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30 September 2022

Sara Stark
Director, Network Regulation
Australian Energy Regulator

by email: AERInquiry@aer.gov.au

Dear Sara

Incentivising and measuring export service performance – Submission to Consultation Paper

AusNet welcomes the opportunity to provide this submission to the Australian Energy Regulator's (**AER**) consultation paper on incentivising and measuring export service performance. This is an important part of implementing the Australian Energy Market Commission's (**AEMC**) Distributed Energy Resources (**DER**) access and pricing rule changes that formalise export services as a distribution service.

Approximately 25% of AusNet's customer have rooftop solar, and the demand for new connections remains strong. Over the past decade, we have facilitated the connection of these consumer energy resources (**CER**)[1] on the network, with less than 1% of customers constrained from exporting to date. Through our customer and stakeholder engagement over the past decade, customers have expressed strong support for measures to improve the efficient integration of CER on the network, including exports. These objectives are consistent with the Victorian Government's renewable energy policy and a pathway to Net Zero.

We are supportive of network investment that allows customers to get the most out of their CER, providing the benefits to all customers outweigh the cost of required investment. As demand for CER continues to grows, particularly for new devices such as batteries and electric vehicles, the regulatory framework will need to evolve to ensure network investments and incentives are aligned with customer preferences.

Our submission provides input and feedback on the three areas of consultation—incentives, performance reporting and benchmarking, with the key positions summarised below.

Incentivising export services

- CER enablement will be a large driver of electricity distribution expenditure over the next decade as demand for CER continues to grow. Expenditure allowances, consistent with the AER's DER integration expenditure guideline, should be the primary funding mechanism for export services. However, financial incentives may also be needed to unlock more exports if CER connections are significantly higher than funded for.
- Reputational incentives are important for delivering customer outcomes. However, as export enablement becomes increasingly challenging, the reputational risk from unmanaged exports, e.g., 'system black' from minimum demand or increasing voltage disturbances, may outweigh the reputational benefit from export enablement. From 1 October 2022, voltage non-compliance in Victoria will be subject to financial penalties under the new Electricity Distribution Code of Practice (**EDCoP**), which will put further pressure on distributors to manage exports in a way that reduces risk of voltage non-compliance.
- For these reasons we consider financial incentives for export services are warranted. However, we agree with the AER that updating the Service Target Performance Incentive Scheme (**STPIS**) for an export service is likely to be difficult and impractical, given the differences in the nature of export services compared to consumption and given the lack of robust data for development of a financial

[1] We refer to CER in the submission, except when referencing AEMC's rule change or AER's expenditure guideline.

incentive. We support a paper trial to test robustness of potential metrics that may be used for a STPIS update in the future.

- We support development of bespoke financial incentives that would deliver better customer outcomes but would be simpler to measure compared to an updated STPIS. In the attached submission, we propose two bespoke schemes that would incentivise a faster uptake of flexible export limits and unlock exports for customers with existing constraints. We also support distributors having the opportunity to develop bespoke incentives specific to their network, if supported by the network's customers and communities.
- We do not support a penalty-only Guaranteed Service Level (**GSL**) scheme for export service. The AEMC rule change specifies there is no minimal level of export service as not all exports are efficient. Also, providing GSL payments to small customers would not be consistent with the treatment of larger renewable generators on our network that are not compensated at times of network constraints.
- The Demand Management Innovation Allowance (**DMIA**) and the Demand Management Incentive Scheme (**DMIS**) should be updated to incorporate export-related innovation and non-network solutions. This includes expanding the scope and the value of the schemes, to ensure both demand and export management initiatives are captured.

Export service performance reporting

- Export service performance reporting should be based on measurable, actual and auditable data where possible, and only combined with estimation and modelling techniques where these are proven to be robust and necessary.
- In the short term, performance reporting should include only actual and available data across all jurisdictions. For 2023 and beyond, we encourage the AER to short-list potential metrics and methodologies for estimation and modelling, and workshop them with distributors and the industry to identify limitations in data provision, and assess the cost and benefit of the proposed metrics.
- Performance reporting should be contextualised for network and jurisdictional policies, e.g. network-specific basic export limits and jurisdictional voltage regulations, to avoid benchmarking of inconsistent data sets.

Updating benchmarking for export services

- In considering changes to incorporate export services, the AER should complete a thorough and holistic review of the benchmarking models, including input and output specifications and operating environment factors (**OEF**), as a matter of priority. The review should address export services and all other concerns that AusNet and other distributors have raised over the past few years, such as differences in bushfire risk.
- We recognise re-specifying all the benchmarking models is a difficult task as it would require data collection over a period of time, across a number of businesses including international networks. However, this is the most robust approach to updating and reviewing benchmarking techniques for integration of a new set of services.
- We do not support any interim measures, such as updating OEFs to account for exports. Incorporating incomplete temporary solutions has a large margin for error, particularly given the evident data challenges around export services and expenditure. We also consider there is a risk temporary solutions become a permanent fixture in benchmarking over time, resulting in perpetual erroneous benchmarking results.

A more detailed response to the questions in the consultation paper is provided in the attached submission.

Please do not hesitate to contact me on [redacted] or Angella Nhan at [redacted] about the submission.

