30 January 2023

Kris Funston
Executive General Manager
Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601

Sent via email: exportservicesreview@aer.gov.au

Dear Mr Kris Funston

Submission on Incentivising and Measuring Export Service Performance Draft Report

SA Power Networks welcomes the opportunity to comment on the Australian Energy Regulator's (**AER**) Draft Report on Incentivising and Measuring Export Service Performance (**Draft Report**).[1]

SA Power Networks has, for some years now had significant concerns[2] that the current benchmarking methodology inadequately reflects the services we are providing customers. Customers need to have confidence that the benchmarking reports published by the AER are properly reflective of the services that distributors provide their customers. The current methodology was developed when the connection of customer energy resources (**CER**) was not a material aspect of services provided by distributors and needs urgent review.

The Access, Pricing and Incentives Rule change determined that the export service should be recognised as an additional distribution service provided to customers. However, currently there is no recognition of the outputs of the export service in benchmarking and, indeed, provision of the service is detrimental to benchmarking by reducing traditional outputs and increasing input costs.

The connection of CER to our network from 2009 onwards continues to grow dramatically. More than one in three South Australian homes now have roof-top solar and more and larger-sized residential and commercial systems are connecting to our network each year. This is anticipated to continue as customers seek to connect more CER to reduce their energy costs and contribute to decarbonisation. Over the longer term, with the increasing take-up of electric vehicles, vehicle to grid could drive an additional wave of demand for the export service.

We have, through our best endeavours, strived to integrate customers' CER as efficiently as possible. For example, we have and continue to invest in IT systems and more sophisticated modelling. We continue to obtain better data and information both through installing voltage monitoring devices on our network and seeking additional data from meter data providers and other sources. This data has helped us to determine which investments are necessary to provide the export service efficiently to integrate CER and unlock the value it provides customers. However, we are at a stage where segments of the network will increasingly require further

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1 AER, *Draft Report: Incentivising and measuring export service performance*, November 2022

2 Further information on the feedback SA Power Networks has received from customers can be found on our engagement website. Accessible via: [https://www.talkingpower.com.au/energy-transition].

investment due to the exhaustion of our network's intrinsic hosting capacity across various segments of the network.

The current benchmarking methodology substantially captures inputs: physical capital and operating costs, but does not recognise any output measures associated with the connection of CER and its utilisation of the network. Indeed, connecting all this CER has served to reduce our current benchmarking outputs such as maximum demand and energy throughput. These outcomes contribute to an apparent decline in our productivity performance as published by the AER which is at best misrepresentative to customers of our actual performance and at worst acts as a disincentive to distributors investing to providing further export services. We expect the materiality of this disincentive to increase going forward, as more export related expenditure becomes necessary as networks' intrinsic hosting capacity is exhausted.

Consistent with our submission to the AER's Issues Paper, we consider it important that this review urgently address gaps in how the current regulatory framework recognise distributors' provision of export services to customers so that:

- distributors with high levels of distributed energy penetration, incurring material costs and delivering material value to customers via the provision of export services, are not disadvantaged relative to their industry peers via current approaches to benchmarking;
- there is a greater level of certainty as to the level of service that distributors should be guided to achieve for customers over time; and
- customers can have confidence that the metrics included and the consequent benchmarking outcomes reported are reflective of all the services that distributors provide to customers.

Our key views in this submission are:

- we agree that no change is needed to the Distribution Reliability Measure Guidelines (**DRMG**) at this point in time, but anticipate it will need to be examined if / when the service target performance incentive scheme (**STPIS**) is eventually extended to include export service performance;
- an additional small-scale incentive scheme (**SSIS**) should be created to enable networks to propose bespoke incentive schemes for export services as opposed to amending the existing customer service incentive scheme (**CSIS**) – providing greater opportunity for incentives to drive appropriate outcomes in service provision;
- a fulsome review of the potential for a STPIS equivalent incentive for export services should be completed by 2027 subject to current data limitations being addressed, and subject to learnings being available via the application of any bespoke incentives;
- the current allowances under the Demand Management Innovation Allowance Mechanism (**DMIAM**) should be increased to recognise the broader need for innovation in service provision – both in the provision of consumption services which is undergoing significant change via increased electrification, and the expansion of the distributor's role in enabling CER; and
- a fulsome review of benchmarking metrics and approaches should urgently commence with a view to completion in time for the 2024 benchmarking reports to ensure that distributors with high CER penetration do not continue to be disadvantaged, noting:
    - current approaches to benchmarking are already negatively impacting on some networks such as SA Power Networks who are at the forefront of the distributed energy transition, even at relatively modest levels of network hosting capacity investment;

- these impacts will increase with higher renewables penetration and increased network investment; and
- networks such as ours are increasingly having our comparative benchmarking performance understated given that existing benchmarking metrics do not adequately recognise the outputs being produced by our networks in enabling export service provision.

