

# Flexible Export Limits

Final response and proposed actions

July 2023

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# 1 Executive Summary

## 1.1 Context

We are leading this project as part of the Energy Security Board's (ESB's)<sup>1</sup> Consumer Energy Resources Implementation Plan to develop policy direction and advice in relation to flexible export limits and their implementation within the National Electricity Market (NEM). The ESB's Consumer Energy Resources Implementation Plan forms part of the ESB's NEM 2025 reforms.<sup>2</sup>

This work is intended to identify and clarify regulatory arrangements needed to support the efficient implementation and uptake of flexible export limits and further builds upon findings from the Distributed Energy Integration Program (DEIP) Dynamic Operating Envelopes outcomes report.<sup>3</sup>

The AER has considered this piece of work within the context of its Strategic Plan 2020-2025, under the objectives:<sup>4</sup>

- to deliver efficient regulation of monopoly infrastructure while incentivising networks to become platforms for energy services; and
- to inform debate about Australia's energy future and support the energy transition.

We aim to maximise these outcomes noting there are unique challenges associated with flexible export limits at this stage of their implementation, including limited information on the benefits and costs of implementing them.

Flexible export limits offer an alternative to the current static export limits imposed by distribution network service providers (DNSPs) on household inverters for solar and batteries. Flexible export limits enable DNSPs to send signals to inverters to dynamically vary export limits in response to network conditions. The primary purpose of flexible export limits is the efficient and increased utilisation of consumer energy resources for the benefit of all network customers. This in turn helps to optimise the deployment of consumer energy resources from a system perspective. There are also costs to implementing flexible export limits where DNSPs need to invest in new systems or ICT equipment.

The primary purpose of this report is to analyse the potential regulatory gaps with respect to flexible export limits' implementation and identify actions that address consumer risks where applicable. The findings and actions contained in this report have been developed based on analysis of stakeholder feedback from the AER's October 2022 Issues Paper and discussions with the ESB, Australian Energy Market Commission (AEMC) and Australian Energy Market Operator (AEMO).

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<sup>1</sup> In May 2023, the Energy Ministers agreed for the ESB to transition and become the Energy Advisory Panel (EAP) from 1st July 2023.

<sup>2</sup> ESB, [Integrating CER and Flexible Demand: Stakeholder Forum](#), 28 July 2022.

<sup>3</sup> DEIP, [Dynamic Operating Envelopes Working Group: Outcomes Report](#), ARENA, March 2022.

<sup>4</sup> AER, [Strategic Plan 2020-2025: Our commitment to make energy consumers better off](#), now and into the future, 14 December 2020.

Stakeholder feedback in response to the [Issues Paper](#), published in October 2022, identified several challenges and/or barriers relating to the efficient integration of consumer energy resources, including:

- technical compliance of devices;
- governance (in terms of roles and responsibilities of the parties with access to consumer energy resources including installers, traders and other third parties); and
- access to smart meter data.

These issues are much broader than flexible export limits. Resolving these issues will support the efficient integration of consumer energy resources more broadly and will enhance the effectiveness and benefits derived from implementing flexible export limits.

Our final response comes in the context of other work being undertaken by the energy market bodies. A review of interoperability policy is underway and the AEMC is undertaking a review into consumer energy resources technical standards. The relevance of these pieces of work is discussed further in section 2.6.

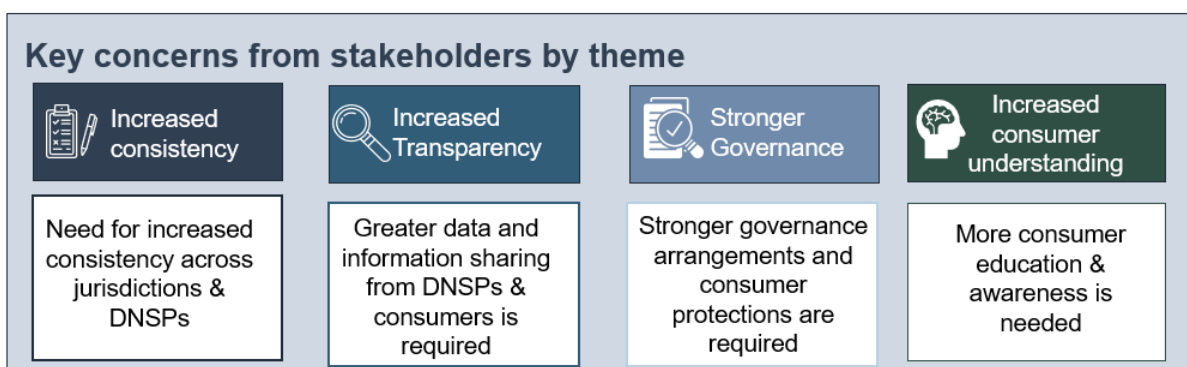
Our proposed actions are made in the context of what we can do specifically regarding the implementation of flexible export limits. Our proposed actions are categorised based on urgency and are grouped based on priority (immediate or medium term).

These proposed actions will primarily impact the functions of DNSPs, as the party currently responsible for offering flexible export limits to network customers. However, they also go to the role of traders/retailers, whose role is expanding with the potential for energy trading from consumer energy resources.

Our proposed actions, above all, are made with a lens to protect and enhance the long-term interests of consumers.

## 1.2 Response themes

Our analysis of stakeholder responses resulted in four broad themes emerging, as illustrated by Figure 1 below. These themes are what our final response focuses on addressing.



**Figure 1 - Summary of stakeholder concerns by theme**

## 1.3 Proposed actions

We have grouped our proposed actions into:

- ***immediate priorities*** - work which can be progressed now.
- ***medium term priorities*** – work to address issues that are either not as pressing or where further time is required to allow the market to develop and mature before we consider taking action.

A summary of our proposed actions is summarised in the following tables below. Further detail on our proposed actions can be found in section 4.

It is important to note that certain terms contained in the summary priority and medium-term actions tables have been bolded and italicised to indicate they are a new term with a defined meaning, as set out in the Glossary table below.

**Table 1 – Glossary of key terms**

Term	Meaning
Export Limit Guideline	This is a new Guideline that will be binding on DNSPs
Interim export limit guidance note	This is a new non-binding document intended to provide interim guidance to DNSPs while formal rule change requirements are being established.
Interim approach	Refers to new non-binding guidance to be provided under the export limit guidance note.
Binding approach	Refers to new binding obligations that will be imposed on DNSPs.
New obligation	Refers to new requirements for DNSPs to develop new material to support greater education and awareness of flexible export limits and include new terms and conditions in their connection agreements.
Voluntarily	Refers to action to be taken by DNSPs on a voluntary basis and which cannot be enforced by the AER.

### 1.3.1 Priority actions

No.	Proposed actions	Response theme addressed
1.	<p><b>Establishing export limit requirements</b></p> <p>The AER will submit a rule change request seeking a head of power for the AER to develop an <b>Export Limit Guideline</b> (“the Guideline”) which will be binding on DNSPs seeking to implement flexible export limits. The proposed content of the rule change request will be developed in consultation with stakeholders and subject to public consultation. The Guideline will set out requirements that DNSPs must comply with for the following:</p> <ul style="list-style-type: none"> <li>• Capacity allocation principles and methodology</li> <li>• Consumer participation</li> <li>• Customer education and awareness</li> <li>• Consultation requirements</li> <li>• Governance arrangements</li> <li>• Performance reporting and monitoring</li> <li>• Dispute resolution</li> </ul> <p>DNSPs will be required to comply with these requirements in developing their capacity allocation approach and in setting export limit requirements that apply for individual customers.</p> <p>As the power to establish a binding <b>Export Limits Guideline</b> under the National Electricity Rules will require a rule change, the AER will in the meantime develop an <b>interim export limit guidance note</b> to provide guidance to DNSPs on the AER’s expectations. The development of the <b>export limit guidance note</b> will also be subject to public consultation and will be developed in parallel to consultation on the rule change request.</p>	<p>Increased consistency</p> <p>Increased transparency</p> <p>Stronger governance</p> <p>Increased consumer understanding</p>
2.	<p><b>Capacity allocation principles and methodology</b></p> <p>The AER’s rule change request will include establishment of a mechanism for the AER to review and approve DNSPs’ capacity allocation methodologies to ensure consistency with the capacity allocation principles, as specified in the <b>Export Limit Guideline</b>, and have regard to any other matter the AER considers relevant.</p> <p>This rule change request could also include amendments to require DNSPs to ensure that their connection policies are consistent with the capacity allocation principles. The precise content of the rule and how the outcomes will be made binding will be more clearly</p>	<p>Increased consistency</p> <p>Increased transparency</p>

No.	Proposed actions	Response theme addressed
	<p>defined through consultation on the development of the rule change request and the associated rule consultation process.</p> <p>The AER proposes to address this gap in the interim, while the rule change request is being finalised, through the development of an <b><i>interim export limit guidance note</i></b>.</p>	
3.	<p><b>Consumer participation</b></p> <p><b>3a. Interim approach</b></p> <p>To optimise consumer decision-making the AER:</p> <ul style="list-style-type: none"> <li>Proposes that DNSPs <b><i>voluntarily</i></b> provide separate Model Standing Offers to customers for both flexible and static export limits under existing arrangements, noting some DNSPs already do this.</li> <li>Proposes that DNSPs implement flexible export limits on an <u>opt-in basis</u> with static export limits as the default. We note that the AER's future <b><i>Export Limit Guideline</i></b> may establish requirements about how DNSPs are to offer flexible export limits.</li> </ul> <p><b>3b. Binding approach</b></p> <p>The AER will consider including in its rule change request a proposed requirement that DNSPs to provide separate Model Standing Offers to customers for flexible and static export limits. Consideration of the need for such a requirement may be informed by consumer feedback and DNSPs' voluntary uptake of proposed action 3a above.</p> <p>This requirement would impose an additional obligation to that outlined in <b>proposed action 5</b>, which only relates to the information provided to customers who opt-in to a flexible export limit.</p> <p>The additional obligation would require DNSPs to provide information to inform customers before they decide whether to opt-in to a flexible export limit. This would include information about both flexible and static limits, and their respective Model Standing Offers.</p>	Increased consistency
4.	<p><b>Consumer understanding and interest</b></p> <p>We propose that the <b><i>interim export limit guidance note</i></b> provides non-binding guidance to DNSPs on customer awareness and consultation requirements. Our binding <b><i>Export Limit Guideline</i></b> will set out mandatory requirements for customer education and awareness, consultation, and stakeholder engagement. The AER</p>	Increased consistency Increased transparency



