrid project is “preferred”.

2.2 2015/19 Major Projects (>\$25M)

Whilst there have been no significant outright changes to Ausgrid 2015/19 major projects (i.e. those projects with >\$25M spend within the 2015/19 Regulatory Period) compared with those identified in the 2013 Review, some major projects have been deferred by a year or two. For example, both the Alexandria STS and the new Rockdale Zone Substation projects have been deferred from a 2016 completion date to a 2018 completion date due to project implementation and deliverability delays.

Further, due to overall reduced forecast, all of the planned 2015/19 major projects are “replacement” projects, and from a system perspective the make-up of the 2015/19 major projects is as follows:

- Two new Subtransmission Substations (Alexandria STS and Munmorah STS);
- Five new Zone Substations (Bligh Street, Dulwich Hill, Strathfield South, Greenacre Park and Rockdale);
- One major substation refurbishment (Peakhurst STS); and
- Five new subtransmission cable projects (Replacement of 9E3 & 9E4/2, Dulwich Hills 33kV feeders, Auburn & Lidcombe 33kV feeders, 92FA/B & 90XA/B and 92JA/B & 92GA/B).

2.2 2015/19 and 2020/24 Major Projects cancelled

The overall reduced forecast has resulted in cancellation of one major project in 2015/19 regulatory period in the Maitland area, this being the proposed new Telarah West zone substation (\$26M). The revised plan is to decommission the existing Telarah zone via load transfer to Rutherford and Maitland zone substations (\$4.4M).

The reduced forecast for Macquarie Park Zone Substation has also resulted in spare 11kV capacity and cancellation of the 2020/24 Macquarie University Zone Substation project. However it is recognised that this will need to be reassessed when Macquarie University provides the next round of updated load assessments.

The full conversion of Gwawley Bay Zone Substation to 132kV operation (\$28.4M) has also been cancelled due to reduced forecast load.

2.3 2015/19 and 2020/24 Moderate Sized Projects Cancelled

The overall reduced forecast has resulted in the cancellation of a number of moderate sized projects throughout the 2015/19 and 2020/24 Regulatory Periods, including Mascot Transformer Replacement (\$5.9M), Kingsford 3rd Transformer (\$6.3M), Beacon Hill Zone Uprate (\$6.6M), and Brookvale to Beacon Hill 11kV Load Transfer Project (\$6.7M).

2.4 2015/19 and 2020/24 Moderate Sized Projects deferred

Based on the conditional assessment of 11kV switchgear by Maintenance Engineering in 2014, two of the 11kV switchgear replacement moderate sized projects at Terrey Hills (\$9.4M) and Lisarow (\$9.3M) zone substations have been deferred beyond 2024.

3 2015 – 2019 Regulatory Period

3.1 Ausgrid Regulatory Submission

The Annual Capital Review for 2014 will form the basis of the 2015-19 regulatory submission. Approximately 92% of capital expenditure in this review is replacement driven, with 8% demand growth driven.

3.2 Summary of Major Projects in regulatory period

The major projects (>\$25M) expected in the 2015-2019 regulatory period as a result of this review are outlined below. Only expenditure within the 2015-2019 regulatory period is included.

Project	Primary Driver	Required Completion Date	Estimated Cost 2015/19 reg period (\$ nominal)
New Bligh St ZS	Replacement	December 2020	120.0M
Eastern CBD tunnel		March 2015	22.7M
Bligh St ZS 132kV connections		December 2020	10.3M
Associated 11kV duct lines		September 2020	3.8M
Decommission Dalley St ZS and City East ZS		December 2021	20.3M
132kV Feeders 92FA/B and 90XA/B Replacement	Replacement	September 2016	34.9M
132kV Feeders 92JA/B and 92GA/B Replacement		September 2019	30.0M
New Alexandria STS	Replacement / Connections	March 2018	39.8M
Sydney Airport 33kV Feeder Replacement		September 2018	24.2M
Auburn & Lidcombe ZS 33kV Feeder Replacement	Replacement	June 2017	33.5M
Lidcombe ZS Refurbishment		June 2018	23.1M
New Dulwich Hill 33/11kV ZS and retire Dulwich Hill ZS	Replacement	June 2017	23.8M
Dulwich Hill 33kV feeder replacement			32.1M
132kV Feeder 900 Replacement	Replacement	April 2016	44.8M
Willoughby 132kV Feeders 9E3 & 9E4/2 Replacement	Replacement	October 2015	40.1M
New Strathfield South 132/11kV ZS and retire Enfield ZS	Replacement	March 2017	29.5M
Strathfield South 132kV feeder connections			5.0M
New Munmorah STS and connections	Replacement	September 2016	31.3M
New Rockdale 132/11kV ZS and retire Rockdale 33/11kV ZS	Replacement	December 2018	30.5M
New Greenacre 132/11kV ZS and retire Greenacre Park ZS	Replacement	June 2017	30.0M
Peakhurst 33kV building and switchgear replacement	Replacement	June 2018	27.6M

4 Expenditure Implications of Changes

The following table shows the changes in 2015-2019 area plan costs between 2012, 2013 reviews and the 2014 review:

Region	Area Plan	Total 2015/19 (\$M nominal)		
		2012 Review	2013 Review	2014 Review
Central Coast	Lower Central Coast	29.36	29.24	10.59
	Upper Central Coast	39.80	41.74	32.66
East	Camperdown & Blackwattle Bay	16.71	17.97	26.92
	Sydney CBD	258.79	238.16	204.86
	Eastern Suburbs	338.88	197.45	171.47
North	Terrey Hills and Pittwater	26.65	45.65	18.67
	Manly Warringah	7.64	33.60	0.50
	Lower North Shore	84.85	40.00	75.85
	Upper North Shore	7.27	11.56	19.32
	Carlingford	44.25	20.48	13.68
	North West	1.69	1.06	1.50
South	Inner West	153.43	181.24	141.80
	Sutherland	9.74	12.60	27.84
	St George	99.06	85.33	76.21
	Canterbury Bankstown	218.10	173.56	181.13
Lower Hunter	Greater Cessnock	34.01	20.92	20.42
	Maitland	103.39	51.74	20.48
	Newcastle Inner City	12.43	25.47	38.53
	Newcastle Ports	16.56	16.83	21.95
	North East Lake Macquarie	10.98	20.14	8.00
	Port Stephens	63.19	13.31	9.02
	Western Corridor	13.09	11.26	10.81
	West Lake Macquarie	15.50	38.55	39.58
Upper Hunter	Singleton	6.89	12.53	22.80
	Upper Hunter	48.80	41.36	43.26
Transmission	Sydney Inner Metropolitan	143.77	117.55	114.33
	Central Coast	26.15	-	0.36
	Lower Hunter	8.24	-	2.04
Conditional Projects	All Areas	76.09	27.18	16.09
Total Area Plans		1,897.86	1,526.47	1370.65
Area Plan Supporting Costs	Critical Protection Communications	18.88	13.01	10.53
	Planning, Forecasting, Compliance & Area Plan Efficiency Adjustments	73.51	33.29	27.21
	Switching and Control	18.12	11.16	10.44
	GIS Data Capture	30.80	11.98	9.68
Total Area Plans including supporting costs		2039.17	1,595.91	1428.51

Note: Area Plans have supporting costs such as Critical Protection Communications, Planning Forecasting and Compliance, Switching and GIS data capture that are calculated separately in the Capex Forecast. These supporting costs are added to the table for reference purposes.

5 Complete Area Plan Project List – 2014 Review

Consolidated CAPEX Report³

Values in nominal dollars

BPC Project	Need Date	Fiscal year	2015	2016	2017	2018	2019	Total 15/19	2020	2021	2022	2023	2024	Total 15/24
		Status	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
Central Coast Region														
Lower Central Coast			7,704	2,782	100	0	0	10,585	0	0	0	0	0	10,585
ARA_06.1.0011	Peats Ridge 11kV and 33kV SG Replacement	Oct-2015	Committed	6,474	1,782			8,255						8,255
ARA_06.1.0023	New Empire Bay 66/11kV Zone with 11kV LTs (SI-05732)	Dec-2014	Committed	800				800						800
ARA_06.1.0025	New 66kV Feeder from Empire Bay to Avoca (SI-05733)	Sep-2014	Committed	30				30						30
ARA_06.1.0031A	Umina 11kV SG Replacement (Q13746)	Sep-2016	DB Issued	400	1,000	100		1,500						1,500
Upper Central Coast			4,361	19,000	9,300	0	0	32,661	0	0	0	0	0	32,661
ARA_06.2.0002	New Lake Munmorah 132/11kV Zone (SJ-04658 & SJ-05904)	Jul-2014	Committed	15				15						15
ARA_06.2.0009	Vales Point 11kV SG Replacement	Oct-2015	Committed	1,346				1,346						1,346
ARA_01.0013	Munmorah STS + Connections (SJ-00102 & SJ-00165)	Sep-2016	DB Issued	3,000	19,000	9,300		31,300						31,300

³ The CAPEX report is available in SAP-BI under version 2014-2019 Submission -Live Draft (RV_Z36_REG_2014-19). The 5-year period until 2024 is included for reference purposes to provide a 10 year investment overview.

Consolidated CAPEX Report

Values in nominal dollars

			Fiscal year	2015	2016	2017	2018	2019	Total 15/19	2020	2021	2022	2023	2024	Total 15/24
BPC Project		Need Date	Status	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
East Region															
Camperdown - Blackwattle Bay				6,649	3,022	3,462	11,586	2,196	26,915	0	0	0	0	0	26,915
ARA_04.5.0001	Camperdown Zone Refurbishment (SJ-02883, SM-04738)	Oct-2014	Committed	3,050	3,000	2,250			8,300						8,300
ARA_04.5.0002	Camperdown 5kV Load Conversion (SM-12233 & SM-14378)	Oct-2014	Committed	1,400					1,400						1,400
ARA_04.5.0003	Camperdown 33kV Feeder Replacement (SJ-02875)	Oct-2014	Committed	299					299						299
ARA_04.5.0004	Camperdown Additional Tx and Associated 33kV Feeder	Sep-2017	Preferred			0	2,577	716	3,294						3,294
ARA_04.5.0005	Blackwattle Bay 5kV Load Conversion and 11kV LTs	Jul-2018	Preferred	1,900		695	8,663	1,325	12,583						12,583
ARA_04.5.0006	Blackwattle Bay Zone Retirement	Dec-2018	Preferred		2	49	346	154	550						550
ARA_04.5.0010A	Auto closing on Tx3 at Pymont STS	Jun-2016	Preferred		21	468			488						488
Sydney CBD				36,255	38,104	51,908	39,926	38,670	204,864	23,500	3,951	5,014	2,129	583	240,042
ARA_02.1.0001	New City North 11kV Ductlines	Dec-2015	Committed	2,215	2,000	2,000			6,215						6,215
ARA_02.1.0004	CBD 11kV LTs 2012	Sep-2014	Committed	490					490						490
ARA_02.1.0005	CBD 11kV LTs (N-2)	Sep-2017	Committed	1,200	4,700	2,504	0		8,404						8,404
ARA_02.1.0010	Dalley St Emergency 11kV SG (SJ-05236)	Jun-2015	Committed	600					600						600
ARA_02.1.0016	132kV Feeders 92L/3 and 92M/1 Retirement	Sep-2016	DB Issued		737	0			737						737
ARA_02.1.0017	Retire 929/2, 92L/1, 928/1, 92M/2	Dec-2021	Preferred						0			482			482
ARA_02.1.0018	11kV LTs from City East to New Bligh St ZS	Sep-2022	Preferred						0			4,045	1,131		5,177
ARA_02.1.0024A	Belmore Park Feeder 929 Extension (SJ-06139)	Dec-2014	Committed	1,181					1,181						1,181
ARA_02.1.0071	Barangaroo Connections	Nov-2014	Committed	3,900					3,900						3,900
ARA_02.1.0102	Belmore Park 132kV Feeders (SJ-05600)	Dec-2014	Committed	400					400						400
ARA_02.1.0105	Belmore Park 11kV Ductlines	Dec-2014	Committed	700	800				1,500						1,500
ARA_02.1.0106	New Belmore Park 132/11kV Zone (SJ-03191)	Dec-2014	Committed	320					320						320
ARA_02.1.0108	CBD Eastern Tunnel (SJ-05729)	Mar-2015	Committed	13,294	9,403				22,697						22,697
ARA_02.1.0123	New Bligh St Zone 132kV Connections (SJ-06104)	Dec-2020	DB Issued		500	1,500	5,000	3,250	10,250	0					10,250
ARA_02.1.0125	Bligh St 11kV Ductlines	Sep-2020	DB Issued	1,300				2,500	3,800	21,000	3,000				27,800
ARA_02.1.0126	New Bligh St 132/11kV ZS with three Tx	Dec-2020	DB Issued	7,000	13,000	40,000	30,000	30,000	120,000	0					120,000
ARA_02.1.0127	Decommission City East 33/11kV ZS and assoc. 33kV feeders	Dec-2022	Preferred						0			53	998		1,051
ARA_02.1.0001C	New City North 132/11kV Zone (SJ-03100 & SJ-00128)	Dec-2015	Committed	2,815	1,300				4,115						4,115
ARA_02.1.0133A	Bligh St ZS 4th Tx	Sep-2024	DB Issued						0					583	583
ARA_02.1.0134A	Dalley Street Decommissioning	Dec-2021	DB Issued						0		51	434			485
ARA_02.1.0135A	Dalley St 11kV LTs for Decommission	Sep-2020	DB Issued	840	5,664	5,905	4,926	2,920	20,256	2,500	900				23,656