Further detail is contained in Appendix A, including our responses to the questions posed in the AER's draft report.

If you have any queries or require further information in relation to our submission, please contact Luke Cowen on [redacted] or [redacted]

Yours sincerely

[redacted]

Mark Vincent

General Manager Strategy and Transformation

Appendix A: Response to draft paper questions
Incentive Schemes

Question 1: Do you agree that no amendments to the Distribution Reliability Measure Guidelines (DRMG) are necessary?

We support the AER not amending the DRMG at this stage. We anticipate an amendment will be required if and when export service performance measures are extended to the STPIS to account for new export service performance metrics.

Question 2: Do you agree with our proposed timeline for a future review of incentive arrangements for export services? What factors may prompt an earlier or later review?

We support the AER commencing a future review of incentive arrangements for export service performance by 2027. By this time, we expect that the impact of export service provision on networks will be better understood as:

- data availability will likely have improved across networks via the accelerated smart meter rollout and increase in the number of Dynamic Operating Envelope (**DOE**) compliant inverters;
- the effects of export tariffs and flexible export limits will be apparent; and
- historical performance data will be available via the AER's annual export performance reports.

We also expect the costs associated with export service enablement would have broadly increased across networks to a level which warrants the need to reconsider integrating exports in to the STPIS and potential role of the role of Guaranteed Service Level **(GSL)** payments.

Question 3: Do you agree that developing a new small scale incentive scheme is the best way to facilitate DNSPs proposing bespoke incentives?

The enablement of bespoke schemes should not come at the expense of potentially crowding out customer service incentive schemes, which could occur if bespoke export schemes are enabled under the Customer Service Incentive Scheme (**CSIS**). This is due to the limitation of rewards and penalties under the scheme to one per cent of a distributor's annual revenue requirement (**ARR**).

For example, a distributor may be forced to consider a trade-off between a customer service incentive scheme and bespoke export service incentive scheme in order to allocate the appropriate ARR at risk commensurate with customer demand for the incentivised service outcome.

We therefore suggest an additional SSIS for bespoke export services be developed. Such a scheme could be similar to the CSIS, and be developed with a focus on undertaking engagement with, and obtaining support from, customers in guiding:

- scheme design to ensure that incentives measure the performance outcomes that customers value; and
- that the cap and incentive rates are appropriate (commensurate with customer demand) and can incentivise the improvement of the performance measures that customers value.

We also consider the use of the SSIS should only be a transitory mechanism to implement bespoke incentive schemes for exports. As penetration of CER increases, the costs associated with, and value customers derive from the service, will reach a point where the rewards or penalties permitted under the SSIS may be inadequate to drive material investment and changes in service provision – warranting re-consideration of a more fulsome expansion of the current STPIS.

Question 4: What level of revenue at risk (rewards and penalties) is appropriate for a small-scale incentive scheme for export services?

For incentives to drive outcomes that customers value, the revenue at risk should be commensurate with the customer value for the aspect of service performance measured. Failing to allocate the appropriate revenue at risk creates the following risks of:

- too little revenue at risk will incentivise a distributor to seek cost reductions at the expense of service performance; or
- too much revenue at risk will incentivise a network to increase service performance beyond what customers are willing to pay for the service.

The appropriate amount of ARR at risk for export services will likely need to vary across distributors on the basis of the customer demand for the measured export service performance metric relative to the distributor's ARR.

Question 5: Do you consider that the benefits associated with a small-scale incentive scheme for export services will outweigh the costs of measuring performance and administering the scheme?

We expect the data requirements, and associated administration costs, will vary dependent upon the measured performance metric used and distributors' data capabilities. The flexibility that comes with distributors being able to design their own customised incentives, will ensure that they can take into account the likely implementation and monitoring costs when designing these schemes to ensure that they drive overall net benefits to customers.