No.	Proposed actions	Response theme addressed
	<p>proposes to work closely with Energy Consumers Australia to help educate consumers and installers on consumers' rights and responsibilities when exporting to the grid, and how connection agreements operate (including Model Standing Offers), as we note that many consumers are unaware of the existence of connection agreements or do not understand the nature of their terms and conditions on export limits.</p>	<p>Increased consumer understanding</p>
5.	<p><b>Connection agreements</b></p> <p>We have received feedback that connection agreements are difficult for consumers to understand, with many consumers not being aware of their existence. This means that customers may not receive adequate information about the implications and impacts of any flexible export arrangements that they entered into.</p> <p>The AER will consider including in its rule change request a <b>new obligation</b> that requires DNSPs to:</p> <ol style="list-style-type: none"> <li>1. Provide additional explanatory material about flexible export limits, including about: <ul style="list-style-type: none"> <li>○ the terms and conditions of the DNSPs' Model Standing Offers that govern the application of flexible export limits.</li> <li>○ the DNSP's compliance obligations in relation to Model Standing Offers that include flexible export limits.</li> <li>○ that where a third-party provider manages a consumer's energy resources through a flexible export limit, a separate agreement between the DNSP and third-party provider is required.</li> <li>○ the specific operating parameters of the customer's flexible export limit and the circumstances in which this may vary.</li> </ul> </li> <li>2. Include particular categories of terms and conditions or specific terms and conditions in a customer's contract with a DNSP relating to flexible export limits.</li> </ol> <p>The AER will provide interim non-binding guidance on what is expected of DNSPs when providing information about these terms and conditions through the <b>interim export limit guidance note</b>. We envisage that the precise content of the proposed changes above</p>	<p>Increased consistency</p> <p>Increased transparency</p> <p>Stronger governance</p>

No.	Proposed actions	Response theme addressed
	and how DNSPs will need to comply will be clearly defined through the consultative rule change process.	
6	<p><b>Governance of consumer energy resources and traders and governance of flexible export limits</b></p> <p>There is further work to be undertaken on the regulatory framework to clarify roles and responsibilities, and to capture third parties' non-compliance with technical standards.</p> <p>We propose that market bodies continue working together as a matter of priority to further explore issues around roles and responsibilities of participants and also different regulatory models for providing technical oversight throughout the consumer energy resource journey.</p>	<p>Increased consistency</p> <p>Increased transparency</p> <p>Stronger governance</p>
7.	<p><b>Monitoring export limit performance and information provision</b></p> <p>We propose that as part of the binding <i>Export Limit Guideline</i>, the AER can impose compliance reporting requirements that are in addition to the compulsory information gathering powers that will be used to obtain the information specified in the export service information request to develop the export service report.</p> <p>The AER's final report on incentivising and measuring export service performance included metrics for monitoring flexible export limit performance. These metrics are specified in the AER's export service strawman information request published in March 2023.<sup>5</sup></p>	<p>Increased transparency</p>
8.	<p><b>Further AER guidance material</b></p> <p>We propose to amend our current guidance note on consumer energy resources integration expenditure to provide more guidance to DNSPs on how they should consider network expenditure alternatives to support business cases for expenditure to implement flexible export limits.</p> <p>We also propose to amend our Export Tariff Guidelines to require networks to explain the interaction and inter-relationship between export pricing and flexible export limits.</p>	<p>Increased consistency</p>

<sup>5</sup> AER, [Export services straw man information request](#), November 2022, tables 11.0.8, 11.0.10-11.

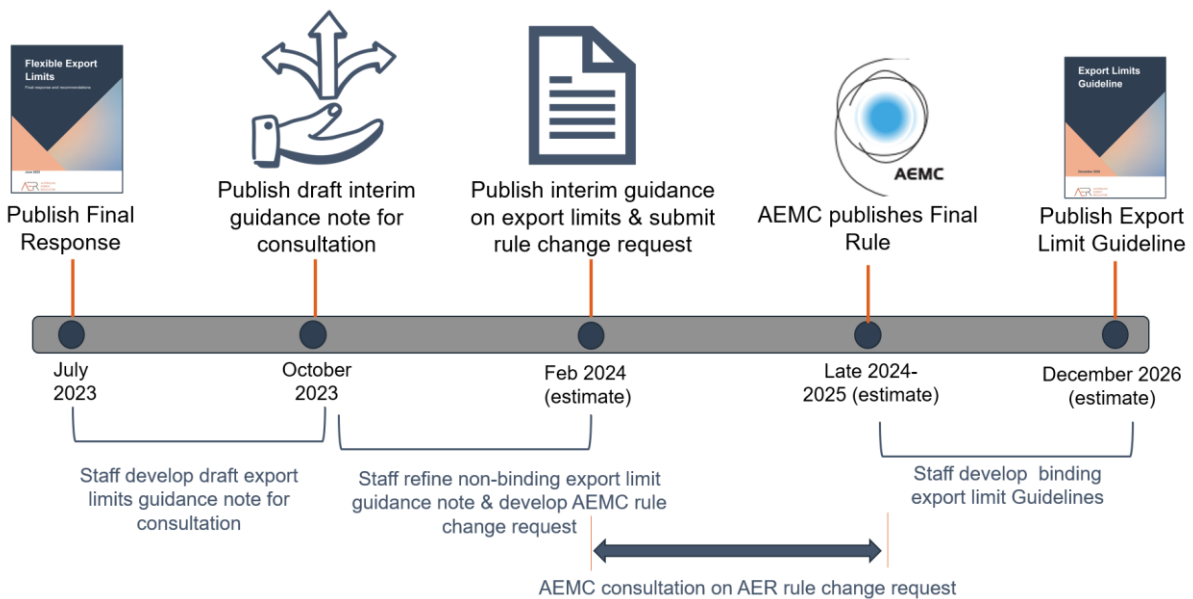
No.	Proposed actions	Response theme addressed
9.	<p><b>Communication protocol</b></p> <p>We propose to work with other market bodies to explore the potential to provide integrated guidance about national consistency in communication protocols.</p> <p>Communication protocols enable flexible export limits to be communicated by DNSPs to inverters. We are supportive of exploring the potential benefits of a nationally consistent protocol.</p>	<p>Increased consistency</p> <p>Increased transparency</p> <p>Stronger governance</p>

### 1.3.2 Medium-term actions

No.	Proposed actions	Response theme addressed
10.	<p><b>Notification period – provision of forecasting information</b></p> <p>The AER's view is that we should provide more clarity on flexible export limits forecasting information required to support efficient energy market operation. While this is an issue that does not require an immediate response, a framework could be developed in the future when the market is more mature. This issue should be revisited as part of our review of export services (see action 12).</p>	<p>Increased consistency</p> <p>Increased transparency</p>
11.	<p><b>Interaction between flexible export limits and export pricing</b></p> <p>The AER will communicate expectations that if networks are seeking to implement flexible export limits they must:</p> <ol style="list-style-type: none"> <li>1) explain the interaction of flexible export limits with export tariffs and intrinsic hosting capacity as part of consultation on developing their Tariff Structure Statement.</li> <li>2) explain the interaction and operation of flexible export limits in the context of the networks' broader consumer energy resources integration strategy.</li> </ol>	<p>Increased consistency</p> <p>Increased transparency</p>
12.	<p><b>Export services review</b></p> <p>As part of the AER's 2027 review of incentive arrangements for export services, we will consider whether there are opportunities for further standardisation and harmonisation of flexible export limit arrangements to deliver increased consumer and market benefits. We can undertake the review earlier if sufficient data becomes available.</p>	<p>Increased consistency</p> <p>Increased transparency</p>

No.	Proposed actions	Response theme addressed
	<p>Matters that could be reviewed as part of the 2027 export services review include a notification period framework, through which forecasting information about flexible export limits is provided. Consumer opt-in arrangements could also be reviewed at this time pending take-up.</p> <p>The AER's review of incentive arrangements for export services in 2027 will assess their effectiveness and determine whether further refinements to regulatory settings are required to promote more efficient network utilisation and market operation.</p>	

The below diagram illustrates the steps to be taken and anticipated timing in establishing a regulatory framework for flexible export limits.



**Figure 2 - Overview of next steps**

## 1.4 Issues being addressed by other workstreams

For stakeholder clarity, we have identified the following issues that are associated with the implementation of flexible export limits and are out of scope of our proposed actions for this final response. We have addressed these through our analysis of stakeholder issues and identified where they have or will be considered under other workstreams across market bodies.

Issue	Workstream
Consumer Energy Resources technical standards compliance and enforcement issues	<a href="#">AEMC Consumer Energy Resources technical standards review</a>
Development of governance arrangements for Consumer Energy Resources and compliance and enforcement of technical standards	ESB and <a href="#">AEMC Consumer Energy Resources technical standards review</a>
Development and implementation of a smart meter data access regime	ESB and <a href="#">AEMC Consumer Energy Resources technical standards review</a>
Device capability and communication protocol (CSIP-Aus)	<a href="#">ESB interoperability work program</a>
Consumer protection issues	<a href="#">AER review of consumer protections for future energy services</a>

## 2 Introduction and Background

### 2.1 Purpose of this paper

In late 2021, the AER was tasked to provide policy direction and advice to the Energy Security Board (ESB) in relation to dynamic operating envelopes and their implementation. The scope of the work was to:

- identify areas of the framework that required attention in the immediate term;
- present options to resolve these perceived gaps; and
- identify where perceived gaps would be addressed by other existing reform or review processes including matters that would require attention over the longer term.

This paper provides policy direction on the regulatory framework for the implementation of flexible export limits. We changed the name of the workstream as we recognised the complexity of the term ‘dynamic operating envelopes’ for consumers and other stakeholders, and to reflect that in our [Issues Paper](#), we focussed only on export limits, thereby specifically excluding import limits from consideration. This paper considers the matters raised by stakeholders in consultation and identifies actions to ensure flexible export limits are implemented appropriately across the different jurisdictional contexts of the National Electricity Market.

As noted in our [Issues Paper](#), the issues under consideration are not exhaustive nor intended to prevent further development of flexible export limits or dynamic operating envelopes more broadly. We expect the reform process to be iterative, given the rapid pace of change in the consumer energy resources sector. Our final response is intended as a first step towards resolving the identified gaps in the regulatory framework and should be considered alongside the broader set of consumer energy resources regulatory and policy reforms undertaken by the AER and the other market bodies.

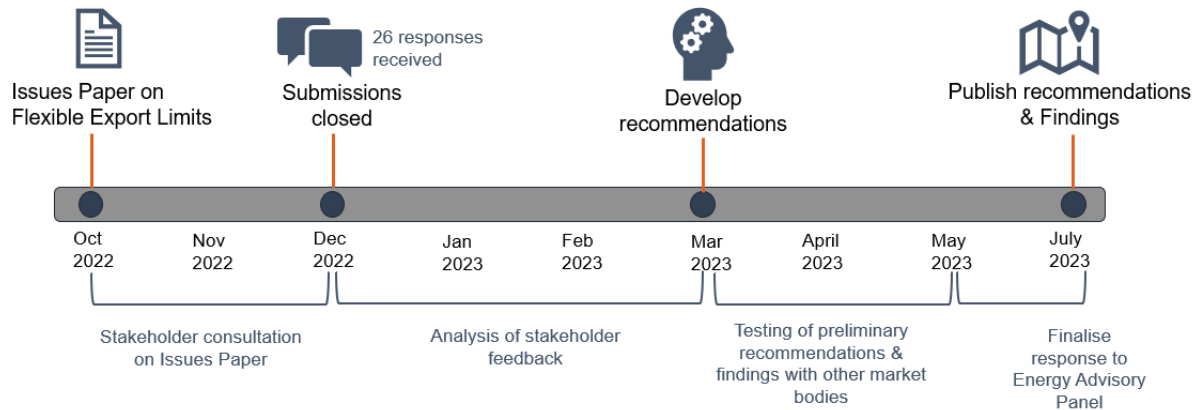
This work builds on and was informed by the findings of the Distributed Energy Integration Program (DEIP) Dynamic Operating Envelopes outcomes report.<sup>6</sup>

The implementation of flexible export limits has important implications for consumers and our role in relation to providing oversight of distribution network investment and pricing, consumer protection, governance of customer connections, and DNSP enforcement and compliance. As such, this paper also seeks to address common causes for concern and provides clarifications on the AER’s role in the implementation of flexible export limits.