Consolidated CAPEX Report

Values in nominal dollars

BPC Project	Need Date	Fiscal year	Status	2015	2016	2017	2018	2019	Total 15/19	2020	2021	2022	2023	2024	Total 15/24
				* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
East Region															
Eastern Suburbs				15,938	49,950	42,626	29,970	32,988	171,472	56,231	80,127	71,277	50,154	14,698	443,960
ARA_03.1A.0005	Darlinghurst Zone Substation and 33kV Feeders Retirement	Dec-2024	Preferred						0					3,279	3,279
ARA_03.1A.0007	St Peters Ring Main CB (SJ-05959)	Dec-2014	Committed	2,500					2,500						2,500
ARA_03.1A.0011	Marrickville Ring Main CB (SJ-05960)	May-2015	Committed	1,100	851				1,951						1,951
ARA_03.1A.0013	Zetland 11kV VCB (SI-10001)	Dec-2014	Committed	465					465						465
ARA_03.1A.0016	Waverley ZS 33kV Feeders retirement	Jun-2015	DB Issued	100	350				450						450
ARA_03.1A.0017	Paddington 33kV Feeders Replacement	Dec-2022	DB Issued						0			7,114	9,122		16,236
ARA_03.1A.0019	Graving Dock 11kV VCB (SI-09986)	Dec-2014	Committed	30					30						30
ARA_03.1A.0020	Graving Dock 33kV Feeder Replacement	Dec-2022	Preferred						0			2,510	3,539		6,049
ARA_03.1A.0026A	St Peters 11kV SG Replacement	Jun-2024	Preferred						0			403	6,389	11,119	17,910
ARA_03.1A.0028A	New Alexandria STS (SJ-00091, SJ-00172, SJ-00175)	Mar-2018	DB Issued	2,000	10,300	19,970	7,500		39,770						39,770
ARA_03.1A.0029A	Campbell St to Surry Hills 11kV LTs	Sep-2024	Preferred						0					301	301
ARA_03.1B.0002	Botany to Port Botany 11kV LT (SM-05232)	Dec-2014	Committed	60					60						60
ARA_03.1B.0003	Botany 11kV SG Replacement & 11kV LTs	Jun-2018	DB Issued	200	11,300	2,305	0		13,805						13,805
ARA_03.1B.0007	Matraville to Port Botany 11kV LT	Dec-2014	Committed	260					260						260
ARA_03.1B.0016	Matraville 11kV SG Replacement (SJ-05953)	Dec-2018	DB Issued	1,000	13,400	8,000	2,076	0	24,476						24,476
ARA_03.1B.0017	Mascot 33kV Feeders Replacement (Alexandria - Mascot)	Dec-2018	Preferred				5,572	9,621	15,193						15,193
ARA_03.1B.0020	Mascot Zone Refurbishment	Dec-2020	Preferred			132	1,189	7,703	9,025	9,386	2,687	244			21,342
ARA_03.1B.0023	Matraville ZS 33kV Feeders replacement	Dec-2021	Preferred						0		6,665	8,689			15,354
ARA_03.1B.0005C	Randwick Decommissioning (SJ-05320)	Dec-2014	Committed	722					722						722
ARA_03.1B.0029A	Sydney Airport 33kV Feeder Replacement (Alexandria STS)	Dec-2018	Preferred		150	2,546	8,789	12,725	24,210						24,210
ARA_03.1B.0031A	Botany 33kV Feeder Replacement	Dec-2022	Preferred						0			11,822	15,916		27,738
ARA_03.1C.0001	New Rose Bay 11kV Connections (SI-05718)	Oct-2014	Committed	1,100					1,100						1,100
ARA_03.1C.0002	New Rose Bay 132/11kV Zn	Oct-2014	Committed	3,201					3,201						3,201
ARA_03.1C.0003	Rose Bay retirement (includes 33kV Feeders)	Oct-2015	DB Issued	80	449				529						529
ARA_03.1C.0004	Surry Hills 11kV SG Replacement	Sep-2015	DB Issued	1,000	12,000	5,800			18,800						18,800
ARA_03.1C.0005	Decommission Zetland ZS & Feeders (11kV LT to Green Sq ZS)	Dec-2021	Preferred						0		10,992	14,382			25,374
ARA_03.1C.0007	Surry Hills ZS 33kV Feeders 383, 384, 385 replacement	Dec-2021	Preferred						0		7,908	9,006			16,914
ARA_03.1C.0008	New Waverley 132/11kV Zone (SJ-05952 & SM-12599)	Dec-2014	Committed	2,070					2,070						2,070
ARA_03.1C.0009	Waverley Retirement	Dec-2015	DB Issued	50	1,150				1,200						1,200
ARA_03.1C.0014	Clovelly 11kV SG Replacement with Temp 11kV LTs (Q13755)	Dec-2017	Preferred			417	566		983						983
ARA_03.1C.0022	132kV Feeders 260/2 & 261/2 Replacement (Clovelly-Kingsford)	Dec-2020	Preferred						0	10,538	14,111				24,649
ARA_03.1C.0038A	132kV Feeder 264 Replacement (Beaconsfield to Kingsford)	Dec-2020	Preferred					2,938	2,938	36,254	12,074				51,266
ARA_03.1C.0039A	132kV feeder 265 replacement	Dec-2022	Preferred						0			10,909	15,189		26,098
ARA_03.1C.0040A	132kV feeders 90R & 9SB/2 replacement	Sep-2021	Preferred						0	53	25,690	6,196			31,940
ARA_03.1C.0042A	Clovelly to Kingsford 11kV LT	Sep-2017	Preferred			1,620	2,001		3,620						3,620
ARA_03.1C.0043A	Clovelly to Waverley 11kV LT	Sep-2017	Preferred			1,837	2,277		4,114						4,114