Question 6: Are there any other factors we should consider when developing a new small-scale incentive scheme?

We consider the current factors listed in relation to the SSIS under clause 6.6.4(b) of the NER are appropriate considerations for the design of bespoke incentives.

Question 7: Do you agree that no amendments to the DMIAM and DMIS are necessary?

We disagree. In our view, the funding available through the DMIAM is now insufficient to recognise distributors' increased service provision role in relation to export services and the integration of CER more broadly. The challenges faced by distributors are much more complex, varied and dynamic than when the DMIAM was introduced, and the need and opportunity for innovation is much greater, and this needs to be recognised by increasing the available funding.

As a distributor who has consistently utilised all of its DMIAM funding we expect that:

- there will be a continued need for innovation in respect of our consumption services, particularly as the demands on the network evolve such as via increased electrification which we expect may dominate our likely innovation trials in coming years; and
- the expansion of our role to the provision of export services will require new innovation and trials as we interact with an increasing and changing mix of CER including community batteries, smart appliances and electric vehicles and as we look to evolve the level of sophistication relating to how we interact with customers such as via DOEs. Through our consumer engagement program in respect of our 2025-30 Regulatory Proposal, customers have also advocated strongly for us to explore potential co-funding models of community energy solutions, which alone would be of sufficient materiality to exhaust the current DMIAM funds.[3]

[3] Further information on the feedback that SA Power Networks has received from its customers can be found on our consumer engagement website. Accessible on: [https://www.talkingpower.com.au/energy-transition].

Performance reporting

Question 8: Is there any data we are missing that should be included in our key metrics?

None that we have identified to date.

Question 9: Do you foresee any challenges in collecting the new data for the key metrics? Can you identify any additional costs associated with data collection?

There are some service metrics which will need to be modelled for customers that do not have DOE capable inverters. The metrics which require estimation are:

- duration of full export access;
- duration of no export access;
- total utilised CER generation; and
- customers receiving over-voltage.

In addition, the number of AS4777.2 compliant inverters is not known due to widespread non-compliance in installation practices. This can be estimated using data analytics, but accuracy is limited by the limited availability of voltage data from smart meters outside Victoria.

Question 10: Do you agree with the proposed base year for 2020-21 for most metrics and 2022-23 for metrics where data may be less available? Please suggest an achievable timeframe for metrics where the proposed reporting date is not feasible.

The AER should consider a base year of 2021-22 as this is when most metrics are available with a higher degree of certainty.

Tables 1-3 below details the metrics contained in the AER's strawman information request and when SA Power Networks initially expect this data to be available. Note the dates contained in these tables are based on our preliminary assessment of availability, which may be subject to change following more detailed analysis.

Table 1: Export Services Metrics

Metric	Availability
11.8.1 – Opex for the provision of export services	2020-21
11.8.2 – Capex for provision of export services	2020-21
11.8.3 – Export volumes – net metered volume of energy exported (MWh) by feeder	2021-22
11.8.4 – Export customer numbers (by feeder)	2021-22
11.8.5 – Export customer numbers (by CER type)	2021-22
11.8.6 – Exporting customer capacity by customer type (Customer Class)	2021-22
11.8.7 – Total exporting customer capacity in the network by feeder classification	2021-22

Table 2: Quality of Export services Metrics

Metric	Availability
11.9.1.1 – Complaints relating to export services (by customer type)	2020-21
11.9.1.2 – Complaints relating to export services (by feeder)	2020-21
11.9.2.1 – Customers receiving over-voltage (by customer type)	2021-22
11.9.2.2 – Customers receiving over-voltage (by feeder type)	2021-22

Metric	Availability
11.9.3.1 – Customers requesting export capacity (by customer type)	2020-21
11.9.3.2 – Customers requesting export capacity (by feeder type)	2020-21
11.9.4.1 – Export capacity requested (by customer type)	2020-21
11.9.4.2 – Export capacity requested (by feeder type)	2020-21
11.9.8.1 – Export service capacity approved in connection agreements in the year (by customer type)	2020-21
11.9.8.2 – Export service capacity approved in connection agreements in the year (by feeder type)	2020-21