Sincerely,

[redacted]

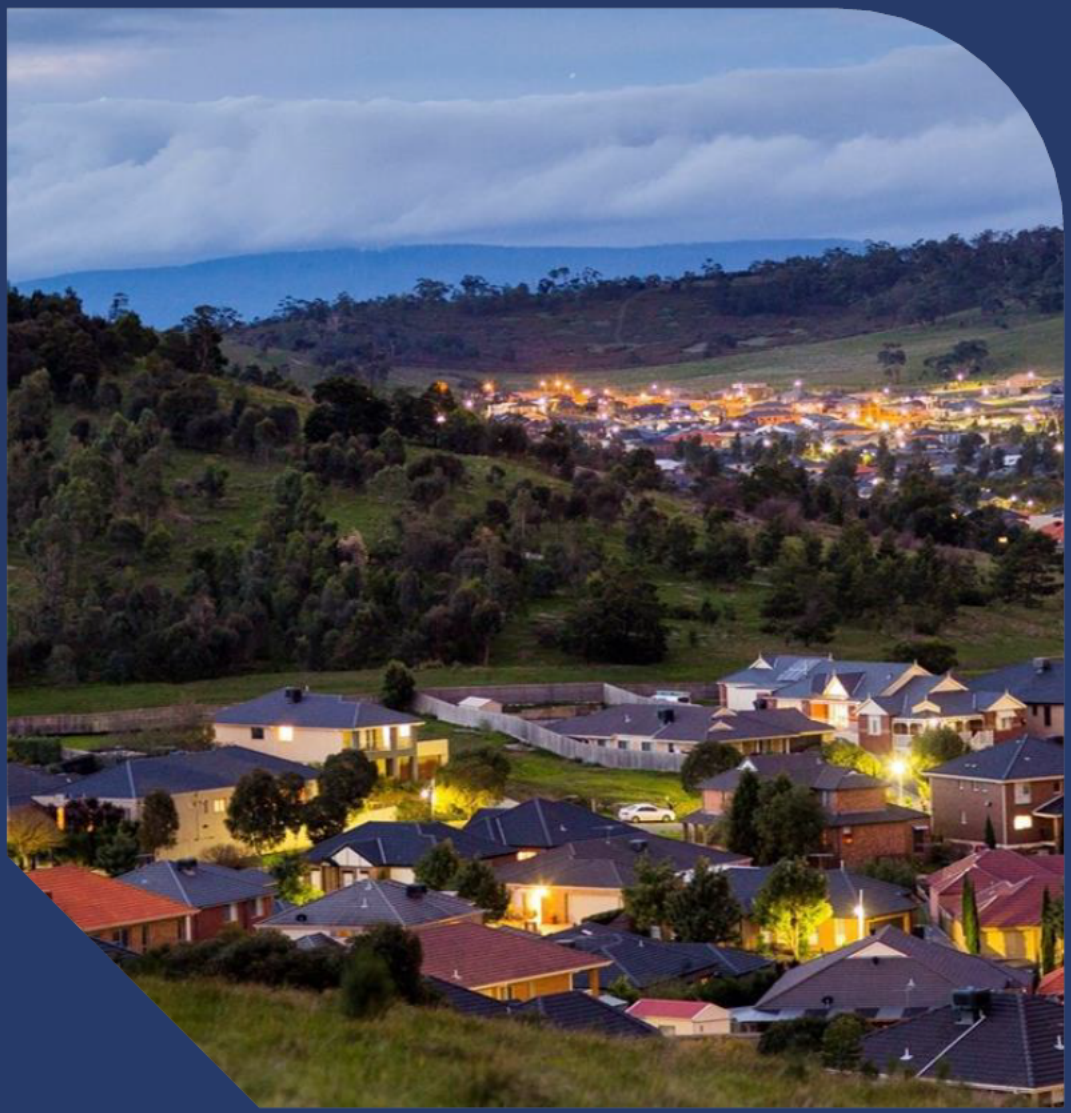
Sonja Lekovic
Regulatory Policy Manager
AusNet Services

AusNet

Submission to the Incentivising and measuring export service performance Consultation Paper

Australian Energy Regulator (AER)

Friday, 30 September 2022



1.1. Export service incentives

Q1 Incentive measures for export services

Do stakeholders consider further incentive measures are required to ensure DNSPs provide efficient levels of export services?

Distributors currently have a reputational incentive to deliver export services to their customers, including minimising customer dissatisfaction and complaints, and supporting jurisdictional renewable energy ambitions. For the 2021–2026 regulatory period Victorian distributors were funded to voltage management and supply upgrades in the low voltage network (**LV**) to enable exports for a number of customers that were anticipated to experience export constraints over the regulatory period, and for whom export enablement would be economically efficient.

As demand for CER grows and more customers connect new and larger systems, CER enablement (including imports and exports) will be a large driver of electricity distribution expenditure. Given the anticipated uplift in expenditure necessary to meet growing demand, we consider expenditure allowances, consistent with the AER's DER integration expenditure guideline, should be the primary funding mechanism for CER enablement and export services.

However, allowances may not be sufficient to fund all export services where CER connections are significantly higher than expected. We are already experiencing challenges from higher than anticipated demand in this regulatory period. Since January 2021 the number of new rooftop solar connections has been 50% higher than forecasted for our 2021–2026 regulatory period. This means despite being on track to deliver our full CER enablement program for 2021–2026, the number of customers with constrained exports is growing. Without the additional funding, or a financial incentive to enable exports above and beyond the CER enablement allowance, customers may remain constrained for longer than may be economically efficient.

Reputational incentives are important for delivering customer outcomes. However, as export enablement becomes increasingly challenging the reputational risk from unmanaged exports, e.g., 'system black' from minimum demand or increasing voltage disturbances, may outweigh the reputational benefit from export enablement.

Further, in Victoria, from 1 October 2022 distributors will be exposed to financial penalties for non-compliance with voltage standards, under the new EDCoP. This creates a financial incentive for Victorian distributors to prioritise voltage management over export enablement in specific network areas where exports may result in voltage non-compliance. Without a financial incentive to enable exports above and beyond funded projects, exports constraints are likely to continue to grow, in areas beyond the available network export, where high CER penetration may cause voltage challenges.

Therefore, we consider there is merit in developing financial incentives to drive investment in export services beyond funded projects, particularly given the continued strong growth in CER connections and the changes in voltage regulations that will take effect in October 2022 in Victoria.