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				* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
North Region															
Lower North Shore				46,697	29,155	0	0	0	75,852	0	23	6,059	2,162	0	84,096
ARA_05.1.0002	Willoughby STS Refurbishment (SJ-05551)	Oct-2015	Committed	60					60						60
ARA_05.1.0006	Crows Nest 132kV Conversion (SJ-05651 & SM-05951)	May-2016	Committed	0	474				474						474
ARA_05.1.0008	Willoughby 132kV Feeders 9E3 & 9E4/2 Replacement	Oct-2015	Committed	23,236	16,911				40,147						40,147
ARA_05.1.0009	New North Sydney 132/11kV Zone (SJ-05969 & SI-05341)	May-2015	Committed	3,684	3,455				7,139						7,139
ARA_05.1.0010	North Sydney New 132KV Feeders	May-2015	Committed	100					100						100
ARA_05.1.0016	Lindfield STSS 132kV RMCB (SJ-06106)	Jun-2015	Committed	5,367	296				5,663						5,663
ARA_05.1.0026	132kV Feeders 925/3 & 9E4/3 Replacement (SJ-05970)	Oct-2015	Committed	13,800	8,019				21,819						21,819
ARA_05.1.0030	New North Sydney 11kV LTs (SM-02398 & SM-03387)	Jan-2015	Committed	450					450						450
ARA_05.1.0034A	33kV Feeder 554 Uprate	Sep-2022	Preferred						0		23	6,059	2,162		8,244
Upper North Shore				6,984	5,200	7,131	0	0	19,316	0	313	7,985	19,286	2,773	49,672
ARA_05.2.0004	Pymble 11kV SG Replacement	Jun-2023	Preferred						0		218	5,466	8,712	1,109	15,504
ARA_05.2.0006	Kuringai 33kV SG Replacement (SJ-06016)	Apr-2018	Committed	6,784	5,200	7,131			19,116						19,116
ARA_05.2.0008	St Ives 11kV Vacuum CB	Dec-2014	Committed	200					200						200
ARA_05.2.0032A	St Ives 11kV SG Replacement	Jun-2023	Preferred						0		95	2,519	10,574	1,664	14,852
Carlingford				8,096	3,200	1,200	1,183	0	13,679	0	0	0	0	0	13,679
ARA_05.3.0016C	New Top Ryde 132/11kV Zone (SJ-05070)	Dec-2014	Committed	155					155						155
ARA_05.3.0018	North Ryde Decommissioning (SI-09920)	Mar-2015	Committed	180					180						180
ARA_05.3.0019	Hunters Hill Refurbishment (SJ-00043 & SJ-04784)	Jun-2017	Committed	6,978	3,200	1,200	1,183		12,561						12,561
ARA_05.3.0028	Ryde STSS Decommissioning (SI-09922)	Sep-2014	Committed	488					488						488
ARA_05.3.0030	Epping Zone 11KV SG Replacement	Oct-2014	Committed	295					295						295
Terrey Hills - Pittwater				5,789	6,720	3,895	1,146	1,122	18,672	17,760	988	0	3,518	8,405	49,343
ARA_05.4.0008	Careel Bay 11kV SG Replacement	Jun-2016	Committed	4,764	2,720	151			7,636						7,636
ARA_05.4.0009	Newport Zone CLC Uprating (SI-10045)	Jun-2015	Committed	25					25						25
ARA_05.4.0012	33kV Feeder S42 Uprate	Mar-2020	Preferred					913	913	6,564					7,477
ARA_05.4.0024A	33kV Feeder S40 Replacement (UG section Warriewood end)	Mar-2024	Preferred						0				190	2,127	2,317
ARA_05.4.0025A	33kV Feeder S21 Replacement (UG section 3.17km)	Jul-2020	Preferred					208	208	11,196	988				12,392
ARA_05.4.0031A	33kV Feeder S40 Replacement (UG section Terrey Hills end)	Mar-2024	Preferred						0				648	5,310	5,959
ARA_05.4.0034A	Mona Vale 11kV SG Replacement (Q13756)	Jun-2016	DB Issued	1,000	4,000	3,214			8,214						8,214
ARA_05.4.0036A	Newport 11kV SG Replacement	Sep-2023	Preferred						0				2,679	969	3,648
ARA_05.4.0037A	Narrabeen 33kV Busbar Retirement	Sep-2017	Preferred		0	529	1,146		1,676						1,676
Manly - Warringah				499	0	0	0	0	499	336	17,881	1,354	0	0	20,069
ARA_05.5.0013	Dee Why West 11kV VCB (SI-10040)	Dec-2014	Committed	189					189						189
ARA_05.5.0018	North Head 33kV SG Refurbishment (SJ-05979)	Dec-2014	Committed	200					200						200
ARA_05.5.0021	New Balgowlah North Zone (SJ-05229 & SJ-00115)	Dec-2014	Committed	60					60						60
ARA_05.5.0035A	Brookvale, Belrose, Dee Why West Thermal Relays	Dec-2014	Committed	50					50						50
ARA_05.5.0046A	33kV UG Section Replacement (S18)	Jul-2021	Preferred						0	336	17,881	1,354			19,571
NorthWest				150	700	650	0	0	1,500	0	1,107	628	0	0	3,235
ARA_05.6.0008A	Connect Mt Colah to 132kV feeder 250	Sep-2021	Preferred						0		1,107	628			1,735
ARA_05.6.0009A	Sydney North BSP 132kV feeder protection upgrade	Sep-2016	DB Issued	150	700	650			1,500						1,500