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<sup>6</sup> DEIP, [Dynamic Operating Envelopes Working Group: Outcomes Report](#), ARENA, March 2022.

## 2.2 Timeline



**Figure 3 - AER flexible export limit consultation timeline**

We released the Flexible Export Limits Issues Paper in October 2022. Following this, we conducted stakeholder engagement with market bodies, DNSPs, original equipment manufacturers and consumer advocates. We have also been actively working with other market bodies on interrelated workstreams from late 2022 to early 2023.

We received 26 submissions to our Issues Paper with consultation closing in December 2022. Since January we have engaged in further consultation with market bodies on interrelated work, including an in-person workshop in March 2023.

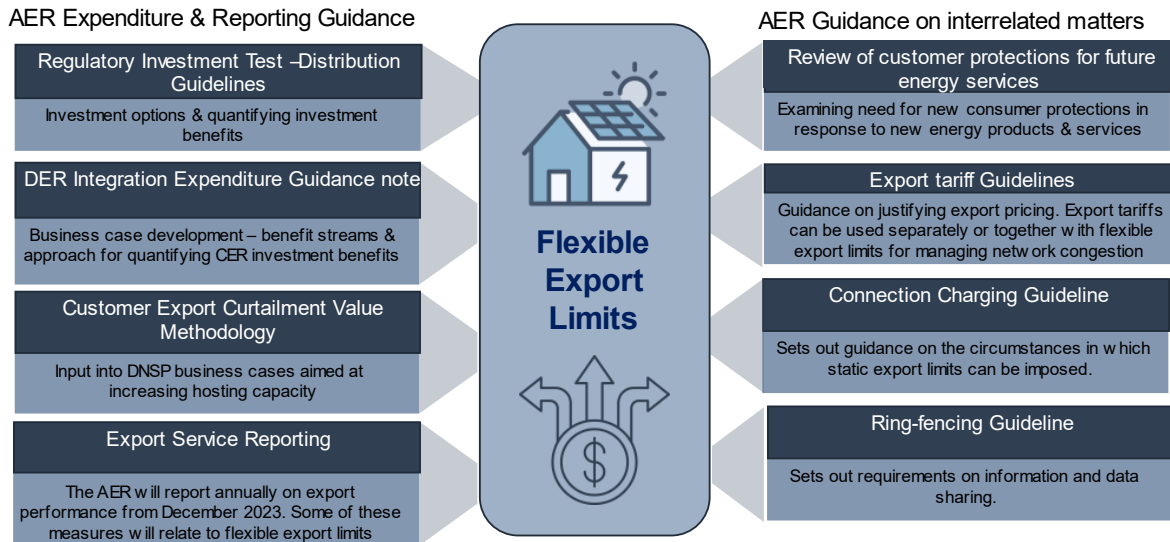
## 2.3 Related AER workstreams

The AER aims to ensure consumers that own energy resources are able use those resources to consume, store and trade energy as they choose in support of the broader long-term interests of all consumers. We are engaged in a variety of workstreams in support of this goal and in conjunction with other market bodies' priorities and activities. Our Consumer Energy Resources Strategy<sup>7</sup> outlines how these workstreams fit together holistically, under a framework of consumer-centric design.

Our work is illustrated and expanded on in the context of flexible export limits below.

Some of these pieces of work will need to be updated to reflect the proposed actions we make below in section 4, to ensure clarity and consistency in regulatory arrangements for implementing flexible export limits.

<sup>7</sup> AER, [Consumer energy resources strategy](#), 3 April 2023. See also Appendix B.



**Figure 4 - Overview of AER workstreams which relate to flexible export limits**

### 2.3.1 Annual reporting on export service performance

Following changes made as part of the AEMC’s access, pricing and incentive rule change, we will report annually on export service performance from December 2023. This is in response to changes made to the rules to recognise exports as a core service offering of DNSPs.<sup>8</sup>

As part of our *Incentivising and measuring export service performance* review, we consulted on what performance measures and contextual information to include in our export performance reports. Some of these measures will relate to flexible export limits, including:

- Customers with flexible export limits
- Average upper limit for customers with flexible export limits (kW)
- Average time the upper limit was unavailable for customers with flexible export limits (hours)

### 2.3.2 Connection Charge Guideline

The AER released in April 2023 an updated Connection Charge Guideline and accompanying explanatory note to reflect changes made to the National Electricity Rules in August 2021.<sup>9</sup>

The Guideline describes the circumstances (or how to determine the circumstances) under which a DNSP may impose a static zero export limit to a micro embedded generator (such as a household solar system or battery) seeking to connect to the network.

Flexible export limits may be used in place of zero export limits by distribution networks as more consumer energy resources are connected to the network.

<sup>8</sup> AEMC, [Access, pricing and incentive arrangements for distributed energy resources rule change](#), 2021.

<sup>9</sup> AER, [Connection charge guideline for electricity customers](#), April 2023.



### **2.3.3 Review of consumer protections for future energy services**

The AER is undertaking a review of energy consumer protections to assess whether they will remain fit for purpose in a transitioning energy market. This includes analysis of how new energy products and services could create gaps in the protection framework set out under the National Energy Customer Framework (NECF). The review forms part of the ESB's Consumer Energy Resources Implementation Plan.

The AER initiated the 'Review of consumer protections for future energy services', formerly known as the 'Retailer authorisation and exemption review' in April 2022, publishing an issues paper for public consultation.<sup>10</sup> In October 2022, the AER published an options paper outlining three reform options.<sup>11</sup> The AER's preliminary position is that the current regulatory framework will not be fit for purpose for the future energy market given the potential risks posed by new energy products and services and that many of these are unlikely to be captured by the current framework.

### **2.3.4 Export Tariff Guidelines**

The AER's Export Tariff Guidelines provide information and guidance to DNSPs and other stakeholders about how networks will be required to justify any future proposals for two-way pricing (to match two-way energy flows on electricity networks), and how they should define the basic export level, the no additional cost export service which networks must provide to all customers with rooftop solar.

Flexible export limits and export tariffs will likely interact in various ways depending on DNSPs' proposals for both tools, as they can be used separately or together to manage network congestion. The Export Tariff Guidelines require DNSPs to account for the implementation of and interactions with dynamic operating envelopes when considering the long run marginal cost drivers for export services.

### **2.3.5 DER integration expenditure guidance note**

The DER integration expenditure guidance note<sup>12</sup> outlines the AER's expectations for how DNSPs should develop business cases and quantify the benefits associated with network investments for integration of consumer energy resources, specifically, to increase hosting capacity. There are several benefit types and value streams that DNSPs may quantify, and our customer export curtailment value methodology is used to estimate a subset of these potential benefits (see section 2.5.6 below).

As part of its regulatory proposal, a DNSP will need to explain its proposed approach to export-related planning and investment against alternative options. The guidance note sits alongside the RIT-D guideline, amongst other guidance, and improves the AER's expenditure assessment toolkit by providing clarity and certainty to DNSPs and their

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<sup>10</sup> AER, [Retailer authorisation and exemption review – Issues paper](#), April 2022.

<sup>11</sup> AER, [Review of consumer protections for future energy services – Options paper](#), October 2022.

<sup>12</sup> Notwithstanding that this is published as the DER integration guidance note, for the purposes of consistency, we refer to it as the consumer energy resources integration expenditure guidance note throughout this document.

customers about what information is expected to be in consumer energy resources integration expenditure proposals, and how such proposals are assessed.

DNSPs should develop a detailed technical understanding of their networks' abilities to accommodate increasing levels of consumer energy resources, as evidenced by an assessment of network hosting capacity. Understanding network hosting capacity is critical to the design and implementation of flexible export limits by DNSPs.

With the greater increase of consumer energy resources, DNSPs are more likely to offer flexible export limits. The consumer energy resources integration expenditure guidance note already reflects that DNSPs should include information on any plans to implement dynamic operating envelopes (which encompass flexible export limits), including the timing of trials, methods for capacity allocation and consumer engagement.

### **2.3.6 Customer export curtailment value methodology**

In June 2022, the AER published its customer export curtailment value methodology, which supplements the guidance provided under the AER's consumer energy resources integration expenditure note and is aimed at guiding efficient levels of network expenditure for the provision of export services. Customer export curtailment values are intended to be used as an input into DNSPs' business cases for network investments which will alleviate the curtailment of customer exports. In particular, customer export curtailment values capture the avoided dispatch costs in the wholesale electricity market, when exports from consumer energy resources displace the need for centralised electricity generation.

The use of customer export curtailment values is relevant to consideration of flexible export limits, as they help to inform whether networks should invest in augmentation to increase hosting capacity. They may also help in supporting networks' business cases to implement flexible export limits as a means for alleviating network congestion and increasing its available hosting capacity, without triggering the need for augmentation.

### **2.3.7 Regulatory Investment Test for Distribution (RIT-D) application guidelines**

The Regulatory Investment Test (RIT) is a cost benefit analysis that network businesses must perform and consult on before making major investments in their networks. When undertaking this cost benefit analysis, network businesses must give due consideration to what options are out there, before identifying the best way to address needs on their networks.

The RIT for Distribution (RIT-D) and accompanying application guidelines establish consistent, clear and efficient planning processes for distribution network investments in the National Electricity Market. The RIT-D provides guidance to DNSPs on how to quantify the benefits of investing in a large distribution project to meet a need on the distribution network. Before investing in a large distribution project, a DNSP must consider all credible options to meet that need, before selecting the option that maximises the net economic benefit across the National Electricity Market. This reduces the risks that consumers will pay for inefficient investments.

We consider that as flexible export limits are taken up by distribution networks, more guidance could be included in the RIT-D and associated application guidelines around the approach to calculating what benefits can be considered for flexible export limits.

### **2.3.8 Ring-fencing**

The AER's ring-fencing – electricity distribution guideline aims to prevent cross-subsidisation and discriminatory behaviour via a range of controls, including by stipulating a range of obligations on DNSPs to identify and separate costs and business activities of delivering regulated network services from the delivery of other services.

The ring-fencing framework prevents DNSPs from using ring-fenced information for a purpose other than the purpose for which the ring-fenced information was acquired. In the context of flexible export limits, DNSPs will likely require connection point data provided by CER to facilitate effective implementation. In our issues paper, we considered that the existing ring-fencing framework could be leveraged to set expectations around consumer data protection.

Given the speed and scope of energy transition, there are likely to be further regulatory developments in the future. While implementing the ESB post-2025 market reforms, we will continue to re-examine our approach to ring-fencing and respond to developments as needed.

## **2.4 What are “flexible export limits”?**

In the NEM, the export of excess energy generated from consumer energy resources within distribution networks has generally been managed through static (fixed) export limits. Static limits must be conservative to keep generation within a network's hosting capacity and share that network's capacity across all consumers, particularly during periods of high congestion. Static limits are not guarantees of a fixed or maximum level of export, as a customer's ability to export is still subject to local system constraints, however they do provide an indication of the general availability of export capability. As increasing volumes of consumer energy resources are connected, consumers may face lower static export limits to avoid the increased risk of network operating limits being breached.