Table 3: Other export measures

Metric	Availability
11.0.1 – AS4777.2 complaint inverters	2021-22
11.0.2.x – Duration of full export access (CER Type)	2022-23
11.0.2.x – Duration of full export access (Customer Type)	2022-23
11.0.3.x – Duration of no export access (CER Type)	2022-23
11.0.3.x – Duration of no export access (Customer Type)	2022-23
11.0.4.1 – Total utilised CER generation (customer type)	2021-22
11.0.4.1 – Total utilised CER generation (feeder type)	2021-22
11.0.5.1 – Complaints relating to overvoltage (customer type)	2020-21
11.0.5.2 – Complaints relating to overvoltage (feeder type)	2020-21
11.0.6.1 – Customers with static zero exports (customer type)	2021-22
11.0.6.2 – Customers with static zero exports (feeder type)	2021-22
11.0.7.1 – Customers with non-zero export limits (customer type)	2021-22
11.0.7.2 – Customers with non-zero export limits (Feeder type)	2021-22
11.0.8.1 – Customers with flexible export limits (customer type)	2021-22
11.0.8.2 – Customers with flexible export limits (feeder type)	2021-22
11.0.9.1 – Average non-zero static export limits (customer type)	2021-22
11.0.9.2 – Average non-zero static export limits (feeder type)	2021-22
11.0.10.1 – Average upper limit for customers with flex export limits (Customer Type)	2021-22
11.0.10.1 – Average upper limit for customers with flex export limits (Feeder Type)	2021-22
11.0.11.1 – Average time the upper limit was unavailable for customers with flexible export limits (customer type)	2021-22
11.0.11.2 – Average time the upper limit was unavailable for customers with flexible export limits (feeder type)	2022-23
11.0.12 – Average time to connect consumer energy resources to the distribution network (customer type)	
11.8.1 – opex for the provision of export services	2020-21
11.8.2 – Capex for provision of export services	2020-21
11.8.3 – Export volumes – net metered volume of energy exported (MWh) by feeder	2021-22
11.8.4 – Export customer numbers (by feeder)	2021-22
11.8.5 – Export customer numbers (by CER type)	2021-22
11.8.6 – Exporting customer capacity by customer type (Customer Class)	2021-22
11.8.7 – Total exporting customer capacity in the network by feeder classification	2021-22

Question 11: Do you agree with the level of data disaggregation in the strawman information request (typically disaggregated by customer type and feeder classification, with some exceptions)? Please provide your views and reasons if you consider specific data should be disaggregated at a different level to that proposed.

We consider the proposed level of data aggregation across metrics is appropriate.

Question 12: Is any of the proposed data ambiguous? If the information request would benefit from additional definitions or specification, please provide your suggestions.

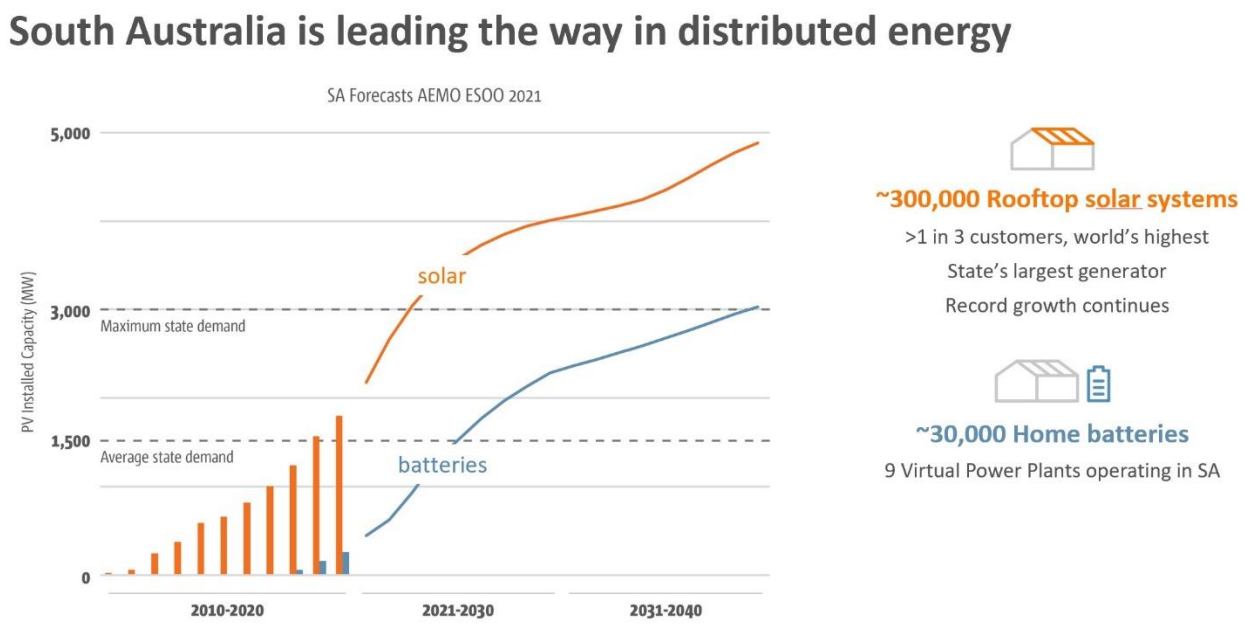
We suggest the exclusion of instances where a system security event was in effect for metrics 11.0.2 duration of full export access, 11.0.3 duration of no export access and 11.0.11 average time the upper limit was unavailable for customers with flexible export limits. System security events are system wide and can be beyond a distributor's control (e.g. when the interconnector fails), therefore the inclusion of impacts resulting from such events in performance data has the potential to skew performance results.