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				* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
South Region															
St George				4,510	13,600	9,500	39,658	8,948	76,216	3,999	14,153	8	4,821	17,593	116,791
ARA_04.1.0004	Carlton Zone Decommissioning (SJ-04035)	Oct-2014	Committed	700					700						700
ARA_04.1.0005	Riverwood ZS 11kV SG replacement	Dec-2023	Preferred						0				4,821	17,593	22,414
ARA_04.1.0006	New Hurstville 132/11kV Zone (SJ-05277 & SM-06472)	Jun-2015	Committed	1,800					1,800						1,800
ARA_04.1.0007	Blakehurst Decom 11kV LTs & 33kV Feeder Rearrangement	Jun-2021	Preferred						0	3,999	14,153	8			18,161
ARA_04.1.0008	New Rockdale 132/11kV Zone	Dec-2018	Committed	2,000	13,600	9,500	5,447		30,547						30,547
ARA_04.1.0010	Arncliffe Retirement & 11kV LTs	Dec-2018	Preferred				6,775	8,827	15,602						15,602
ARA_04.1.0029	Peakhurst STS Refurbishment	Jun-2018	Preferred				27,436	121	27,557						27,557
ARA_04.1.0003C	New Kogarah 132/11kV Zone with 132kV Feeders & 11kV LTs	Jul-2014	Committed	10					10						10
Sutherland				19,897	7,527	414	0	0	27,838	0	3,200	13,692	0	1,403	46,132
ARA_04.2.0007	New Kurnell 132/11kV Zone (SI-04526 & SM-13357)	Mar-2015	Committed	3,811	738				4,549						4,549
ARA_04.2.0011	Kurnell STS 33kV Busbar Retirement (SI-09895)	Jun-2015	DB Issued	616					616						616
ARA_04.2.0013	Engadine New 132kV Feeders (SI-05747)	Nov-2014	Committed	5,698					5,698						5,698
ARA_04.2.0015	Engadine 132/11kV Zone Conversion	Mar-2015	Committed	806					806						806
ARA_04.2.0024	Port Hacking Refurbishment (SJ-06039)	Feb-2015	Committed	5,849	6,000	414			12,263						12,263
ARA_04.2.0029	Jannali Refurbishment (SJ-04900)	Sep-2015	Committed	3,116	790				3,906						3,906
ARA_04.2.0030	Miranda ZS 11kV SG replacement	Dec-2021	Preferred						0		3,200	13,692			16,892
ARA_04.2.0037A	Kirrawee 11kV SG Replacement	Dec-2024	Preferred						0					1,403	1,403
Canterbury - Bankstown				16,943	23,691	45,806	53,913	40,780	181,132	0	3,763	7,096	31,449	4,360	227,800
ARA_04.3A.0001	Strathfield South 132kV connections	Mar-2017	DB Issued	250	1,000	3,000	750		5,000						5,000
ARA_04.3A.0005	New Leightonfield 33/11kV Zone	Jun-2019	Preferred			275	7,076	12,539	19,890						19,890
ARA_04.3A.0007	Strathfield South 132/11kV ZS & Decomm Enfield 33/11kV ZS	Mar-2017	DB Issued	500	4,000	12,000	10,000	3,000	29,500						29,500
ARA_04.3A.0008	Canterbury STS Refurbishment (SJ-05740)	Dec-2014	Committed	4,200	3,088	1,688			8,976						8,976
ARA_04.3A.0012	New Potts Hill 132/11kV Zone (SJ-05415 & SJ-05570)	Oct-2014	Committed	303					303						303
ARA_04.3A.0014	New Greenacre Park 132/11kV Zone with 11kV LTs and Decom	Dec-2016	DB Issued	500	4,500	12,000	10,000	3,000	30,000						30,000
ARA_04.3A.0019	Dulwich Hill 33kV Zone + Decom (SJ-06064 & SI-00157)	Jun-2017	DB Issued	300	200	5,368	11,000	6,975	23,843						23,843
ARA_04.3A.0021	Dulwich Hill 33kV Feeder Replacement (SJ-06070 & SI-00190)	Jun-2017	DB Issued	50	300	6,424	12,000	13,367	32,141						32,141
ARA_04.3A.0033A	132kV Feeders 291 and 292 Replacement (RS-00410)	Sep-2017	DB Issued		81		87		167						167
ARA_04.3A.0034A	Campsie 11kV SG Replacement	Sep-2023	Preferred						0		3,763	5,164	11,350	2,781	23,057
ARA_04.3B.0002	Padstow Decommissioning (SI-09938)	Jul-2014	Committed	7					7						7
ARA_04.3B.0003	Bankstown STS 33kV SG Replacement (SJ-06056)	Feb-2015	Committed	3,500	287				3,787						3,787
ARA_04.3B.0008	Milperra 11kV SG Replacement	Jun-2023	Preferred						0				10,327	545	10,871
ARA_04.3B.0010	New Bankstown 132/11kV Zone (SJ-04676 & SJ-05644)	Jul-2014	Committed	35					35						35
ARA_04.3B.0011	Punchbowl 11kV SG Replacement (SJ-06063)	Apr-2018	DB Issued	1,600	7,000	5,050	3,000	1,900	18,550						18,550
ARA_04.3B.0012	Punchbowl 33kV Feeder Replacement (SJ-06043)	Jul-2015	Committed	185					185						185
ARA_04.3B.0014	Bass Hill 11kV SG Replacement (Q13719)	Nov-2017	Committed	5,514	3,235	0			8,749						8,749
ARA_04.3B.0038A	Revesby 11kV SG Replacement	Jun-2023	Preferred						0			1,932	9,772	1,035	12,739