Static limits are generally set based on network limit stated assumptions reflecting the periods where the network will not be able to accommodate additional export, even if these only occur infrequently. This can result in consumers being constrained to these limits at times even where there may be additional capacity available for export during large parts of the year.

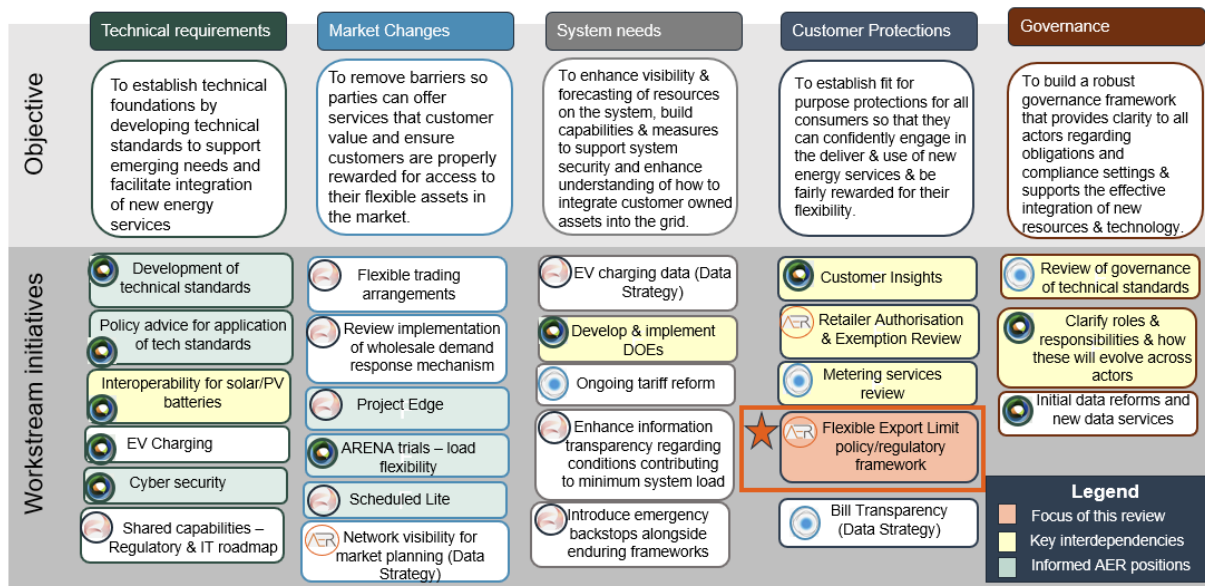
As such, some networks are implementing 'flexible export limits', where consumers are given variable export limits which could, as an example, be set at 10kW for large periods of time and then be limited to 1.5kW at other times where there is network congestion. Some distribution businesses such as SA Power Networks (SAPN) have implemented flexible export limits in trials. In South Australia, from 1 July 2023, new consumer energy resources installations will be required to be flexible limit capable, meaning most new and upgraded systems will have to be capable of remotely updating their export limit.

## 2.5 Interaction with Energy Security Board and other market body workstreams

The ESB was tasked by Ministers to deliver the Consumer Energy Resource Implementation Plan as part of the Post-2025 Market Reforms. The ESB has been replaced with the Energy Advisory Panel, made up of representatives from the energy market bodies – AER, AEMC and AEMO – as well as an observing member from the Australian Competition and Consumer Commission.

Energy market bodies collectively released three consultation papers in September and October 2022 as part of activities being progressed under Horizon 1 of the ESB’s Consumer Energy Resources Implementation Plan. These were the AER’s flexible export limits Issues Paper, the ESB’s interoperability directions paper, and the AEMC’s review of consumer energy resources technical standards. Figure 5 below, provides a snapshot of the different streams of work being progressed as part of the ESB’s Consumer Energy Resources Implementation Plan. It seeks to illustrate where flexible export limits fit within the broader Implementation Plan and to highlight key interactions and interdependencies between different workstreams being led by other market bodies.

Further detail on key reforms and how they interrelate with our work to establish regulatory arrangements to support the implementation and uptake of flexible export limits is discussed in further detail below.



**Figure 5 - interaction with other workstreams of the ESB’s Consumer Energy Resources Implementation Plan**

### 2.5.1 ESB interoperability workstream

The ESB has delivered a directions paper under the interoperability workstream looking at whether there is a need for requiring a consistent communications protocol across all jurisdictions, and, if so, what that technology standard should be. They have also been considering how that standard could be set, and who would ensure it is complied with. Communication capability and protocols are prerequisites for flexible export limits, as they

allow the devices to receive signals which increase or decrease exports. The ESB's work program has looked at the costs and benefits of implementing a Common Smart Inverter Profile - Australia (CSIP-Aus) as the national communications protocol for all consumer energy resources devices.

A consistent standard supports the customer journey for consumer energy resources, by making it easier to choose different energy services (including switching), expanding opportunities to be rewarded for participating in different markets, and reducing the complexity and time associated with managing and maintaining equipment.

The final report on interoperability is due to Ministers in 2023. As part of this, the ESB commissioned a cost-benefit analysis on setting CSIP-Aus as the consistent technical standard for new and replacement installations. While the ESB's directions paper sets out the case for a 'flexible export ready' requirement, any requirement on new or replacement installations needs to be appropriately scoped to maximise benefits for consumers. This involves the assessment of different implementation options including whether inverters should be flexible export 'ready' with communications and enrolment complete or 'capable' where they have the technical ability to perform flexible export functionality but require configuration to activate this service.

### **2.5.2 AEMC review into consumer energy resources technical standards**

The AEMC is undertaking a review into compliance and enforcement of consumer energy resources technical standards across the NEM. The review's objective is to support the successful integration of consumer energy resources for the long-term benefit of electricity consumers.

On 27 April 2023, the AEMC published its draft report to the review. The report contained 12 draft recommendations for immediate action that seek to increase future and existing compliance with consumer energy resources' technical standards. It also made a draft recommendation that jurisdictions and energy market bodies work together to explore the options and viability of reforming the regulation of current and future consumer energy resources' technical standards from a national perspective.

In the context of the AER's work on flexible export limits, including feedback from stakeholders, the AER will continue to engage in work on the broader reform of consumer energy resources regulation.

### **2.5.3 AEMC smart meter review**

The AEMC's review of the regulatory framework for metering services will determine whether the reforms introduced under the *Expanding competition in metering and related services* rule change have met expectations and whether changes are required to improve the efficiency and effectiveness of the regulatory framework for metering services. The review will also determine whether the regulatory framework for metering services supports the implementation of other electricity sector reforms where metering services will play a key role.

This review is linked to the AER's work on flexible export limits given that smart meter data access for DNSPs is a critical enabler of flexible export limits, as it allows DNSPs to have better visibility of their networks and data and therefore estimate network hosting capacity

more accurately. Smart meter data also plays a role in ensuring compliance of consumer energy resources which is a critical enabler of the operation of flexible export limits.

#### **2.5.4 ESB Customer Insights Collaboration**

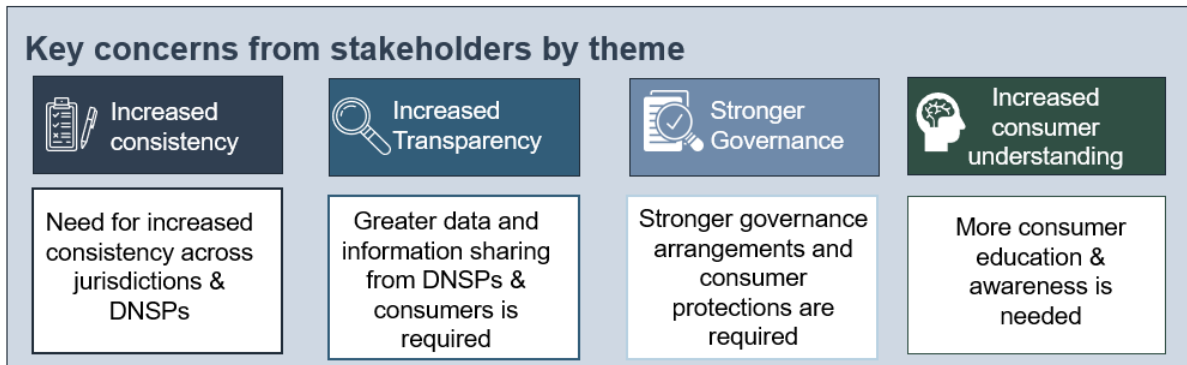
The ESB's Customer Insights Collaboration enables an end-to-end view of customer issues associated with the integration of consumer energy resources and flexible demand. The Customer Insights Collaboration process tests assumptions and understanding about how customers may want to engage with a variety of service providers or products.

The ESB, AEMC and AER jointly held a Customer Insights Collaboration workshop looking at three key reforms –interoperability, the consumer energy resources technical standards review, and flexible export limits recognising the close relationship between these three key reforms. The workshop explored the customer insights and developed a shared customer journey, through which we uncovered common customer needs, impacts, benefits and possible risks to be considered.

The knowledge sharing report is available [here](#).

### 3 What we heard

Our analysis of stakeholder submissions revealed four common themes in which stakeholder concerns could be grouped by, as indicated by the diagram below. We have sought to develop our so that they address the key stakeholder concerns raised in response to our Issues Paper.



**Figure 6 - Overview of key stakeholder concerns**

#### 3.1 Primary use case of flexible export limits

Feedback was sought on the primary use case for flexible export limits which was defined in the Issues Paper as *‘the efficient and increased utilisation of the shared hosting capacity on the distribution network to enable consumers to obtain the benefits of exporting their energy resources such as solar PV and household batteries to the grid.’*

##### 3.1.1 Stakeholder views

In general, most stakeholders agreed with the primary use case that was outlined in the Issues Paper.

Several stakeholders agreed with the primary use case but also noted other possible use cases for flexible export limits such as frequency control ancillary services<sup>13</sup>, management of minimum demand and under frequency load shedding<sup>14</sup>, and remote disconnection and reconnection.<sup>15</sup>

Both EnergyAustralia and Energy Queensland (Energex and Ergon) suggested further changes to the framing of the primary use case so that it was more customer centric and to clarify that benefits accrued to all customers and not just those who own energy resources such as solar and batteries.

<sup>13</sup>See submissions from AGL, *Flexible Export Limits Issues Paper*, 9 December 2022, p. 1; and CitiPower/PowerCor/ United Energy, *Flexible Export Limits Issues Paper*, 8 December, p. 3.

<sup>14</sup>CitiPower/PowerCor/United Energy, *Flexible Export Limits Issues Paper*, 8 December, p. 3.

<sup>15</sup> SwitchDin, *Flexible Export Limits Issues Paper*, 8 December, p.5.

### 3.1.2 AER analysis

We acknowledge that there are many potential use cases for flexible export limits. Our rationale for focusing on defining a primary use was to assist in identifying gaps in the current framework which might act as:

1. either a barrier to the uptake or implementation of flexible export limits; or
2. create inefficiencies that reduce the effectiveness and benefits derived from flexible export limits.