Q2 Objectives of incentivising export services

Do stakeholders agree with the proposed objectives for assessment of the merits of enhancing incentives for export services?

The objectives seem reasonable.

Q3 Materiality of concern with incentives

How significantly does the average low level (and value) of constraints currently experienced by most NEM exporting customers influence the need to enhance incentives for the provision of export services at this time?

While the number of customers experiencing export constraints may be low on average today, without sufficient funding, or a financial incentive, to prioritise export service outcomes as the penetration and size of CER inevitably grows, the average customer experience around export services is only likely to worsen over time. Through our customer research and existing customer experience over the past decade, we have sufficient evidence that customers value exports and that they are dissatisfied with static export limits. This should be a key driver of an incentive scheme development.

Q4 Options for providing incentives

What level of accuracy and robustness of data metrics would stakeholders consider appropriate for a financial incentive mechanism to operate? For example, are stakeholders comfortable with the use of approximated / modelled inputs for the purpose of a STPIS export service performance measure given most DNSP face significant data visibility issues?

A financial incentive scheme provides strong signals to distributors to target investment in areas that unlock customer benefits, where the benefits exceed the cost to customers of funding the financial incentive. If the incentive is based on estimates or data for which we do not have evidence or confidence the estimates are reflective of actual customer values or behaviours, the potential for error in valuing customer benefits is significant and the risk and cost of imprudent investment cumulates over time.

For that reason, we consider any financial incentives, including any updates to the STPIS, should be based primarily on measurable and auditable data that can be collected by networks on a consistent basis, with limited reliance on values that may require estimation and modelling. In cases where estimated or modelled data is used (e.g. akin to the use of the value of customer reliability [**VCR**]), this should only follow a paper trial that tests the feasibility and accuracy of proposed incentive arrangements.

We do not support a financial incentive that is primarily based on modelled network and customer data. A financial incentive based on largely modelled data is imprudent even as a point of comparison, it is open to a large margin for error, and can create a discrepancy between reporting standards in Victoria and the rest of the NEM if Victorian distributors are reporting actuals and others are reporting estimates. We already see this discrepancy in voltage performance visibility and reporting.

If visibility is the primary driver of use of modelled data, we encourage regulatory settings that incentivise visibility arrangements prior to developing incentive scheme that are used on estimated data. This includes funding investment in visibility devices or data procurement.

Do stakeholders agree that the CECV is the appropriate valuation of improvements or decline in export service performance? Should a non-symmetrical (penalty only) STPIS mechanism apply for export service levels about the basic export level?

We do not support a penalty only incentive scheme around export services, as described in our response to question 5.

Do stakeholders agree that there are significant concerns with implementing a STPIS mechanism for export services at this time? Are there any other issues we have not considered?

We agree with the AER that updating the STPIS for an export service is likely to be difficult and impractical, and that the risk of 'getting it wrong' outweighs the benefit of the potential financial driver to enable more exports through this approach, at this point in time.

We highlight our key concerns below:

1. Developing a metric that measures export services in a consistent way with consumption may not be feasible, given exports are still considered to be discretionary and not the primary reason for the customers' connection to the grid (self-consumption being the primary reason). Therefore:
    - net exports, or exports as a percentage of capacity, are not an appropriate measure of export service, as they are a factor of behind the meter customer decisions which are outside of the distributors' control
    - measuring export capacity as an export service may be simpler; however, this measure is inconsistent with the intent of the STPIS which is focused on reliability and quality of electricity supply, rather than network access arrangements
2. As mentioned above, the data on which the STPIS may be updated for export services is not currently available or standardised in the industry. It would not be prudent to base a financial incentive scheme on metrics that have not undergone and robust assessment and/or audit, given the potential for cumulative erroneous investment signals over time.

Should the AER explore establishing a paper trial to test the robustness of a selection of potential metrics? What metrics do stakeholders suggest should be included in a paper trial?

The paper trial is a reasonable approach to testing robustness of potential metrics, particularly if they are derived metrics that require estimation and modelling. The paper trial should examine whether certain estimated metrics can be relied upon to identify situations where distributor curtailment only has impacted customer exports, isolating other impacts such as patterns of generation, consumption and storage behind the meter, etc., and to what level those measurements are scalable.

Q5 Guaranteed service levels (GSL)

Should a GSL for export services be further explored?

We do not support a penalty only GSL scheme for export service below the 'basic export level'.

A penalty only scheme would imply there is a minimum level of export capacity to which all customers are entitled, which was not the conclusion of the AEMC's DER access and pricing rule. Minimum export capacity levels were considered as part of the review, however the AEMC concluded it may not always be efficient to provide export capacity and that some customers may be constrained to zero exports when that is the most efficient outcome. The basic export level is considered to be a level for which customers do not need to pay for a service, rather than a minimum level of service.

Further, providing GSL payments to small customers who are constrained from exporting below a certain level would not be consistent with the treatment of larger renewable generators on our network. Generators connected to the distribution network typically pay 100% of the costs for network connection asset and augmentation (unlike rooftop solar customers) but may still need to be constrained at times due to network conditions, as per their agreed network contract. There are no arrangements to compensate those generators for network constraints—therefore introducing a GSL payment that is specific to small customers would unfairly subsidise renewable generation in one part of the network at the expense of large generator providing lower cost electricity to all customers.

Finally, GSL payments will result in higher cost to all consumers if customers are connecting in areas where exports are uneconomic and will be constrained. This will mean all customers pay more while there will be no additional exports unlocked, sending imprudent investment signals to customers and distributors.

If a GSL were to be implemented, do stakeholders agree a GSL would best relate to the basic export level and would the applicable jurisdictional CECV be the appropriate compensation for failing to meet the basic export level?

Please refer to our response above.

Q6 Bespoke incentive scheme

Should a bespoke export service incentive mechanism be explored further?