For metric 11.0.1, compliance to AS4777.2 has a bearing on the overall hosting capacity of the network, but it is not an indicator of readiness for DOEs. To be DOE ready, an inverter must meet CSIP-AUS standards. All inverters installed from 1 July 2023 in South Australia will be required to meet this standard.

Clarification is required for metric 11.0.12 average time to connect consumer energy resources to the distribution network. Beyond approving applications, SA Power Networks is not involved in the connection process for solar systems with a capacity less than 30kW. For larger systems, we are involved in the commissioning process. We therefore suggest adding a definition which clarifies the measure should take place from the time a customer requests commissioning and we then subsequently arrive on site, noting this measure may also be impacted by customer availability to schedule commissioning times. We do not consider it appropriate to measure the days from when a connection application is received, as commissioning may be impacted by the time taken for the customer to undertake the solar installation.

Benchmarking

SA Power Networks is at the forefront of the customer-led distributed energy transition, over a third of our customers now have rooftop solar systems installed.



Significant innovation and investment has been required for SA Power Networks to support the growing demand for 'export services', noting our distribution network was initially built to support a one-way flow of energy to customers. While networks inherently have a basic level of capacity to support export services, this capacity is rapidly being exhausted, with customers facing growing limitations to the amount of energy that can be exported whilst maintaining network stability. We expect further expenditure will be necessary to ensure sufficient network capacity is available to meet continued strong customer demand for export services.

We note that following the Australian Energy Market Commission (**AEMC**) rule change, export services are now explicitly recognised as a distribution service within the Rules. This means that the existing planning and investment requirements and controls that apply to consumption services will now also apply to a distributor's provision of export services.

Through the enablement of CER, distributors are enabling new value release to customers. This is an important issue for our customers and we consider it essential that the AER's benchmarking be updated to consider both CER inputs and outputs. The current benchmarking regime perversely disadvantages distribution businesses with high CER penetration, giving the appearance of reduced productivity. This occurs since it both reduces energy throughput and acts against increasing the ratcheted maximum demand output. Further, managing these resources increases multilateral total factor productivity (**MTFP**) capital and operating inputs, particularly network operating costs, resulting in further deterioration in a DNSP's comparative MTFP benchmarking performance.

Responses to questions posed within the AER's draft report are provided below.

Question 13: Do you agree that we should not proceed with developing an export services OEF at this time?

We support the AER's draft decision to not develop an export services Operating Environment Factor (OEF) as an interim measure to account for export service costs in benchmarking as we note that:

- the development of OEFs will not address the problem; and
- OEFs are only relevant to comparative benchmarking analysis, which would leave other applications of benchmarking models unadjusted.