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		Status	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
South Region														
Inner West			37,654	35,708	44,427	23,079	930	141,799	11,245	17,129	14,120	0	0	184,293
ARA_04.4.A.0011	Leichhardt 132kV Conversion (SJ-05946)	Mar-2018	Committed	1,000	1,000	190	0	2,190						2,190
ARA_04.4.A.0012	New Croydon 132/11kV Zone (SJ-05942)	Dec-2016	Committed	1,100	3,900	1,504		6,504						6,504
ARA_04.4.A.0016	132kV Feeder 900 Replacement (SI-05767)	Apr-2016	Committed	18,026	25,900	842		44,768						44,768
ARA_04.4.B.0002	Concord ZS 11kV SG replacement	Dec-2021	Preferred					0		2,572	14,120			16,692
ARA_04.4.B.0003	Burwood 11kV Capacitors (SI-10047)	Jul-2014	Committed	10				10						10
ARA_04.4.B.0004	Burwood 11kV VCB (SI-10009)	Jul-2014	Committed	400				400						400
ARA_04.4.B.0007	Strathfield STS Retirement	Dec-2017	Preferred		18	7,803	2,689	10,511						10,511
ARA_04.4.B.0022A	132kV feeders 923/2 and 924/2 replacement	Dec-2020	Preferred					0	8,385	11,158				19,543
ARA_04.4.C.0005	New Olympic Park 132/11kV Zone (SJ-05947 & SJ-06147)	May-2016	Committed	16,767	3,520	488		20,775						20,775
ARA_04.4.C.0008	Auburn & Lidcombe Zn 33kV Feeder Replacement	Jun-2017	DB Issued	100	370	30,920	2,130	33,520						33,520
ARA_04.4.C.0009	Lidcombe Zn Refurbishment	Jun-2018	DB Issued	250	1,000	2,680	18,260	930	23,120					23,120
ARA_04.4.C.0011	Retirement of Flemington compound filled 11kV switchgear	Dec-2019	Preferred					0	120					120
ARA_04.4.C.0018	Flemington to SOPA 11kV LT and 11kV SG Decommissioning	Sep-2020	Preferred					0	2,740	3,399				6,139

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	Status		* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
Lower Hunter Region														
Newcastle CBD			11,792	17,537	2,318	2,000	4,878	38,525	0	0	0	0	0	38,525
ARA_07.1.0004	New Tighes Hill 33/11kV Zone (SJ-05934 & SJ-00025)	Nov-2016	Committed	4,798	11,500	1,238		17,536						17,536
ARA_07.1.0006	New Broadmeadows 132/11kV Zone (SJ-04866 & SJ-00008)	Jul-2015	Committed	261				261						261
ARA_07.1.0008	Newcastle CBD Oil Cable Replacement (Feeder 770)	Jul-2015	Committed	200	397			597						597
ARA_07.1.0016	Kotara ZS refurbishment and 33kV Feeder 767 replacement	Nov-2018	DB Issued	0		1,000	2,000	4,878						7,878
ARA_07.1.0002C	Adamstown Zone Retirement	Jul-2014	Committed	969	635			1,604						1,604
ARA_07.1.0033A	City Main Building Decommissioning (SJ-00118)	Jul-2015	Committed	1,368	1,382			2,750						2,750
ARA_07.1.0037A	Newcastle CBD Protection Upgrade	Jul-2014	Committed	100				100						100
ARA_01.0027	New Lambton 11kV SG Replacement	Dec-2015	Committed	4,096	3,623	80		7,799						7,799
Newcastle Ports			2,148	11,000	8,800	0	0	21,948	0	0	0	0	0	21,948
ARA_07.2.0004	Waratah Busbar Refurbishment (SJ-05975)	Jan-2016	DB Issued	1,000	11,000	8,800		20,800						20,800
ARA_07.2.0006	Retire 33kV Oil Cables to Tubemakers (SJ-05937)	Sep-2014	Committed	290				290						290
ARA_07.2.0007	Shortland, Mayfield, Tubemakers Zn Decommission (SI-09906)	Jun-2015	Committed	250				250						250
ARA_07.2.0007C	New Kooragang 132/33kV Zone (SJ-04087)	Jul-2014	Committed	608				608						608
Newcastle Western Corridor			250	365	8,206	1,986	5	10,812	0	0	0	2,986	11,613	25,412
ARA_07.3.0006	Cardiff ZS 11kV SG replacement	Jun-2024	Preferred					0				2,986	11,613	14,600
ARA_07.3.0013A	Edgeworth 11kV SG Replacement (Q13683)	Nov-2017	Preferred	250	365	8,206	1,986	5	10,812					10,812
West Lake Macquarie			8,720	19,476	11,387	0	0	39,583	0	0	1,030	819	0	41,433
ARA_07.4.0002	Awaba 33kV Feeders Augmentation	Mar-2017	DB Issued	275	4,600	3,500		8,375						8,375
ARA_07.4.0004	Awaba STS 132kV & 33kV Busbar Retirement (SI-10056)	Mar-2017	DB Issued			372		372						372
ARA_07.4.0005	Myuna & Coorabong Mines 11kV SG Replacement	Dec-2015	DB Issued	200	2,500	4,000		6,700						6,700
ARA_07.4.0007	New Toronto 132/11kV Zone (SO-06009)	Apr-2016	Committed	8,060	12,376	3,515		23,951						23,951
ARA_07.4.0008	Morriset Additional 11kV SG	Nov-2022	Preferred					0			1,030	819		1,850
ARA_07.4.0010	New Rathmines 132/11kV Zone (SJ-03278 & SJ-00039)	Jul-2014	Committed	185				185						185
North East Lake Macquarie			2,695	3,300	2,000	0	0	7,995	2,661	9,959	864	0	0	21,479
ARA_07.5.0001	33kV Feeder 760 & 766 Replacement (SJ-05976 & SJ-10011)	Jul-2015	DB Issued	2,350	2,500	2,000		6,850						6,850
ARA_07.5.0005	Charlestown 132/11kV Zone (SJ-05319)	Jul-2015	Committed	345	800			1,145						1,145
ARA_07.5.0018	Swansea ZS 11kV SG replacement	Jun-2021	Preferred					0	2,661	9,959	864			13,484
Maitland			15,126	5,350	0	0	0	20,476	133	4,411	2,019	3,459	23,184	53,582
ARA_07.6.0008	New Brandy Hill Zn and 11kV Feeders	Sep-2014	Committed	881				881						881
ARA_07.6.0009	New Maitland 33/11kV (SJ-05126 & SJ-00051)	Dec-2014	Committed	675				675						675
ARA_07.6.0014	Tarro ZS 11kV SG replacement	Sep-2024	Preferred					0			1,920	2,552	10,483	14,955
ARA_07.6.0020	Telarah Retirement with 11kV LTs	Jun-2020	Preferred					0	133	4,411				4,543
ARA_07.6.0022	New Metford 33kV Zone, Retire East Maitland & 11kV LTs	Mar-2015	Committed	13,470	5,350			18,820						18,820
ARA_07.6.0027	Uprate feeder KU13 Stage 1	Nov-2024	Preferred					0				907	12,701	13,608
ARA_07.6.0037A	Essential Energy Temp 33kV Supply (SJ-00177)	Dec-2014	DB Issued	100				100						100