We support development of a bespoke incentive mechanisms for export services, that would result in better customer outcomes but would be simpler to measure and implement compared to an updated STPIS.

In the box on the next page, we have proposed two bespoke incentive schemes that would drive investment toward innovative solutions such as flexible export limits, and would direct resources towards unlocking more exports from existing customers with constraints. The schemes are based on relatively simple metrics that should be available across all distributors, and hence could be applied on a national basis. These incentives could be implemented in the near term, before the start of the next regulatory period for each jurisdiction.

We propose to work with the AER, our customers and stakeholders on the specifics of these bespoke incentives, including whether they represent value for money to our customers.

We also support distributors having the opportunity to develop bespoke incentives specific to each network, if supported by the network's customers and communities. Network-specific incentives may also be necessary given the strong influence jurisdictional policies have on CER penetration, connections and export constraints, which may mean a national approach is impractical.

We have already successfully developed a bespoke incentive scheme specific to our network that is driven customers experience improvements—for the 2021–2026 regulatory period, AusNet developed a bespoke Customer Service Incentive Scheme (**CSIS**) through collaboration and co-design with our Customer Forum. The CSIS is based on extensive customer satisfaction research across the key interactions we have with our customers, and we receive either a financial reward or penalty based on our performance. The CSIS includes measures, baselines and targets that are specific to AusNet, with other networks developing their own CSIS measures since then. We report on the outcomes of the CSIS to both the AER and our Customer Consultative Committee (**CCC**).

Ultimately, despite the eventual decision on export services incentives, distributors should maintain the flexibility to propose bespoke incentives and allowances in their regulatory proposals, where these are supported by, and in the long-term interests of, customers.

AusNet's proposed bespoke incentive schemes for export services

Incentivising a faster take-up of flexible export limits

We are currently trialling flexible exports limits through our Flexible Exports trial, which has approximately 40 customers signed up to it. Through this trial, we have experienced a number of barriers to the implementation of flexible export limits, including technical limitations (i.e. no internet connection in proximity of the inverter) but mostly barrier around the perceived complexity of the product for both installers and customers.

Because of the complexity barrier, the take-up of our flexible exports trial has been lower than expected, which is a missed opportunity to unlock more value for customers—flexible exports would allow more exports for currently constrained customers in the short term, and in the long term they would result in a higher and more equitable distribution of hosting capacity across all exporting customers.

Therefore, there is merit in a financial incentive that rewards distributors for connection of customers to flexible exports. As flexible exports are optional at present, there is no incentive on distributors to invest to ensure customers take-up that option. Additionally, as the cost per customer of implementing flexible exports is higher with fewer customers, the cost of investing in this solution may not be efficient if there is no certainty of customers taking up the flexible option.

An incentive of this type could be a financial reward per customer connection, which can be easily measured and tracked over time. The value of the reward can be calculated based on estimated optimal number of flexible export connections given the intrinsic hosting capacity and anticipated growth in CER. The reward would be in addition to any funding received to implement a flexible export solution, as the reward alone would not suffice to cover the cost of the transition. Ultimately, the incentive would result in a faster transition to flexible exports, which is in the long term interest of all consumers.

This incentive would only apply where flexible export limits are not mandated.

Incentivising export enablement for existing customers with constraints

Our current practice of reviewing static export limits of existing customers is to review constraints following an upgrade to the network in their area, or a similar anticipated uplift in capacity. Depending on when the customer connected, the review may not happen for a number of years following the export limit determination.

We understand conditions in any part of the network may change such that export capacity may be unlocked without network intervention, for example if a community battery is installed in a certain area. This may allow previously constrained customers to export more than their static limit, however they will remain constrained until a review is conducted.

Reviewing these conditions for a large number of customers would incur cost and require resources that we are not currently funded for. There may be an opportunity to incentivise more frequent reviews of existing export constraints, beyond our usual approach, to unlock value for customers that may be on static export limits today. The incentive could be linked to the capacity unlocked through the reviews. This type of measure would incentivise distributors to develop sophisticated tools to identify areas of most opportunity to unlock more exports, and to better incorporate changing network conditions in their calculations of hosting capacity.

The incentive would be an alternative to a customer-requested manual review which is currently treated as an alternative control service.

Q7 Allowance and marginal mechanisms

Should an allowance and/or margin incentive mechanism be explored further?

There is merit in updating both the DMIA and the DMIS to incorporate export-related expenditure.

The DMIA was designed to provide funding for research and development (**R&D**) expenditure to help distributors find innovative solutions to the largest network challenge at the time—peak demand growth. With exports posing new challenges for voltage and minimum demand management, it is timely the purpose and the value of the DMIA were updated to include export-related innovation. We propose a review of the DMIA to incorporate any innovation related to either import or export management, and to increase the value of funding available for these projects.

Similarly, the DMIS was established to promote an uptake of non-network solutions for peak demand constraints. Given the emergence of non-network solutions that increase solar hosting capacity and can provide voltage and minimum demand support, the DMIS should be updated to support an uptake in those non-network solutions. For example, engaging a third-party solution to increase export hosting capacity, where that solution is deemed most efficient, should be rewarded under the updated DMIS. This would recognise the option value of third-party solutions in both demand and export management.

Updating the DMIA and the DMIS should be considered additional to any bespoke incentives around enabling export services on the whole, as both incentive mechanisms are limited in their purpose and value.

Do stakeholders think appropriate output measures could be used to assess a DNSPs performance given the flexibility of these approaches? Should consumers drive these types of proposals?

The output measures for the updated DMIA and DMIS should be consistent with the purpose of each scheme and the output measures used in assessing efficiency of CER enablement expenditure.

For example, the DMIA output measures should be ability to demonstrate genuine innovation of proposed projects and anticipated benefits to exports enablement, while for the DMIS the output measures should include demonstrated efficiency of non-network solution to address identified need such as increasing hosting capacity or improving voltage performance.