14. Do you agree with our draft views summarised in Table 2, including on:

- **the potential impacts of export services on the benchmarking models?**
- **the possible options for addressing these impacts?**
- **the early 'indicative' views of the materiality of changes to the productivity results of implementing these options?**
- **key issues that would need to be resolved before changes to the models could be implemented? In providing your comments on each issues, please include any rationales and evidence in support of your views.**

We strongly recommend that the AER complete a fulsome review of its approaches to benchmarking to recognise the inputs and outputs of distributors export service provision with a view to completion in time for the 2024 benchmarking reports to ensure that distributors with high levels of CER penetration do not continue to be disadvantaged.

This review should consider what inputs and outputs best represent the efficient operation of the distribution network for consumption and export services, including for example:

- the relevance of existing metrics such as 'energy throughput' and 'maximum demand' in light of energy exports (discussed further below);

- potential new metrics for export service outputs – this may include total utilised generation, energy exported and minimum demand (discussed further below);
- the interrelationships between export services and other benchmarking variables; and
- the suitability of existing benchmarking models to accommodate CER.

In our view:

- the need for a review of approaches to benchmarking should not wait until CER impacts materially on all networks. Given that benchmarking aims to assess relative performance of distributors, it is precisely now when distributors are at differing stages of the distributed energy transition that we need to consider how benchmarking accounts for provision of export services;
- to date, ahead of the CER access, pricing and incentives rule change, distributors have made relatively modest (compared to consumption services) investments in network hosting capacity to enable export services. However even at these modest levels of investment, the impact of CER on benchmarking performance is already being experienced. For example, SA Power Networks preliminary and high-level analysis suggests that our business' benchmarking performance would improve by at least 2.5% were it not for CER (i.e. using the AER's existing benchmarking methodology and adjusting inputs for CER costs and outputs by self-consumption). This analysis does not consider the introduction of new CER inputs or outputs;
- now, with the rule change, distributors have much greater clarity on the enablement of export services and may need to invest in far more material increases in network hosting capacity in coming years, further exacerbating impacts of benchmarking under current approaches; and
- further, for networks such as ours with high CER penetration, it is not only the impact that CER is having on existing benchmarking metrics that needs to be considered. Consideration is also needed of potential new benchmarking metrics to ensure that the outputs these networks are producing in delivering export services for customers is fully recognised. That is, it is not only the negative impacts on benchmarking performance that needs to be considered, but also whether the positive impacts are being understated.

The results of our preliminary analysis of the impact of DER on existing inputs and outputs are discussed in further detail below.

1. Opex costs and capital stock

We agree that it may not be feasible to disaggregate capital stock related to export services, particularly given that these assets and investments are likely to have more than one driver.

We acknowledge expenditure to date associated with CER has been comparatively limited, with CER predominantly delivered through intrinsic hosting capacity. However, as this hosting capacity is exhausted, further expenditure will be necessary to ensure sufficient network capacity is available to meet continued strong customer demand for export services.

The materiality of these costs will increase over time as networks' intrinsic hosting capacity is exhausted.

2. Energy throughput

We support the AER's view that energy throughput is impacted by self-consumption.

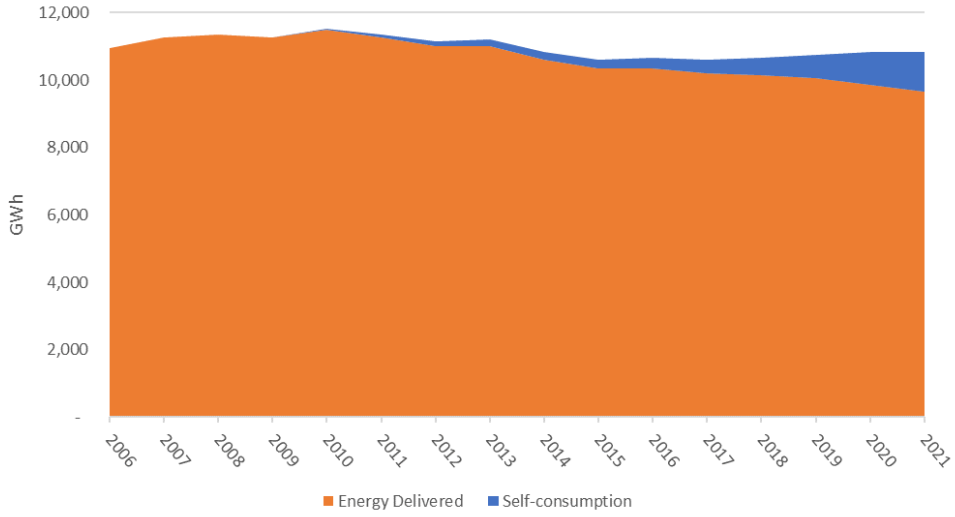
As the number of solar systems installed has increased, SA Power Networks has seen a gradual decline in the amount of energy delivered (consumption) across its distribution network. In 2022, metered consumption had declined by approximately 16% from 2010 (our previous maximum), impacted by the amount of solar energy self-consumed by customers. This reduced consumption is however representative of value delivered