By focusing on this, we have been able to identify key areas of the regulatory framework that require review to create the right regulatory settings to support the efficient uptake and implementation of flexible export limits. Section 4 sets out the prioritised actions that the AER recommends taking over the short to medium term actions to address the key gaps we have identified.

In our Issues Paper, we outlined our preference to adopt a principles-based approach towards establishing appropriate 'guard rails' for consumers with regards to flexible export limits. Under this approach 'guard rails' would be established by setting the regulatory outcomes that need to be achieved (defining the 'what') as opposed to prescribing the specifics of 'how' DNSPs achieve the prescribed outcomes. We considered that such an approach is appropriate given that this is still an emerging area. Our view is that this provides the right settings to support further innovation and permits other use cases to further evolve.

The AER agrees with the feedback received from EnergyAustralia and Energy Queensland regarding the need for further clarification of the primary use case. Based on their feedback we have revised the flexible export limits primary use case to clarify that this is aimed at delivering benefits of all customers.

Our revised primary use case for flexible export limits is defined as follows:

*'The efficient and increased utilisation of shared hosting capacity on the distribution network obtained from better management of consumer energy resources for the benefit of all consumers while minimising the need for network augmentation.'*

Our changes to the primary use case seek to better reflect the fact that networks are at differing stages and levels of maturity when it comes to operating their network dynamically. For example, both SAPN and Energy Queensland are relatively advanced in the development of flexible export limits and are seeking to implement this more broadly across their network, whereas other networks are still in the early design and trial phase of flexible export limits.

We have clarified that the primary use case is aimed at delivering benefits to all consumers and not just those who have invested in consumer energy resources. We consider all consumers benefit from increased network utilisation and deferred network augmentation through lower network charges. Further, the ability to harness increased small-scale renewable energy and storage is likely to deliver benefits to all consumers by displacing a proportion of wholesale generation and storage costs, thereby delivering a reduction in consumers' total electricity bills.



## 3.2 Regulatory approach

In our Issues Paper, we outlined our preliminary view that it would be inappropriate to require DNSPs to implement flexible export limits. Our view was that DNSPs are best placed to determine *when* and *if* flexible export limits are necessary for efficiently managing network congestion to improve network hosting capacity.

Given that flexible export limits are still largely in the early stages of development, we considered an outcomes-based regulatory approach would likely be most appropriate as this would provide DNSPs with the flexibility to innovatively determine how to integrate flexible export limits into their existing capability, systems, and infrastructure at least cost.

Our Issues Paper sought feedback from stakeholders on the appropriateness of this approach.

### 3.2.1 Stakeholder views

There was strong stakeholder support for an outcomes-based approach towards setting appropriate 'guard rails' for how flexible export limits should be implemented.

Several stakeholders noted that DNSPs are at different stages in terms of penetration of consumer energy resources, system capability, access to smart meter data, maturity, and readiness.<sup>16</sup> Adopting an outcomes-based approach would provide greater flexibility for DNSPs to implement flexible export limits in a manner that allows for differences in operational circumstances and customer expectations to be accommodated.

These stakeholders further noted that framework settings needed to be flexible and adaptable given that future use cases for flexible export limits are still largely unknown and are being tested. Stakeholders expressed concern that the establishment of a prescriptive framework during the formative stages of flexible export limits might stifle innovation and the feasibility of other use cases.

Several stakeholders expressed views on the need for a nationally consistent approach towards the implementation of flexible export limits to reduce complexity and costs and promote consistency to drive greater customer uptake of flexible export limits.<sup>17</sup>

### 3.2.2 AER analysis

We consider an outcomes-based approach (rather than prescriptive measures) should be taken to guide the efficient implementation of flexible export limits. This approach is more likely to promote efficient outcomes by providing DNSPs with flexibility to determine how to best meet their obligations based on their operational circumstances. It also allows for the framework to adapt and evolve more easily over time and would allow for the development of other possible use cases for flexible export limits.

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<sup>16</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Energy Networks Australia, Origin, Energy Consumers Australia, ARENA, Ausgrid, Jemena, Endeavour Energy, Essential Energy, Energy Queensland, CitiPower/PowerCor/United Energy, SA Power Networks, and AusNet.

<sup>17</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Energy and Water Ombudsman SA and Energy and Water Ombudsman Queensland, Joint OEMs, Tesla, Simply Energy, AGL, EnergyAustralia, Red Energy and Lumo Energy.

Section 4 outlines further details on the obligations, heads of power, binding guidelines and guidance we will be seeking to establish to promote a more nationally consistent approach towards the implementation of flexible export limits.

## 3.3 Capacity allocation

In our Issues Paper, we identified the lack of transparency and consistency in how DNSPs allocate available hosting capacity as a key gap in the current framework that required immediate action to support the efficient uptake of flexible export limits.

### 3.3.1 Capacity allocation principles

Our Issues Paper sought to test stakeholder views on whether the DEIP Working Group principles provide a suitable foundation for establishing capacity allocation principles, whether the principles should be binding and auditable, and whether there was a need for principles for static export limits to be developed.

The capacity allocation principles we proposed are as follows:

1. DNSPs are responsible for setting flexible export limits, with the calculation methodology used to determine the limits being transparent and subject to stakeholder consultation.
2. Allocation should seek to maximise the use of network export hosting capacity while balancing customer expectations regarding transparency, cost and fairness.
3. Capacity allocation can initially be based on net exports and measured at the customer's point of connection to the network.
4. Capacity should be allocated to small customers irrespective of the size or type of customer technology (e.g., solar or batteries) at the customer premises.
5. In the near term, flexible export limits should be offered on an opt-in basis with capacity reserved only to make good on legacy static limit connection agreements, with efficient incentives provided for customers to transition to flexible export limits over time.

### 3.3.2 Stakeholder views

Stakeholders broadly supported the development of a nationally consistent and harmonised set of capacity allocation principles. Most stakeholders considered the DEIP Working Group principles were largely appropriate but noted that further work was required to refine the wording, provide further guidance on how the principles would be put into practice, and clarify how tensions between principles would be resolved.

There was general support by some stakeholders for capacity allocation principles for static export limits to be also developed.<sup>18</sup> The Australian Energy Council noted the need for principles for static export limits to be developed and imposed so that there was evidence

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<sup>18</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Clean Energy Council, Australian Energy Council, SwitchDin, Ausgrid, Energy Queensland, PIAC, EnergyAustralia, Simply Energy, Rheem and Combined Energy Technologies.

and justification that the static export limit imposed by DNSPs is based on network hosting capacity.<sup>19</sup>

While DNSPs supported the DEIP Working Group capacity allocation principles, they considered that these should be non-binding and not auditable. DNSPs were generally of the view that the principles should not be binding during the early stages of implementation as this might constrain flexibility in implementing flexible export limits in an efficient manner. Several networks were of the view that capacity allocation principles and methodologies should not be auditable until more customers have energy resources to justify the costs imposed from audits. Essential Energy noted that the AER should seek to pursue audits where it has been demonstrated that a business has not been engaging with its customers in an open and transparent manner.<sup>20</sup>

In contrast, most non-DNSPs were of the view that capacity allocation principles should be binding and auditable to promote confidence and trust in their operation amongst consumers and market participants.

### 3.3.3 AER analysis

Based on the feedback we have received and further analysis, our view is that DNSPs should be required to transparently allocate network hosting capacity according to nationally consistent principles. Under our approach, networks would be required to demonstrate how their approach and methodologies for allocating network capacity comply with capacity allocation principles established by the AER that further build upon the DEIP principles.

In our view, capacity allocation principles for both flexible and static export limits should be developed and DNSPs should be required to comply with these principles. Under our proposed approach, DNSPs would be required to demonstrate as part of their distribution determination process how their capacity allocation methodology and flexible export limit approach meets the capacity allocation principles.

Based on stakeholder feedback, we have reached the view that it would not be appropriate to make compliance with the capacity allocation principles auditable. Imposing audit requirements on DNSPs creates costs, which are ultimately borne by consumers. At this point in time, we are not satisfied that the benefits from auditing DNSPs will outweigh the costs of imposing this regulatory requirement. We are of the view that leveraging existing mechanisms such as network reporting will provide transparency of network compliance to promote confidence in the effective operation of flexible export limits.

We maintain our view that the DEIP principles provide a strong foundation for establishing nationally consistent capacity allocation principles to guide the implementation of flexible export limits. We intend to raise a rule change request to ensure that DNSPs' capacity allocation methodologies (discussed further below) are consistent with the capacity allocation principles. Consultation on the interim guidance and during the rule change process will

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<sup>19</sup> Australian Energy Council, *Flexible Export Limits Issues Paper*, 9 December 2022, p 3.

<sup>20</sup> Essential Energy, *Flexible Export Limits Issues Paper*, 9 December, p 4.

provide opportunities for further refinement of the principles to address stakeholder concerns and ensure that the guidance provided later is appropriate and fit for purpose.

Further details on our proposed approach can be found in section 4.1.

### 3.3.4 Capacity allocation methodology

Given that flexible export limits are still in the early stages of development for most networks, and DEIP findings that it would be unnecessary and difficult to achieve national harmonisation,<sup>21</sup> we formed the view that a detailed capacity allocation methodology should not be prescribed.

### 3.3.5 Stakeholder views

There were divergent views on the level of flexibility that should be afforded to networks in developing their capacity allocation methodology. Australian Energy Council, Clean Energy Council, original equipment manufacturers and some retailers considered that the AER should play a role in seeking to develop a standardised approach for networks to develop their capacity allocation methodologies.<sup>22</sup>

These stakeholders expressed concern that providing too much flexibility to DNSPs would likely result in fragmentation and unnecessary complexity that would hinder the development of the aggregator market.

In contrast, DNSPs, Public Interest Advocacy Centre (PIAC) and Origin Energy acknowledged that developing a 'one-size' fits all approach towards capacity allocation methodology would likely stifle implementation efforts and potentially prevent DNSPs from optimising their methodologies to suit their individual networks, technical capabilities, and customer preferences.<sup>23</sup>

There was broad consensus amongst stakeholders that DNSPs' capacity allocation methodologies should be included as part of their consumer energy resources integration strategy to provide transparency and that this should be assessed as part of DNSP's distribution determination.

However, there were differing views by some networks on the level of detail that should be included in the consumer energy resources integration strategy. For example, SAPN was not supportive of networks publishing their capacity allocation methodologies as these are detailed technical calculations that would be difficult for consumers and stakeholders to understand.<sup>24</sup>

Similarly, TasNetworks noted that the specific methodology for calculating the export limit for individual customers may need to be kept confidential where it relied on third party software

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<sup>21</sup> DEIP, [Dynamic Operating Envelopes Working Group: Outcomes Report](#), ARENA, March 2022.

<sup>22</sup> Australian Energy Council, *Flexible Export Limits Issues Paper*, 9 December 2022, p 2; Clean Energy Council, *Flexible Export Limits Issues Paper*, p 3; Joint OEMs, *Flexible Export Limits Issues Paper*, 9 December 2022, p.6.

<sup>23</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Ausgrid, SA Power Networks, PIAC, Origin Energy, Power Water Corporation, CitiPower/ PowerCor/United Energy and Energy Queensland.