Q8 Reputational incentives

What sorts of reporting measures do stakeholders consider are likely to impose reputational incentives on DNSPs?

We support increased transparency and reporting around export performance by distributors, for the purposes of benchmarking and increasing awareness in the industry and with our customers.

However, as discussed in the following two sections in more detail, the robustness and accuracy of the data used for reporting and benchmarking is of utter importance. Further, any data that is used for performance reporting should be contextualised for network or jurisdictional policies, e.g. network-specific basic export limits or jurisdictional voltage regulations. Without the context around factors that influence export performance reporting s likely to be positively biased towards networks with low CER connection activity and less stringent voltage regulations.

Do stakeholders consider reputational incentives are sufficient to address concerns about DNSPs provision of efficient export services?

Reputational incentives are important in ensuring distributors deliver services customers value and prefer, however, as discussed in our response to question 1, reputational incentives alone are unlikely to be sufficient in delivering efficient export services for all customers, particularly with an inevitable rapid increase in the update of bi-directional CER.

1.2. Export service performance reporting

In this section we provide feedback on questions 9-12 in the consultation paper.

Q9 Export service performance

What export service performance metrics should we ideally capture, even if this is only feasible or practical in the long-term?

Export service performance reporting should be based on measurable, actual and auditable data where possible, only combined with estimation and modelling techniques where these are proven to be robust and necessary.

In the short term, before a paper trial of estimation techniques is completed, we consider reporting should focus only on actual and available data related to customer exports, such as:

- number of customer CER connections and size of connection—to ensure accuracy, this should be based on data available through the regulated CER register only, i.e. size and type of inverter, rather than what technology sits behind the inverter. This means that if a solar and battery have one inverter, we will only have visibility and be able to report on the inverter (which may typically be registered as a solar unit) rather than the capacity of the solar and battery units individually
- number of customers with static export limits and the limit
- number of customers on flexible export limits
- number of customer complaints
- expenditure related to CER enablement (assuming guidance on separation of import and export related expenditure).

Data that may be of value for export performance reporting in the future but would likely require estimation and investment in data analytics includes:

- percentage of customers with compliant inverters/inverter setting and their exports
- generation, storage and consumption behind the meter
- export capacity of various inverter/systems according to weather, location, angle and size
- number of devices behind the meter capable of flexible export limits, or automated real time response.

Further, while certain data can be measured and reported on, it should be contextualised for network or jurisdictional policies, e.g. network-specific basic export limits or jurisdictional voltage regulations. For example, the following metrics are measurable but dependent on network connection agreements and jurisdictional voltage regulations:

- approved to requested export capacity ratio
- approved to requested connected generation capacity ratio
- customers receiving over-voltages and/or tripping of solar inverters.

We consider further work is required with the industry to identify and agree on data according to availability, accuracy and usability, to ensure performance reporting captures and contextualises the data appropriately, and to minimise the administrative cost and burden of the new reporting requirements. Projects such as RACE 2030, where some metrics have been tested for the purposes of measuring export services and developing hosting capacity metrics, should be open for consultation to all distributors and the industry, to ensure network-specific challenges and capabilities are considered and to test customer appetite for this reporting and certain metrics. It is particularly important to involve a Victorian distributor in this study (or similar studies), to better understand what metrics and data can be estimated from a very high penetration of smart meters.

We encourage the AER to run specific workshops on the cost and benefit of proposed metrics for performance reporting prior to the development of the inaugural report in 2023. This should include workshopping opportunities for a potential paper trial of metrics that may be used in a future STPIS update.

a. Do stakeholders agree that the ideal measurement of export service performance would use equivalent measures to those used to measure import service performance – and that this would entail measuring interruptions to exports (or network export curtailment) per exporting customer?

Please refer to our response to question 4.

b. Do stakeholders agree with our view that it would not be feasible to report involuntary export curtailment per exporting customer in the short term (that is, for the inaugural export performance report due by end-2023)? That is, do you agree with our understanding that this metric is not currently measurable, or cost effective to measure?

We agree further exploration of estimation and modelling techniques is required before this metric can be used in performance reporting, and hence unlikely to be fit for purpose for the inaugural performance report in 2023.

Q10 Tracking export service performance in the short term

Do stakeholders agree that financial year 2020–21 is a reasonable base year to start reporting data for most export service performance metrics? If not, what would you recommend and why?

The 2020–21 financial year would include impacts from COVID restrictions in Victoria and other states, which would result in unusual data around (among other things):

- demand for CER connections, as anecdotal evidence shows demand for rooftop solar grew in response to restrictions and more time spent at home
- networks' ability to attend sites and dispatch crew would have been impacted, potentially delaying works that would otherwise go ahead.

This should be contextualised in the report if this year is used as a base and adjustments should be made to any averaging periods in the future if the reporting in 2020–21 exhibits outlier behaviour.

Considering current constraints to collecting export service performance metrics, what metrics are useful and feasible to collect for the inaugural export performance report (to be published by end-2023)? Do you agree with using the potential metrics summarised in Table 5, and are there particular factors we should consider in tracking those metrics? Relatedly, Attachment B summarises our understanding of current data holdings and limitations, and the potential usefulness of each metric. Please provide comments if you have any views on Attachment B.

Please see our response to question 9.

Q11 Feasibility of improving data

Do stakeholders agree with the data imitations, impacts and potential solutions summarised in Table 6? Advise if there are other key limitations we have overlooked or if there are further solutions to explore.

Several of the potential solutions in Table 6 refer to the need for the AER to tightly specify how data should be collected or estimated to ensure comparability. What should the AER consider or be aware of in pursing such an approach?