to customers through enablement of self-consumption which could not occur without a network in place to provide energy in excess of that able to be provided by customers' own solar systems.

We acknowledge it is challenging to accurately determine the amount of self-consumption for an individual customer, as this is not captured by electricity meters. This amount is impacted by a number of factors, including the amount of generation available and the customer's specific load at a point in time. Noting this, we have use sample data to estimate the amount of self-consumption across the distribution network, taking into consideration the number and size of the solar systems installed on an annual basis. Statistical methods can be used to determine this data to whatever levels of certainty are desired without the need for exhaustive metering of self-consumption.

We estimate customers self-consume approximately 42% of their solar energy generated. In 2022, self-consumption contributed to a reduction in total energy delivered of approximately 12%. Reported energy delivered and our estimation of self-consumption is demonstrated graphically in Figure 1 below.

Figure 1 – Reported energy delivered and estimated self-consumption (GWh)



The amount of self-consumption is having a significant impact on the reported quantity of energy throughput used in benchmarking. Noting this, we acknowledge energy throughput has a weighting of 8.58% in the AER's benchmarking modelling, reducing the relative materiality of this on benchmarking outcomes.

We expect the materiality of self-consumption will continue to increase going forward, as customers' demand for solar continues to increase, and particularly as increasing numbers of customers install batteries. The amount of solar self-consumed may also increase as more customers purchase electric vehicles and their ability to shift loads through the use of smart appliances improves.

3. Ratcheted Maximum Demand

SA Power Networks' ratcheted non-coincident maximum demand, as utilised within the benchmarking model, is 3,192.8 MW as set in the 2008/09 reporting period. The associated coincident maximum demand was 3,001 MW on 29 January 2009 at 5pm. This was a severe temperature day in South Australia, with several places recording their highest January daily maximum temperature on record.[4] We note, solar penetration at this time was quite low.

In 2018/19, SA Power Networks recorded a non-coincident maximum demand of 3,118 MW. This maximum was 74.8 MW below the previously reported maximum in 2009.

[4] Mount Gambier (43.6°C), Murray Bridge (46.6°C), and Mount Barker (44.5°C)

The coincident demand for this period was 2,963 MW on 24 January 2019 at 7:30pm. The temperature on this day reached 46.6°C in South Australia. Solar energy is clearly having a direct impact on maximum demand, delaying the peak until later in the evening when solar systems are no longer operating at full capacity.

We estimate there would also still be a small amount of self-consumption at 7:30pm. With most systems continuing to generate a small amount of energy until sunset at 8:26pm on this day.

Without CER, we expect the maximum demand on 24 January 2019 would have been higher than recorded and may have exceeded the previous maximum demand of 3,192.8 MW. It is difficult to ascertain by how much the demand would have increased due to difficulty in reliably estimating the amount of self-consumption. We acknowledge that reduced maximum demand may have also tempered capacity-related augmentation capital expenditure.

As the rollout of type-4 smart meters progresses, we expect to gain increased evidential understanding of the impact exports have on maximum demand.

4. Reliability output / customer minutes off supply

We agree with the AER's preliminary view that export service expenditures will likely have no material impact on the existing reliability output.

Question 15: Do you agree with our revised approach for reviewing if and how benchmarking models can be adjusted to better account for export service, including:

- **not further considering the option of excluding exports service inputs from the benchmarking inputs?**
- **the materiality checks in Table 2 (column 2) proposed to establish the benefit of options to adjust the benchmarking models?**
- **the final assessment criteria in Table 2 (column 3) proposed to decide whether to proceed with an update or not?**
- **initiating a full review of the benchmarking models by 2027 to determine the materiality of export service impacts, the best combination of changes to appropriately account for export services, and the feasibility of successfully implementing these changes?**

As discussed above, we encourage the AER to undertake a holistic review of benchmarking. Noting the materiality of CER is continuing to grow across the NEM, we implore the AER to commence this review as a priority. We encourage the AER to aim for completion of the benchmarking review for incorporation in the 2024 benchmarking reports to ensure distributors with high levels of CER penetration do not continue to be disadvantaged.