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				* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
Lower Hunter Region															
Cessnock				4,000	4,875	9,240	2,300	0	20,415	0	0	0	0	0	20,415
ARA_07.7.0005	New Paxton 33/11kV Zone (SJ-06023)	Jun-2015	Committed	3,000	1,483				4,483						4,483
ARA_07.7.0008	New Cessnock 33/11kV Zone (SJ-06026)	Jul-2016	Committed	1,000	3,000	9,240	2,300		15,540						15,540
ARA_07.7.0020	Paxton Retirement with 11kV LTs	Jun-2015	DB Issued	0	392				392						392
Port Stephens				8,355	500	0	0	167	9,023	4,165	6,603	821	3,657	1,017	25,286
ARA_07.8.0003	Tanilba Bay Uprate (SJ-05537)	Dec-2014	Committed	400					400						400
ARA_07.8.0005	New Raymond Terrance 33/11KV Zn	Nov-2013	Committed	1,275					1,275						1,275
ARA_07.8.0013	Stockton 11kV SG Replacement (Q13645)	Jun-2021	Preferred					167	167	4,165	6,603	725			11,660
ARA_07.8.0026	New Tomaree 33/11KV Zn	Nov-2012	Committed	680	500				1,180						1,180
ARA_07.8.0032A	New Medowie 33/11kV Zone (SJ-00041)	Apr-2015	Committed	6,000					6,000						6,000
ARA_01.0025	Nelson Bay 11kV SG Replacement	Nov-2024	Preferred						0			96	3,657	1,017	4,770
Upper Hunter Region															
Singleton				6,800	12,250	3,745	0	0	22,795	0	0	0	0	0	22,795
ARA_08.1.0010	Newdell 11kV SG Replacement	Mar-2015	Committed	4,500	2,750				7,250						7,250
ARA_08.1.0012	Branxton 11kV SG Replacement	Nov-2015	DB Issued	1,300	5,000	1,560			7,860						7,860
ARA_08.1.0014	Singleton 11kV SG Replacement	Jul-2016	DB Issued	1,000	4,500	2,185			7,685						7,685
Upper Hunter				2,955	3,158	14,754	13,256	9,140	43,263	583	0	0	0	0	43,846
ARA_08.2.0012	Denman 11kV SG Replacement	Jun-2019	Preferred	250		169	4,269	6,713	11,401	583					11,984
ARA_08.2.0017	Mitchell Line to Muswellbrook 66kV Feeders (SJ-05587)	Jun-2014	Committed	1,705					1,705						1,705
ARA_08.2.0027	Muswellbrook STS Retirement (SI-09913)	Dec-2018	Committed					250	250						250
ARA_08.2.0030	New Muswellbrook 132/11kV Zone	Oct-2018	Committed	1,000	3,000	10,700	3,000	1,399	19,099						19,099
ARA_08.2.0038A	Mitchell Line 11kV SG Replacement	Jun-2018	Preferred		158	3,886	5,987	777	10,808						10,808