We largely agree with the highlighted limitations, and consider the following limitations should be added for consideration:

- customer non-compliance with connection agreements and export limits can go unnoticed, which would result in inaccurate estimates of export activity and hosting capacity
- lack of understanding of customer appetite for, and expectations around, exports when deciding on size of unit purchased and installed (as opposed to appetite for self-consumption and storage).

With regard to potential solutions to the limitations highlighted in table 6 and added above, there should be recognition of the difference in availability of data in Victoria and the rest of the NEM. For example, in proposing the AER provide guidance on modelling inputs and assumptions, there should be recognition that modelling and estimation in Victoria may need to be different given the different availability of the data.

Further, any proposed solution that requires distributors to procure data from retailers and aggregators should weight up the cost of those data sharing arrangements against the benefit to all consumers.

Q12 Steps for report development

Do stakeholders have input on our proposed approach to develop the inaugural export performance report as part of the 2023 electricity network performance report?

No comment.

Please provide any views on the proposed project steps and timelines, including suggestions to improve the approach? If option one (early release of the export performance report based on 2021–22 data) is feasible, do you prefer this over option two (December 2023 release of the export performance report based on 2022–23 data)?

We encourage the AER to further workshop proposed metrics for performance reporting with distributors and the industry, including any potential paper trial metrics for future updates to the STPIS. This could be done following the feedback received to this consultation paper and prior to conclusion of phase 1. The workshop can focus on a shortlisted number of metrics, to identify and discuss any potential road-blocks in the provision of data and/or whether the cost of calculating the metrics outweighs the benefits.

1.3. Update to benchmarking

In this section we provide feedback on questions 13-19 in the consultation paper.

Q13 Changes to productivity benchmarking

To what extent do the existing benchmarking techniques in Box 4 account for and/or do not account for export services?

We have answered this question with reference to Box 3 (the current benchmarking techniques) instead of Box 4.

The current benchmarking techniques do not separately identify export services, whereby any incurred costs are aggregated upwards with other Standard Control Services (**SCS**), and thus included but not separately accounted for in the benchmarking techniques. Importantly, the cost associated with export services is an input into the Multi-lateral Total Factor Productivity (**MTFP**), Multi-lateral Partial Factor Productivity (**MPFP**) and econometric operating expenditure (**opex**) cost function models via the SCS cost aggregator, yet it is not an output. This means there is a disconnect between inputs and outputs in the existing models.

How does this impact the productivity results generated by these techniques, and are these impacts currently material?

The inclusion of export services in SCS opex means that these costs are captured on the inputs side of the benchmarking techniques, where all else equal, higher export services-related cost pushes up the reported opex, and lower export services-related cost reduces the report opex. As there is no corresponding output measure in the models to capture what these costs represent:

- Higher export services-related opex = higher SCS opex = lower benchmarking score; and
- Lower export services-related opex = lower SCS opex = higher benchmarking score.

As more and more customers connect their CER, we anticipate export-related expenditure to become more material over time.

How do you see these issues changing over time as the level of installed export capacity increases and technology changes?

As the level of installed export capacity increases through growing penetration of CER, there will be more voltage management issues as the swings from customers importing electricity to customers exporting will sometimes exceed the limits of existing voltage standards as well as causing incidence of reverse power flows. Other issues include instances of over-voltage in the system, inverters tripping, and customer complaints.

However, the severity of the problems and the types of solutions to address it, will depend on the location and its specific circumstances.

For some customers, we may deploy an opex solution such as tap changing and phase balancing, to increase export capacity. Table 1 shows the volume of opex projects undertaken over a period of time. We undertake these works within a short time frame, and they are less expensive compared to capital expenditure (**capex**) solutions. However, the capacity of a distributor to undertake tap changing is limited by the operational range of the network to remain within the upper and lower voltage limits, and as we exhaust opportunities for these lower cost solutions, we would typically need to implement a capex solution or a static zero export limit.

Table 1: Export services opex jobs (count)

	CY2016	CY2017	CY2018	CY2019	CY2020	CY2021
Opex jobs	595	910	1635	1,962	2,130	1,779

Source: AusNet

Therefore, there is uncertainty around future opex spend as low cost opex solutions tend to follow a cycle with capex solutions (which also have opex associated with it). Overall, we anticipate opex to grow over time as demand for CER connections and exports continues to grow and more dynamic solutions are introduced such as flexible export limits.

Q14 Options for changes to productivity benchmarking

Do you agree that the options identified above are possible options for adjusting the benchmarking framework to account for export services? Are there any other options?

The AER has identified the following three options for adjusting the benchmarking framework to account for export services:

1. Reviewing the benchmarking model specifications;
2. Developing export service cost category PPIs that would relate export service-related costs as an input to relevant outputs; and
3. Calculating an OEF for export services.

Options 1 and 2

We agree that the first two options are potentially appropriate.

The first option is potentially appropriate because it would link inputs with outputs, yet further work would need to be undertaken to ensure that the output specification is relevant and statistically significant and weighted appropriately. We would welcome the opportunity for wider consultation if this option is to be progressed.

There has not been a holistic review of the current benchmarking models since they were developed in 2014, and substantive concerns raised by AusNet and other networks in recent years have not been adequately addressed. A holistic review is overdue and could be used to address the concerns regarding export services.

The second option is potentially appropriate because it also links inputs with outputs. Furthermore, it is a simpler form of benchmarking that provides useful insight, without sole reliance on a mechanicalistic and deterministic calculation that could lead to erroneous outcomes. We note that it would be very challenging to determine a meaningful metric that can used for comparison, particularly as networks are starting from very different places in terms of intrinsic hosting capacity.