<sup>24</sup> SA Power Networks, *Flexible Export Limits Issues Paper*, 9 December 2022, p 7.

for calculating network capacity and site-specific capacity allocations.<sup>25</sup> It considered it important that the underlying intellectual property rights of third parties is protected to ensure innovation in this area continues and customers benefit from increased flexibility in export limits.

SAPN was supportive of the approach where DNSPs are required to outline their approach towards capacity allocation as part of their consumer energy resources integration strategies but did not agree that the capacity allocation methodology should be subject to stakeholder consultation.<sup>26</sup> Instead, it considered that stakeholder consultation focus on service outcomes rather than the complex back-end operational calculations to achieve those outcomes.

Tesla and original equipment manufacturers raised concerns about the ability for consumers and market participants to locate relevant information that would help inform their product and service offerings. Tesla considered it unreasonable to expect installers and small consumer energy resources resellers to know where to locate DNSPs' approved consumer energy resources integration strategies on the AER's website to find information on how individual DNSPs allocate their network capacity.<sup>27</sup> Both Tesla and original equipment manufacturers raised the need for DNSPs to make information about their approach for allocating network capacity available on their website in an accessible manner that can be easily digestible by a consumer energy resources customer with no energy market experience or understanding.

Stakeholders also had differing views on the level of regulatory oversight that should be provided in assessing the appropriateness of DNSP capacity allocation methodologies. There was a general view from networks that the AER's role should be limited to assessing whether DNSPs proposed capacity allocation methodologies were consistent with the capacity allocation principles and demonstrated how consumer feedback had been reflected in their approach. Other stakeholders formed the view that the AER should approve and audit DNSPs' compliance with capacity allocation methodologies.<sup>28</sup>

### 3.3.6 AER analysis

Based on our analysis of stakeholder feedback, we have formed the view that it would not be appropriate at this stage to seek to prescribe a 'one-size' fits all capacity allocation methodology approach. Rather, given the significant differences that exist between networks in terms of operating circumstances, access to smart meter data, and network visibility, DNSPs should be required to:

1. Demonstrate how they have applied the capacity allocation principles in developing their capacity allocation methodology (via an AER approval mechanism);

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<sup>25</sup> TasNetworks, *Flexible Export Limits Issues Paper*, 8 December, p.2.

<sup>26</sup> SA Power Networks, *Flexible Export Limits Issues Paper*, 9 December 2022, p 6.

<sup>27</sup> Tesla, *Flexible Export Limits Issues Paper*, 9 December 2022, p. 7.

<sup>28</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Australian Energy Council, Red Energy and Lumo Energy, Energy Consumers Australia, EnergyAustralia, Energy and Water Ombudsman Queensland and Energy and Water Ombudsman SA.

2. Demonstrate how their capacity allocation approach reflects consumer and stakeholder feedback; and
3. Publish their capacity allocation methodology and approach on their website.

Requiring DNSPs to demonstrate how they have developed their capacity allocation methodologies in a manner which is consistent with the capacity allocation principles will help to promote greater consistency and transparency around how networks allocate available hosting capacity amongst consumers.

Our recommendation is that this should be included as part of a DNSP's consumer energy resources integration strategy and assessed as part of DNSPs' distribution determination process. We intend on formalising this process through a rule change request. Further details can be found in section 4.1 and 4.3.

We believe this approach strikes an appropriate balance between providing consumers and interested stakeholders with sufficient information and transparency to understand how network capacity is allocated to support their ability to make informed decisions. Providing networks with the flexibility to develop methods that best reflect their unique operating circumstances and customers' preferences is likely to promote efficient outcomes.

Over time, as smart meter penetration improves and DNSPs gain better visibility of their network, we expect that capacity allocation methodologies will evolve and become more sophisticated. Opportunities for further harmonisation and standardisation should be revisited once flexible export limits have had more time to develop and mature. We anticipate that as DNSPs continue to develop their ability to dynamically operate their network and reach similar levels of smart meter penetration and visibility, best practice approaches will likely become more evident.

Our proposals seek to address this issue by including a requirement as part of the 2027 export services review to look at opportunities for further refinement and assessment of whether benefits from greater standardisation outweigh their costs. The 2027 review will assess the effectiveness of regulatory arrangements for promoting export services.

## **3.4 Consumer participation (opt-in or opt-out)**

In our Issues Paper, we noted the criticality of consumers having transparent and accessible information to inform and empower their decision-making regarding their connection arrangements. Our Issues Paper explored the importance of networks establishing a 'social licence' to support the uptake and implementation of flexible export limits.

### **3.4.1 Stakeholder views**

Most stakeholders were supportive of having a basic static export limit as an alternative to flexible export limits and that this should be reflected in DNSPs' Model Standing Offers.

There was general support for the opt-in model of implementation by stakeholders. Several stakeholders saw the value in flexible export limits being implemented on an opt-in basis

initially, with this changing over time to an opt-out model over the medium term as dynamic operating envelopes evolved and consumer energy resources ecosystems matured.<sup>29</sup>

Some stakeholders were agnostic towards whether flexible export limits should be implemented as opt-in or opt-out.<sup>30</sup> Having trialled an opt-in model, AusNet considered that whether a DNSP applies an opt-in or opt-out model should be determined as part of its distribution determination and review of its connection policy.<sup>31</sup>

Energy Consumers Australia noted that there might be less incentives for DNSPs to engage with consumers under an opt-out approach but considered that this could be addressed by establishing appropriate guidelines and requirements around communication.<sup>32</sup>

Some DNSPs indicated a clear preference for an opt-out model, as this would lead to quicker uptake of flexible export limits and a more effective tool for managing network congestion.<sup>33</sup> CitiPower, PowerCor and United Energy noted that adoption rates tended to be low under opt-in rollouts based on their experience in implementing cost reflective tariffs in Victoria.<sup>34</sup> They raised concerns that adopting an opt-in approach might limit the effectiveness of flexible export limits as a tool for managing minimum demand scenarios.

Some retailers identified the need for DNSPs to accommodate situations where consumers have decided to opt-in to a flexible export limit initially and later change their minds and wanted to revert to a static export limit.<sup>35</sup> It considered that the option of a static export limit should remain available for consumers that want to make that choice.

### 3.4.2 AER analysis

Given that flexible export limits are still in the early stages of design and implementation and there are low levels of consumer awareness and trust, we have retained the view that an opt-in approach, whereby consumers are offered a static export limit as an alternative, is more likely to promote outcomes consistent with the achievement of the National Electricity Objective at this point in time.

We agree with Energy Consumers Australia's observation that adopting an opt-in approach creates greater incentives for DNSPs, retailers and installers to communicate more effectively with consumers to help inform their decision-making. There are several actions available to DNSPs to build consumer trust and awareness in relation to flexible export limits.. We intend on providing further guidance to networks on this issue through the establishment of a guidance note as outlined in our proposed actions.

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<sup>29</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Australian Energy Council, Energy Queensland, Origin, Rheem and Combined Energy Technologies, and SwitchDin.

<sup>30</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from SwitchDin, Endeavour Energy, ENA, and AusNet.

<sup>31</sup> AusNet, *Flexible Export Limits Issues Paper*, 9 December 2022, p.2.

<sup>32</sup> Energy Consumers Australia, *Flexible Export Limits Issues Paper*, 8 December 2022, p.5.

<sup>33</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Essential Energy, Ergon and Energex, CitiPower/PowerCor/United Energy.

<sup>34</sup> CitiPower/PowerCor/United Energy, *Flexible Export Limits Issues Paper*, 8 December 2022, pp. 3-4.

<sup>35</sup> Simply Energy, *Flexible Export Limits Issues Paper*, 9 December 2022, p 2 and Red Energy and Lumo Energy, *Flexible Export Limits Issues Paper*, 9 December 2022, p.4.

We agree with stakeholder views that over time that the appropriateness of an opt-in model may change. We consider that the appropriateness of opt-in model should be revisited in the future, and we review this issue as part of our review of incentive arrangements and benchmarking for export services, which will commence by 2027.<sup>36</sup>

## 3.5 Consumer understanding and interest

Our Issues Paper recognised the importance of uplifting consumer awareness and education on what flexible export limits are, the potential benefits and risks, and how they affect consumers' energy resources.

In our Issues Paper, we recognised the importance of consumers having access to sufficient and fit-for-purpose information to enable them to make informed decisions about whether adopting a dynamic connection arrangement was right for them. We noted findings from DEIP which identified the importance of establishing a social licence as a critical enabler for consumer uptake of flexible export limits.

### 3.5.1 Stakeholder views

Most stakeholders agreed that DNSPs would need to play a key role in delivering relevant information and education campaigns to help consumers decide whether a dynamic connection agreement is appropriate for them. However, it was noted by several stakeholders that consumers would need to engage with different parties other than DNSPs throughout the consumer energy resources journey. Thus, there is a need for communications to be coordinated and consistent between different parties.

Consumers will have different information needs through their energy resources journeys and will have different key touchpoints with other parties other than DNSPs. As such, DNSPs will likely have differing levels of involvement throughout the different consumer energy resources stages, with stakeholders identifying that DNSPs needed to play more of a role in providing relevant information to other parties (particularly solar retailers and installers) to support consumer decisions around consumer energy resource selection and installation.

Key areas identified as needing further improvement to support the uptake of flexible export limits included:

- What flexible export limits are, how they operate, and expected benefits.
- How flexible export limits will likely impact consumer bill in terms of bill savings and system payback time from investing in consumer energy resources.
- How flexible export limits interacts with consumers' choice of tariffs.
- Who consumers should contact for further information on the operation of their connection agreement and raise concerns regarding the performance of their flexible export limit.
- The factors that can impact the benefits anticipated from adopting a dynamic connection agreement and flexible export limit performance.
- Consumer protections, dispute resolution, data protection and privacy.

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<sup>36</sup> [AER, \*Incentivising and measuring export service performance – Final Report, March 2023\*.](#)



- Communication protocols between DNSP, consumers, retailers, aggregators, and other interested parties.

Stakeholders highlighted the criticality of information being transparent, accessible, and easy for consumers to digest so that they are empowered to form their own views regarding their consumer energy resources (or potential) investment by doing their own due diligence.

Several stakeholders highlighted the importance of DNSPs engaging with consumer energy resource resellers, installers, original equipment manufacturers, and aggregators to promote better understanding and awareness of flexible export limits and how they operate. They also raised the need for better understanding of where to locate key network information that might help inform their product offerings and communications with consumers.<sup>37</sup>

For example, Energy Consumers Australia considered that retailers and installers should have knowledge of local network constraints, capacity, or planned investments in the areas they are servicing so that they can inform consumers ahead of any purchase about the best investment for them.<sup>38</sup> However, feedback from Tesla and original equipment manufacturers indicated that there was difficulty in knowing where to locate relevant information on DNSPs' and market bodies' websites. These stakeholders highlighted the need for this information to be made readily available on a single landing page.<sup>39</sup>

Both PIAC and Rheem and CET noted the potential for the ESB Customer Insights Collaboration workstream to be further leveraged to improve customer understanding of flexible export limits.<sup>40</sup> Rheem and CET considered that there was a need for education and awareness on the consumer energy resources governance framework. It suggested that there would be value in the development of a 'step by step' guide to flexible export limits and consumer energy resources selection and installation from an authorised and trusted source.<sup>41</sup>

### 3.5.2 AER analysis

It is clear from the work undertaken by the Customer Insights Collaboration and stakeholder feedback that consumers find flexible export limits, and consumer energy resources selection more broadly, confusing to navigate. Significant uplift on consumer awareness and education is required. Similarly, uplift in the understanding of other key parties involved in consumers' energy resources journey is also required to support the efficient uptake and implementation of flexible export limits.