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Values in nominal dollars

			Fiscal year	2015	2016	2017	2018	2019	Total 15/19	2020	2021	2022	2023	2024	Total 15/24
BPC Project		Need Date	Status	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
Transmission															
Transmission Inner Metro				15,260	25,265	42,841	8,489	22,474	114,329	54,326	157,139	162,398	99,835	15,616	603,644
ARA_01.1.0006	Bunnerong Nth 132kV Capacitor & Tx1 Replacement	Sep-2014	Committed	728					728						728
ARA_01.1.0008	Rookwood Rd BSP 132kV Connections (SJ-05197)	Nov-2014	Committed	2,540					2,540						2,540
ARA_01.1.0012	132kV Feeder 90T retirement	Sep-2022	Preferred						0				168		168
ARA_01.1.0017	Reconnect 132kV Feeders into Riley St BSP	Sep-2024	Preferred						0					7	7
ARA_01.1.0018	132kV Feeders 9SA, 9SB/1 & 9S2 retirement	Sep-2024	Preferred						0				228		228
ARA_01.1.0024	132kV Feeders 92FA/B and 90XA/B Replacement (SJ-6044)	Sep-2016	DB Issued	350	5,500	27,400	1,700		34,950						34,950
ARA_01.1.0026	Decommissioning of 928/3, 929/1 & 91A/2	Sep-2018	Preferred					760	760						760
ARA_01.1.0027	132kV Feeders 92JA/B and 92GA/B Replacement (SJ-06155)	Sep-2019	DB Issued	250	8,200	1,250	3,300	17,000	30,000	2,100					32,100
ARA_01.1.0031A	Beaconsfield West 132kV Busbar Connections (SJ-06136)	May-2015	Committed	5,464	2,950	522			8,937						8,937
ARA_01.1.0028A	132kV feeders 9SA & 9SB replacement	Sep-2023	Preferred						0	106	3,876	47,173	74,928	9,564	135,648
ARA_01.1.0029A	Decommissioning of 91B/2, 91X & 91Y	Sep-2022	Preferred						0				2,109		2,109
ARA_01.1.0035A	New 132kV Feeder from BFW to Belmore Park	Sep-2016	DB Issued	200	2,000	12,000	2,900		17,100						17,100
ARA_01.1.0037A	Installation of Wholesale Metering Points	Nov-2014	DB Issued	800					800						800
ARA_01.1.0038A	132kV Feeders Lane Cove to Pymont	Sep-2022	Preferred		115	952	589	4,289	5,946	32,444	142,430	115,030	22,401	1,554	319,806
ARA_01.1.0039A	132kV Capacitor Installation at Mason Park STS	Sep-2024	Preferred						0					1,620	1,620
ARA_01.1.0107	Extend Service Life of 132kV Feeder 91M/1	Jun-2017	Preferred			717			717						717
ARA_01.1.0110	132kV Feeders 91L, 91M/1 and 91M/3 Replacement	Jul-2014	Committed	4,768	6,500				11,268						11,268
ARA_01.1.0126	New 132kV 9S4 Feeder from Haymarket to BFW (SJ-05254)	Jul-2014	Committed	60					60						60
ARA_01.1.0128	132kV Feeder 202 Replacement	Dec-2020	Preferred					425	425	19,676	10,833	194			31,128
ARA_01.1.0129	132kV Feeders 203 and 204 replacement	Dec-2025	Preferred						0					2,871	2,871
ARA_01.1.0004	Bunnerong - Kurnell 132kV Feeders 908 and 909 Replacement	Jul-2014	Committed	100					100						100
Transmission Central Coast				359					359						359
ARA_01.2.0018A	Gosford STS Refurbishment 132kV, 66kV & 33kV	Dec-2014	Committed	359					359						359
Transmission Lower Hunter				2,042					2,042	5,819	8,208				16,068
ARA_01.4.0009	Tomago STS New 132kV CB (SJ-10034)	Jul-2014	Committed	117					117						117
ARA_01.4.0016	132kV Feeder 961 replacement	Dec-2020	Preferred						0	5,819	8,208				14,027
ARA_01.4.0029A	Refurbishment 132kV SCFF cable 9N9 & 9N8	Jun-2015	Committed	1,925					1,925						1,925

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Values in nominal dollars

BPC Project		Need Date	Fiscal year	2015	2016	2017	2018	2019	Total 15/19	2020	2021	2022	2023	2024	Total 15/24
			Status	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000	* 1,000
Conditional Projects															
Conditional Projects				128	2,594	2,418	6,397	4,550	16,087	3,989	2,808	10,607	2,812	0	36,303
ARA_01.0010	80% 33kV supply from Pymont STS to Global Switch	Dec-2016	Preferred		326	943			1,268						1,268
ARA_01.0021	10% Newdell STS (based on Doyalson STS)	Jun-2019	Preferred			135	1,758	1,769	3,662	42					3,704
ARA_01.0029A	100% 33kV supply from Alexandria STS to Equinix	Jun-2018	Preferred				563	20	583						583
ARA_01.0033A	10% (New Zone for Warnervale Town Centre)	Sep-2020	Preferred				56	864	920	1,942	223				3,086
ARA_01.0038A	100% Pymont to City North 33kV Feeders Replacement	Sep-2022	Preferred						0	14	1,941	10,607	2,812		15,374
ARA_01.0039A	90% 66kV supply Mt Pleasant mine	Sep-2015	Preferred	51	267				318						318
ARA_01.0042A	20% RAAF 33kV Switching Station and Feeder Upgrade	Nov-2017	Preferred			681	1,165		1,847						1,847
ARA_01.0045A	100% 132kV Supply to NWRL	Aug-2018	Preferred				145	114	259						259
ARA_01.0048A	10% Supply to Heathcote Ridge development	Sep-2016	Preferred		560	157	24	15	757						757
ARA_01.0090	City Light Rail (expected application)	Jun-2019	Preferred					495	495	7					502
ARA_01.0091	30% 66kV supply to Warkworth mine expansion	Sep-2017	Preferred	77	19	380	147		623	1,984	643				3,251
ARA_01.0092	75% New Mandalong South mine connection	Mar-2018	Preferred			43	2,506		2,549						2,549
ARA_01.0093	80% 66kV supply to Bulga coal from Mt Thorley ZS	Jul-2016	Preferred		1,423	79			1,502						1,502
ARA_01.0094	10% 11kV supply to Newcastle University from Jesmond ZS	Sep-2018	Preferred				32	39	71						71
ARA_01.0097	West Connex (expected application)	Dec-2018	Preferred					1,235	1,235						1,235
Total Area Plans				298,756	344,031	326,128	234,889	166,847	1,370,652	184,747	331,662	304,973	227,087	101,248	2,520,368

For the assigned likelihood and the rationale for the chosen percentage for the conditional projects, refer to the Conditional Projects report (Ref. 3) for details.

Appendix A: Demand Management Expenditure

A Demand Management (DM) screening assessment has been applied to all capacity driven Area Plan projects, to identify potential for deferral of network capital projects. A reference cost of 300\$/kVA has been used to compare non-network solutions against network investments. Of the very few not-committed projects that are capacity driven, the screening test identified that for one project it is cost effective to implement non-network solutions. This project is included in the table below.

DM Expenditure Report

Values in nominal dollars

		Fiscal Year	2015	2016	2017	2018	2019	Total 15/19	2020	2021	2022	2023	2024	Total 15/24
BPC Project		Date												
Inner West								0					297,551	297,551
PR_4.4.A.0022A	11kV LT (14MVA) Drummoyne to Croydon ZS	Mar-2024						0					297,551	
Total DM Expenditure (Area Plan Projects)			0	0	0	0	0	0	0	0	0	0	297,551	297,551