Option 3 – OEFs

It is not possible to use historical spend as a way to gauge cost advantages and disadvantages and therefore calculate the OEF pertaining to each business because:

- As the complexities and issues rapidly change over the coming years, the actual cost incurred will be vastly different from historical spends. That is, the level of cost advantage or cost disadvantage calculated on the basis of historical spend cannot be applied to more recent years as the past is not indicative of future spend when so much change and progress is being made in a short time.
- OEFs is a mechanicalistic and deterministic calculation that could lead to erroneous and non-intuitive outcomes. These errors can be further amplified with use of unaudited expenditure data.
- OEFs should reflect exogenous factors that lead to different levels of spend, and not use the different levels of spend – that are somewhat within businesses' control – as a gauge of the different impact on export services. Opex spend as a proportion of total opex is a confusing metric because the same high percentage could be interpreted as an OEF cost disadvantage or inefficient opex practices.
- OEFs do not change the AER's headline MTFP and OPFP on which stakeholders, including the Customer Challenge Panel, other customer advocates and investors, place weight in the benchmarking results.

We are concerned about OEFs because they have become a prominent part of regulatory decisions and are being developed in a piece meal approach without a proper and holistic assessment that targets operating factors that have the highest prospect for explaining real differences.

Other options

It is possible to account for export services in benchmarking by craving out the cost associated with it on the inputs side, which allows export services to be treated equally on both the inputs and outputs side of the models. This would require the AER to consult on how to collect and report on export services-related costs, and then provide guidance on how this information should be captured over time to ensure this is consistent between businesses. Capital costs should be captured as well.

This option requires a similar level of data collection as option 3, while being more straight-forward and direct. It also exhibits similar characteristics to options 1 and 2 whereby export services are treated equally on both the inputs and outputs side of the models. It also has the benefit of ensuring businesses with higher export services-related cost are not disadvantaged.

Q15 AER proposed two-stage approach

What are your views on the proposed staged approach? What if any changes would you suggest?

The AER has proposed a two-stage approach to account for export services within its benchmarking analysis:

Stage 1:

- The AER would develop a guidance on how an OEF for export services can be calculated using the best available information.
- The AER will determine how and to what extent the existing ABR models do or do not account for export services and the materiality of this on the productivity results.

Stage 2 would consult further on the model specification options, new potential PPIs that could be used in conjunction with updated models, and the development and implementation issues identified in stage 1.

We do not support this two-stage approach proposed by the AER as it has already determined that the short-term solution is to develop and apply an OEF in benchmarking. For the reasons explained earlier, we do not support an OEF at all because it would only serve to confuse the matter and force businesses to be categorically labelled as having a cost advantage or disadvantage without taking into account the wide range of issues that are existing and emerging—in short it adopts an overly simplistic approach on an issue that requires far more analytical evidence to ensure the change won't reduce the accuracy of benchmarking.

We are concerned that once the AER has established a method for applying an ex-post OEF adjustments (even as a temporary measure), that approach could become embedded as the default approach, thus deferring the need to adopt more reliable approaches that are identified in Stage 2.

Q16 Calculating an OEF for base opex efficiency assessment

Have there been any changes in the export service-related cost data (capex and opex) collected since DNSPs provided responses to our initial data consultation process? Please outline these changes, including how these expenditures are categorised and reported, and provide the related cost data.

The updated cost estimate is higher, due to a change in our understanding of the AER's data request, rather than a change in circumstances. The tables below provide our updated opex and capex spend. Specifically:

- The opex spend that we provided in May 2022 only included our CER-related voltage complaints call centre cost, while the updated opex also includes the cost of complain resolution, such as tap changes and/or phase rebalancing and the costs associated with our project EDGE. We note that voltage complaints costs are treated as export services only—we do not capture impacts on exports or imports separately in our systems.
- The capex spend that we provided in May 2022 only included ICT capex. Our updated capex spend now includes network capex projects that we have recently completed, in the process of undertaking, or for which the budget has been committed, including project EDGE and the Flexible Exports trial (net of ARENA funding). We do not have readily available access to historical capex related to export services, as our systems do not separate or capture expenditure under that classification, making it difficult to filter and search for historical capex related to export services alone.

Table 2: OPEX updated - exports related costs (thousands)

	CY2016	CY2017	CY2018	CY2019	CY2020	CY2021	FY21-22
Exports related opex	535	864	1,503	2,192	1,715	1,460	1,339

Source: AusNet

Table 3: CAPEX updated – exports related costs (thousands)

	FY20-21	FY21-22	FY22-23	FY23-24
Exports related capex	3,959	8,830	9,429	3,000

Source: AusNet

To the extent export service-related costs are not separately captured in your process and systems, can you disaggregate or estimate these costs from historical expenditure? What are the barriers (i.e., regulatory, technical, practical, cost, etc.) to doing this? What type of AER guidance would be helpful to facilitate disaggregation of export service costs?

Across the board, our systems are not designed to disaggregate import and export expenditure—almost all expenditure delivers both import and export services. We anticipate this is similar across distributors, and hence

there is a need to ensure some consistency in data disaggregation and reporting, particularly if the data is to be used for benchmarking purposes.

For this submission we have had to exercise judgement in estimating and extracting the export services related cost for this submission as they do not align with how our systems and processes work. For example:

- We do not have a complaints category for export services. As a result, we have estimated our call centre cost by multiplying our call centre opex by the number of solar complaints as a proportion of total complaints.
- We do not track voltage complaints opex as part of our total opex, and have therefore had to disaggregate various categories.
- We do not have a way to disaggregate our voltage complaints opex into exports or imports related. Due to the prominence of voltage management issues since the introduction of exports on our network, we have assumed that 100% of our voltage complaints opex relates to export services.
- As noted above, we have not been able to disaggregate historical capex into export and import services, as network upgrades are typically program based, encapsulating a number of benefit streams. Our forecast capex is based on projects within our approved DER enablement funding for 2021-2026.

There is significant potential for differences in estimating approaches across the sector. If opex and capex spend are to be used for benchmarking purposes, the AER should consult on how the data is to be reported and collected. We have provided the data as best as we could, yet it is unaudited and therefore cannot be relied upon for benchmarking or quantitative analysis.