We consider that there is significant value in seeking to leverage work undertaken through the ESB's Consumer Insights Collaboration workstream to better map key consumer touchpoints with different parties throughout the consumer energy resources journey and

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<sup>37</sup> See submissions from Energy Consumers Australia, *Flexible Export Limits Issues Paper*, 8 December 2022, p. 2; and Joint OEMs, *Flexible Export Limits Issues Paper*, 9 December 2022, p.2.

<sup>38</sup> Energy Consumers Australia, *Flexible Export Limits Issues Paper*, 8 December 2022, p. 2.

<sup>39</sup> See submissions from Tesla, *Flexible Export Limits Issues Paper*, 9 December 2022, p. 7; and Joint OEMs, *Flexible Export Limits Issues Paper*, 9 December 2022, p.7.

<sup>40</sup> See submissions from PIAC, *Flexible Export Limits Issues Paper*, 9 December 2022, p 9 and Rheem and Combined Energy Technologies (CET), *Flexible Export Limits Issues Paper*, 9 December 2022, p.21.

<sup>41</sup> Rheem and CET, *Flexible Export Limits Issues Paper*, 9 December 2022, p.22.

provide clarity to these parties on the nature of information required to support consumer decision-making. Providing clarity on the nature of information required, who is to provide the information, and identifying information required to support the development of that information will help in supporting an industry wide effort to educate consumers and establish a social licence.

Our proposed action to develop an Export Limit Guideline, as discussed further in section 4.1 below, will also help in providing clarity to DNSPs on engagement requirements with consumers and other key stakeholders such as solar retailers, aggregators, original equipment manufacturers, and installers. As noted by stakeholders, it is not enough to just engage with consumers and stakeholders. Further effort must be made to ensure that information is being provided in an accessible and easily digestible manner.

We recognise that there is value in developing standardised material to help consumers and stakeholders better understand how connection agreements work and factors to consider when choosing to select and install consumer energy resources. We suggest that work is undertaken by relevant market bodies such as the AER, AEMO and the AEMC in collaboration with Energy Consumers Australia to develop appropriate fact sheets to help consumers better navigate and find information on key issues to inform their decision making.

## **3.6 Connection agreements**

In our Issues Paper we discussed whether the current connection agreement framework was the most appropriate mechanism for setting out terms, conditions, and performance expectations for flexible export limits for consumers.

Our preliminary view was that DNSPs should be required to make changes to the information that they provide to consumers via their connection agreements. In addition, DNSPs should set out information relating to flexible export limits including the operating parameters that apply, conditions for revision to the flexible export limit, communication processes for changes to the flexible export limit, consumer compliance obligations and rectification processes for non-compliant devices, provisions relating to performance levels and compensation.

### **3.6.1 Stakeholder views**

Stakeholders generally agreed that implementation of flexible export limits should occur through changes to DNSPs' Model Standing Offers. Most stakeholders agreed that there should be two Model Standing Offers available for consumers, a static export limit agreement and a flexible export limit agreement, with stakeholders broadly supporting (including DNSPs) standardisation of certain terms and conditions within connection agreements.

However, there were differing stakeholder views on whether performance and technical parameters relating to flexible export limits should be captured within connection agreements or in separate material provided to consumers as part of the connection process. DNSPs generally considered that it would be appropriate to update the Model Standing Offers to include additional operational information on flexible export limits. They were broadly comfortable with the information that had been identified by the AER in the Issues

Paper, except for the AER's proposed inclusion of compensation and rebates where flexible export levels were not achieved by the DNSP.

There was strong push back from DNSPs on the inclusion of these requirements on the basis that they would establish guaranteed service levels for exports. DNSPs did not consider this appropriate during the early stages of implementation of flexible export limits, particularly given the broad range of factors beyond DNSPs' control (such as consumer internet connectivity and device compliance) that can impact its ability to accommodate consumers' exports with the range and levels specified in their connection agreement.

Given these issues, it was instead suggested that guidance on indicative performance levels should be provided as part of separate materials to consumers as part of the information gathering or even the connection process.<sup>42</sup> Simply Energy and SwitchDin also made suggestions regarding additional information that should be provided to customers as part of the connection process but not necessarily form part of the connection agreement. This included setting out customer expectations of what will be made available to them under different scenarios and outlining the pros and cons to enable customers to make informed decisions.<sup>43</sup>

Energy Queensland raised the issue that Model Standing Offers are designed for establishing or altering connections, identifying that there may be a gap with customers that move into premises with existing generation.<sup>44</sup>

PIAC considered that the current connection agreement framework was the most appropriate mechanism to set out the terms, conditions, and performance expectations for flexible export limits where there is no trader or third party involved in the operation.<sup>45</sup> Endeavour Energy considered it would be preferable where a third party is responding on behalf of the customer to flexible export limits, that this responsibility is reflected in a contract between the customer and trader which sits outside the connection agreement with the DNSP (similar to customer-retailer contractual arrangements).<sup>46</sup>

### 3.6.2 AER analysis

Connection agreements have long been inaccessible to consumers. They are difficult to explain and communicate and many consumers are not aware of their existence. In our consultation we continued to hear that many customers do not understand or are not even aware of the existence of connection agreements. As a result, it may not be an effective document in which to include information about flexible export limits.

As such, our view is that DNSPs should clearly set out, in material that is separate from the DNSPs' connection agreements, the information consumers will require about flexible export limits. This information should be provided in an easily accessible format, for example in a

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<sup>42</sup> SA Power Networks, *Flexible Export Limits Issues Paper*, 9 December 2022, p 9.

<sup>43</sup> Simply Energy, *Flexible Export Limits Issues Paper*, 9 December 2022, p 2 and SwitchDin, *Flexible Export Limits Issues Paper*, 8 December 2022, p 7.

<sup>44</sup> Ergon Energy and Energex, *Flexible Export Limits Issues Paper*, 9 December 2022, p.4.

<sup>45</sup> PIAC, *Flexible Export Limits Issues Paper*, 9 December 2022, p 5.

<sup>46</sup> Endeavour Energy *Flexible Export Limits Issues Paper*, 9 December 2022, p.3.

letter. Information pertaining to performance expectations (e.g., a 10kW export limit 95% of the time) and the factors that can influence performance, should be published in a manner which can be regularly updated by DNSPs for consumers and aggregators, for example, on a website, to reflect the dynamic nature of this information. In addition, individual consumers should be able to enquire as to their specific circumstances from DNSPs in an accessible way. Transparency and sufficient consumer protections are important issues for stakeholders and need to evolve to reflect these new connection arrangements. We have proposed actions on how DNSPs might go about increasing transparency in section 4.1 below.

## **3.7 Governance of consumer energy resources and traders and governance of flexible export limits**

There were two sections on governance in the Issues Paper (section 3.3.4 and section 3.3.6). For ease of reference and given much of the stakeholder feedback on these two sections significantly overlapped, we have combined these into one section.

### **3.7.1 Stakeholder views**

Stakeholders noted the overlap with the AEMC's review into consumer energy resources technical standards. Many noted that roles and responsibilities with regards to compliance and enforcement of consumer energy resources technical standards should be clarified by the AEMC's review. Roles and responsibilities differ at each stage and the regulatory framework must outline the regulatory obligations for participants in each stage.

Origin considered it is critical that the roles and responsibilities of traders are clearly articulated in the framework.<sup>47</sup> Origin and EnergyAustralia called out the criticality of ensuring that third parties can participate in the market for flexible export limits.

Rheem and CET supported guidance on governance, with clarity required on roles, responsibilities and enforcement. It considered that a separate framework for managing governance would be appropriate that identifies the roles, responsibilities, policing and enforcement mechanisms where a third parties passes through of the flexible export limit to site consumer energy resources.

Some stakeholders considered that there is a need for additional guidance material, for example outlining consumers' rights and responsibilities when exporting to the grid<sup>48</sup> or to provide a simple one-pager on key things consumers need to know from the connection agreement.<sup>49</sup> There was general agreement that consumers should not be held responsible for a breach of the limit, unless they caused the breach.<sup>50</sup> However, Jemena noted that that customers should be ultimately responsible for complying with the obligations of their flexible

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<sup>47</sup> Origin, *Flexible Export Limits Issues Paper*, 9 December 2022, p.3.

<sup>48</sup> PIAC, *Flexible Export Limits Issues Paper*, 9 December 2022, p 3.

<sup>49</sup> Energy Consumers Australia, *Flexible Export Limits Issues Paper*, 8 December 2022, p. 5.

<sup>50</sup> Australian Energy Council, *Flexible Export Limits Issues Paper*, 9 December 2022, pp 5-6, Rheem and CET, *Flexible Export Limits Issues Paper*, 9 December 2022, p 13.

export limit.<sup>51</sup> Importantly, it pointed out that customers cannot pass their obligations onto a third party under their Model Standing Offer or deemed distribution contract.

Rheem and CET supported AER-led regulation of compliance with technical standards through the connection agreement. However, there was also support for new arrangements (outside of the connection agreement) to regulate traders.<sup>52</sup> Several stakeholders called for third parties such as traders to be licensed by an appropriate regulator such as the Clean Energy Regulator or AER,<sup>53</sup> or regulated by a separate framework under the National Electricity Rules<sup>54</sup> after which standardised agreements between DNSPs and traders could be established. Endeavour preferred establishing agreements between consumers and third parties outside of the connection agreement.

CitiPower, PowerCor and United Energy considered traders needed to be subject to licensing to protect customers and DNSPs. Some stakeholders encouraged a stronger role of jurisdictional consumer bodies in providing oversight of trader activities.<sup>55</sup>

Some stakeholders raised the need for a 'life-cycle' approach towards flexible export governance to determine which party was responsible for rectifying non-compliance.<sup>56</sup> There were suggestions that the technology provider / original equipment manufacturer should ensure compliance with technical standards during the installation and commissioning stages, whereas the trader should be responsible for compliance with the flexible export limit during the operational stage of a consumer's energy resources system.<sup>57</sup> SAPN suggested DNSPs' responsibilities include monitoring and enforcing consumer energy resources installation compliance and ongoing operational compliance.

### 3.7.2 AER analysis

Compliance with consumer energy resources technical standards is a critical enabler for the efficient implementation of flexible export limits. The inability to enforce compliance has the potential to significantly reduce the effectiveness of flexible export limits as a tool for managing network congestion as well as reducing benefits to consumers, such as the increased ability to export and value stack to maximise the return on their investment.

As networks seek to transition to enabling platforms for new products and services, there is a growing need for greater technical oversight at a customer device level for these markets to function efficiently and effectively.

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<sup>51</sup> Jemena, *Flexible Export Limits Issues Paper*, 9 December 2022, p 4.

<sup>52</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from SA Power Networks, Energy Consumes Australia, and Energy and Water Ombudsman SA and Energy and Water Ombudsman Queensland.