We do not support the AER's proposed exporting customer numbers portion approach, as the cost to serve export customers can vary greatly depending on the capacity to export and location within the network. Therefore, such a simplification may lead to inaccurate results.

We also oppose adopting a curtailment measure as a negative as a proxy of the level of export hosting services provided by the network, and using CECV to weight this output. This is on the basis the:

- this metric may penalise a network which is curtailing customers, even when it may be economic to do so;
- the CECV varies state to state which may dis-advantage some networks dependent upon the CECV to which they are exposed;

- a perverse incentive to under-invest may be introduced as networks which only allow customers to install smaller systems will be seen to outperform networks which allow customers to install larger systems;
- a network which permits customers to install larger systems to take full advantage of dynamic exports may be significantly disadvantaged due to increased amount of curtailment; and
- fundamentally, we consider we should measure the value delivered to customers as an output (including self-consumption as well as export energy).

In summary, the suggested curtailment output fails to reflect network utilisation and also creates a perverse incentive to limit the system size customers may connect and impede the rollout of dynamic export limits. By focusing on reduced curtailment, it perversely encourages reduced delivery of customer value.

We instead recommend the application of metrics which reflect the delivery of value to customers through the efficient connection of CER. In particular, we consider that the metrics below would be appropriately representative of customer value.

- Total Utilised Generation would align with the value customers receive from CER. Such a metric could serve as a measure of the CER capacity upon which the network has enabled customers to utilise. This metric was listed in UTS's race for 2030 research[5].
- Ratcheted Minimum Demand would reference the networks' ability to integrate increasing levels of solar export. We do not consider this to be duplicative of Ratcheted Maximum Demand, as the network's ability to manage low operational demands, particularly in support of system security, bears little relationship from its ability to integrate one-way flows.
- Quantity of Energy Exported would measure the amount of energy the network has enabled customers to export. We do not consider this measure to be duplicative of energy throughput as it is a measure of service performance of the export service provision. Given the costs and customer value associated with provision of exports differ from imports, we consider its inclusion as an additional output for the purpose of benchmarking network performance should be considered.

Question 16: For the list of export services data in Box 1 needed to assess materiality of potential export service impacts, considering the uncertainty around which adjustments, if any, may be required and the costs to business of collecting the data:

- **what data should we start collecting?**
- **what data are you able to / not able to begin reporting?**
- **what data may be feasible to report on in the future?**

SA Power Networks acknowledges additional data will be required to further understand the impacts of CER on benchmarking. This data will assist the AER in undertaking a further detailed review of what inputs and outputs best represent the efficient operation of the distribution network for consumption and export services. We are happy to work with the AER to consider data requirements to support the AER's benchmarking review.

We note that some data will need to be estimated as actual data is not available at this stage, including self-consumption.

[5] Langham, E.L., Guerrero, J., Nagrath, K. and Roche, D. (2022). Measuring and communicating network export service quality. RACE for 2030 CRC

Question 17: For the list of export services data in Box 1 needed to implement possible adjustments to the benchmarking models, considering the uncertainty around which adjustments, if any, may be required and the costs to business of collecting data:

- **what data should we start collecting?**
- **what data are you able to / not able to being reporting?**
- **what data may be feasible to report on in the future?**

SA Power Networks is happy to work further with the AER to consider data requirements to support the AER's benchmarking review.

Question 18: For the Canadian and New Zealand DNSPs currently used in the econometric benchmarking, what are the key issues that would need to be resolved to determine if it were appropriate to continue to use these jurisdictions to update the econometric models for export service impacts? What data and information could we begin to collect to resolve these issues? What alternatives to the Canadian and New Zealand DNSPs could we consider, if their use was not appropriate?

SA Power Networks considers it important to assess jurisdictions from the perspective of their CER penetration and climate as well as the similarity of their regulatory regimes. In this context another jurisdiction that could be considered is California, which has the highest rate of residential solar in the US and faces similar issues of excess daytime solar production.