How can export services-related data be collected that would allow for consistent measurement and allocation approaches between DNSPs?

The most accurate solution would require system updates. For example, we could potentially update our system to include new fields to flag expenditure as being CER related or not, and exports related or not. However, system updates may be expensive and may not be offered by the system providers.

Alternatively, the trigger for the investment could be used to classify whether it is exports-related, imports-related or both. Because most jobs will benefit both export and import customers, it may be impossible to quarantine the benefits to a group of customers. The next best solution is deciding what the main trigger for investment is. As the number and type of customers grow and change over time, the impact of the initial investment may change the downstream benefits, e.g., an investment decision might have been made to benefit export customers but over time the benefits transfer to import customers. This would overly complicate the reporting process; therefore, the trigger is likely to be a better gauge of expenditure's classification rather than the quantum of downstream benefits.

The AER should conduct in-depth investigation and consult widely before any of these measures are undertaken, given the costs and regulatory burden associated with changes, and given we purchase software and do not develop them in-house. The practicality of updating our system would need to be investigated and considered before a decision is made to collect certain types of information.

Additionally, it would be useful to get guidance around what constitutes exports-related expenditure and if related costs such as overheads can be classified as exports related and if so, how would the quantum be determined.

Q17 Testing the efficiency of incremental export services-related opex

How could the efficiency of export services-related incremental opex be tested?

It is difficult to test the efficiency of export services-related incremental opex because all businesses have inherently different hosting capacity and are at different points of the exports journey. The constraints, complexities and therefore solutions are different for each business.

It would appear that a business case, or net present value (**NPV**) analysis, is the best method to gauge the prudency and efficiency of export services-related incremental opex.

Q18 Using the estimation method to derive incremental efficient export service opex

Do you see an estimation method as an in-principal option that could be examined for deriving incremental efficient export service opex? Why? Why not?

We support the use of a bottoms up build, business case, or NPV analysis, as the best method to gauge the prudency and efficiency of export services-related incremental opex. However, if another approach is to be

considered, then that approach or estimation method should account for observed actual opex as well as encompassing all of the following characteristics:

- Account for economies of scale as this would determine where businesses sit on the cost curve.
- Account for the range of solutions deployed because a combination of solutions is required to address voltage management and exports related issues.
- Account for the funded capex and opex for export services-related solutions captured in the latest resets for each business.
- Account for constraints as higher constraints leads to more expensive solutions and therefore higher incremental costs.
- Account for self-consumption, as the ability to export should be considered secondary to the primary purpose of CER.
- Intuitive and makes practical sense as our customers will rely on the benchmarking to form its own assessment of efficiency.

If an estimation method were required, do you have views on:

– what metrics could best proxy the size of the exporting task faced by DNSPs?

– how weights could be calculated (if needed)?

– how an efficient cost elasticity could be calculated?

We recommend the AER assess a number of different econometrics models to test the appropriateness of various input and output measures, and assess the accuracy, applicability and robustness of different models. This should include an assessment of different metrics, weights and measures of cost elasticity. The modelling should be conducted as part of the holistic review of benchmarking, as proposed in our response to question 13.

Q19 Model specifications options

To what extent do the existing outputs and inputs account for, or not account for, export services considering:

- how the given output or input accounts for, or does not account for export services?

Without sufficient analysis it is difficult to form a view as to whether the inputs and outputs in Box 5 account for export services. While we could in theory support the treatment of export services as analogous to consumption—that is, a change in the definition of energy delivered and ratcheted maximum demand to account for export volumes—in the re-specifications of the models on a conceptual level, we question how self-consumption would be accounted for. It is our view that a key purpose of enabling CER is to allow self-consumption which would assist customers to be self-sufficient and reduce carbon emissions. High levels of self-consumption would achieve the primary purpose of CER and reduce both consumption and export volumes.

We recommend the AER assess the appropriates of capturing self-consumption in the output measures, acknowledging it would require estimation techniques or purchasing data from inverter aggregators/manufacturers.

- how this impacts the productivity results generated, and the materiality of any impact?

As above, without sufficient information and analysis it is difficult to form a view on how this would impact productivity results and the materiality of the impact. This is due the fact that each business' benchmarking result is inter-related with the inputs and outcomes of other businesses within the benchmarking sample including our international counterparts. Without access to this data, which we acknowledge might be difficult to obtain, as well as the weights that could apply, we cannot form a view of the impacts.

- how you see these issues changing over time as the level of installed export capacity increases and technology changes?

This is discussed in Q13 above.

How could the existing outputs and inputs be modified or added to better account for export services in the productivity results? Please consider the options outlined in Table 9 in your response and include in your explanation what you see as the key developmental and implementation issues that would need to be resolved to progress the modification(s) (i.e. data availability for the benchmarking period (currently 2006-21), new definitions, conceptual or technical issues that would need to be resolved).

We support the consideration of a new export services output and/or new export services input provided they are relevant and statistically significant and weighted appropriately. Additionally, the estimation technique

used to develop the output and input measures should capture the characteristics outlined in our response to question 18.

However, as above, it is difficult to make a judgment on the appropriate output measures without a proper analysis of the correlation, causation and statistical significance of potential metrics. We recommend the AER undertake the analysis of the different metrics to assess what output measures are the best fit for the benchmarking model (as part of a holistic review).

Some initial comments on the proposed changes in table 9 in the consultation paper:

- The proposed changes to the definition of energy delivered and ratcheted maximum demand, to account for export volumes, may not sufficiently capture the purpose of enabling CER. As mentioned above, self-consumption is the primary driver of CER connections and should be captured, to the extent possible, in the consideration of the inputs and outputs.
- It is likely reliability or Customer Minutes Off-Supply (**CMOS**) captures export services to some extent, however self-consumption is also an important consideration in any CMOS update.

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