<sup>53</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from EnergyAustralia, Australian Energy Council, Clean Energy Council, Ergon Energy and Energex.

<sup>54</sup> SA Power Networks, *Flexible Export Limits Issues Paper*, 9 December 2022, p 11.

<sup>55</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from CitiPower/PowerCor/United Energy, Ergon Energy and Energex and Australian Energy Council.

<sup>56</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from PIAC, SA Power Networks, SwitchDin, and Australian Energy Council.

<sup>57</sup> SwitchDin, *Flexible Export Limits Issues Paper*, 8 December 2022, p 11.

We agree with stakeholders that the three lifecycle stages of compliance of consumer energy resource device lifecycle – manufacture and supply, with installation, and ongoing operation – need to be considered separately, with different rectification approaches embedded for each. Further, we agree that there should be clarity as to how this responsibility is shared between various parties across different stages of the consumer energy resources lifecycle.

We consider there is merit in market bodies continue working together to explore different regulatory models for providing technical oversight throughout the consumers' energy resource journey to clarify roles and responsibilities of various market participants to support the development of a more nationally consistent approach.

This is consistent with the AEMC's draft recommendation under its consumer energy resources technical standards review<sup>58</sup> that further work is required to assess the need for further regulatory reform following implementation of immediate compliance actions across the device lifecycle.

### 3.8 Notification period for dynamic limits

In our Issues Paper, we noted that as understanding and functionality of flexible export limits grows, DNSPs may need to provide notice of their forecasts for export limits ahead of the point in time when the limit will need to be adjusted. This would enable market participants to effectively plan their offers for energy services across a portfolio of consumer energy resources, and AEMO to understand the level of supply and demand in the system.

#### 3.8.1 Stakeholder views

Broadly, stakeholders noted the benefits of forecasting information. Some submissions viewed a need for forecast information as it is important for enabling energy market participants to effectively plan their offers and provide value propositions to consumers, and for AEMO to manage power system reliability.<sup>59</sup>

Alternate views were that as traders are not critical to the implementation of flexible export limits, forecasting is not an immediate priority.<sup>60</sup> SAPN noted that existing communications between AEMO and DNSPs would suffice.<sup>61</sup>

CitiPower, Powercor and United Energy noted the importance of network safety, security and stability, and that any decision on notification periods needs to consider that greater notice before activation trades off against responsiveness.<sup>62</sup> They further noted that forecasting is a new tool for DNSPs, and this capability would need to be developed.

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<sup>58</sup> AEMC, [Draft Report: Review into Consumer Energy Resources Technical Standards](#), 27 April 2023.

<sup>59</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Rheem and Combined Energy Technologies, Origin, Red Energy and Lumo Energy, and EnergyAustralia.

<sup>60</sup> See stakeholder submissions to the Flexible Export Limits Issues from PIAC, Clean Energy Council, and SwitchDin.

<sup>61</sup> SA Power Networks, *Flexible Export Limits Issues Paper*, 9 December 2022, p 12.

<sup>62</sup> CitiPower/PowerCor/ United Energy, *Flexible Export Limits Issues Paper*, 8 December, p. 6.

Most stakeholders considered neither Scheduled Lite nor AEMO as appropriate for providing a forecasting framework.<sup>63</sup> However, Ergon and Energex, were of the view that the Scheduled Lite workstream could improve visibility as it works on opt-in basis, and it may be sufficient in the short-term.<sup>64</sup>

### 3.8.2 AER analysis

Following the implementation of flexible export limits, as the understanding of the functionality grows, there may be greater opportunities to provide consistency in DNSPs notification timeframes DNSPs provide for their export limits ahead of the point in time when the limit will need to be adjusted. This would enable market participants to effectively plan their offers for energy services across a portfolio of consumer energy resources.

However, relative to more pressing and fundamental issues such as governance arrangements and network transparency, we see this as more of a medium-term priority. While this is not necessary for the implementation of flexible export limits, we agree that in the future, as the functionality matures and number of participating customers grows, the AER should look to provide more clarity on this issue to support efficient market operation. See section 4 below.

We recognise the need for a considered forecasting framework that will not unreasonably disadvantage market participants or result in inefficient costs. Further work is needed to develop an optimal forecasting framework. This would include consideration of what DNSPs can reasonably and efficiently do with current levels of network visibility and what would ultimately have the lowest cost for network customers.

## 3.9 Monitoring export limit performance and information provision

In our Issues Paper, we noted that it could be useful to define or establish performance monitoring processes specific to DNSP functions regarding flexible export limits to provide transparency and accountability. Additionally, transparent and effective monitoring processes may encourage increased consumer uptake and build trust in the benefits associated with flexible export connections.

We noted work being undertaken as part of the AER's incentivising and measuring export service performance workstream, which involves updating monitoring and reporting requirements to reflect export services in response to the AEMC's final rule on access, pricing and incentive arrangements for distributed energy resources.<sup>65</sup>

### 3.9.1 Stakeholder views

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<sup>63</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from AGL, Clean Energy Council, Essential Energy, Rheem and CET.

<sup>64</sup> Ergon Energy and Energex, *Flexible Export Limits Issues Paper*, 9 December 2022, p.7.

<sup>65</sup> AEMC, [Access, pricing and incentive arrangements for distributed energy resources](#), Rule determination, 12 August 2021.

Broadly, non-network stakeholders supported publishing data on individual DNSPs to enable comparative assessments of DNSPs to ascertain national best practice.<sup>66</sup> These stakeholders noted that publishing data on DNSPs' performance is important for transparency.<sup>67</sup> However, Essential Energy noted that in publishing any performance export performance related data, ranking of relative performance should be avoided as DNSPs are not directly comparable.<sup>68</sup>

Conversely, Energy Networks Australia (ENA) submitted that the proposed level of data sharing and transparency around flexible export limits and the conditions under which they are developed is unnecessary and would be costly to implement.<sup>69</sup> ENA considered that aggregate data sharing and performance reporting to the AER is more appropriate than direct data provision to individual customers. Jemena considered that the AER should provide a clear use case for any data that DNSPs are required to report, and that customers should have a role in determining the metrics and data that they consider important.<sup>70</sup>

Several stakeholders noted metrics that were being considered as part of the AER's broader incentivising and measuring export service performance workstream were sufficient.<sup>71</sup> Other areas where stakeholder monitoring and reporting would help to assess the effectiveness of flexible export limit implementation included:

- Measuring progress towards the development and implementation of a smart access data regime.<sup>72</sup>
- A requirement for networks to capture and report on systemic issues and rectification.<sup>73</sup>
- Monitoring of costs and benefits being realised, and consumer complaints.<sup>74</sup>
- Monitoring of involuntary curtailment and export service levels achieved.<sup>75</sup>

Energy Queensland considered that there were several existing self-reporting requirements that are sufficient for monitoring the effectiveness of flexible export limits. These included through DNSPs' distribution annual planning reports, the ESB's Consumer Energy Resources Implementation Plan and the AER's Network Performance Report.

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<sup>66</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from EnergyAustralia, Clean Energy Council, Essential Energy, Rheem, PIAC and CET, Origin and Tesla.

<sup>67</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Energy and Water Ombudsman for Queensland and South Australia, Origin, Rheem and CET, and Tesla.

<sup>68</sup> Essential Energy, *Flexible Export Limits Issues Paper*, 9 December 2022, p 8.

<sup>69</sup> Energy Networks Australia (ENA), *Flexible Export Limits Issues Paper*, 9 December 2022, p 1.

<sup>70</sup> Jemena, *Flexible Export Limits Issues Paper*, 9 December 2022, p 4.

<sup>71</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from SA Power Networks and CitiPower/PowerCor/United Energy.

<sup>72</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from PIAC and SwitchDin.

<sup>73</sup> Energy and Water Ombudsman SA and Energy and Water Ombudsman Queensland, *Flexible Export Limits Issues Paper*, 5 December 2022, p 4.

<sup>74</sup> Ibid.

<sup>75</sup> CitiPower/PowerCor/ United Energy, *Flexible Export Limits Issues Paper*, 8 December, p. 7.



### 3.9.2 AER analysis

Since the release of our Issues Paper, the AER has since finalised its position in relation to incentivising and measuring export service performance.<sup>76</sup> Feedback captured as part of consultation on flexible export limits has helped shape our views on reporting metrics that should be included to help transparency and confidence in the operation of flexible export limits.

Consistent with the strawman information request published alongside the Draft Report on incentivising and measuring export service performance,<sup>77</sup> we are proposing to collect the following information on flexible export limits from 2022-23:

- The number of customers with flexible export limits
- Average upper limit for customers with flexible export limits (kW)
- Average time the upper limit was unavailable for customers with flexible export limits (hours)

More generally, our position on reporting and monitoring sought to reflect and accommodate some of the initial challenges that DNSPs were likely to encounter in collecting the requested data. For example, we noted that limited access to smart meter data outside of Victoria will require some voltage data to be modelled and that there were likely to be persistent issues caused from networks limited visibility of involuntary export curtailment.

However, as this sits outside the scope of this paper, we have shared relevant stakeholder feedback relating to smart meter data access and the need for a consumer smart meter data access framework with both the AEMC and ESB to consider as part of their respective work on reviewing regulatory arrangements for metering services and the development of frameworks for management and use of data across the energy sector.

We note that some stakeholders suggested the need for capturing and reporting flexible export limit complaints and systemic compliance issues. We consider that these issues are likely to be better addressed through the establishment of our Export Limit Guideline, which is discussed further in section 4.1 and section 4.3.

## 3.10 Communication protocol

Consumer devices must be compatible with the DNSPs' chosen communication protocol and capable of communicating the required necessary information so that flexible export limits can be used to manage congestion on the distribution network. While CSIP-Aus is currently the most common standard being used by DNSPs for communication between the DNSP and inverters, there is no single standard mandated for use in Australia. In our issues paper we sought stakeholder views on whether devices should be required to comply with CSIP-Aus.

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<sup>76</sup> See [AER, \*Incentivising and measuring export service performance – Final Report, March 2023\*](#).

<sup>77</sup> AER, [Export services straw man information request](#), November 2022, tables 11.0.8, 11.0.10-11.

### 3.10.1 Stakeholder views

There were mixed views from stakeholders on this topic. Some stakeholders supported mandating that devices be compliant with CSIP-Aus,<sup>78</sup> with others considering that the interoperability standard should apply at the device level.

In contrast some stakeholders including PIAC and SwitchDin, considered that interoperability should not be restricted to CSIP-Aus.<sup>79</sup> Clean Energy Council did not support imposing a mandate for devices to be CSIP-Aus compliant as it considered that it was too early to tell if this was the best approach to inverter control.<sup>80</sup> Energy Queensland considered that it would be inadequate to mandate flexible export limits at the time of installation without first having mandated behind the meter interoperability.<sup>81</sup>

### 3.10.2 AER analysis

Consumers who opt into a flexible export arrangement will need to have devices that that comply with specific communication and performance standards, to enable the required signals to be sent to the device and for it to respond appropriately. This includes CSIP-Aus which has been developed specifically to support communication exchanges between Australian DNSPs and customers for the purposes of communicating flexible export limits (and dynamic operating envelopes more broadly).

Differences between DNSP approaches to the implementation of these standards are starting to emerge. For example, DNSPs are developing their own test procedures and commissioning processes to certify customer products and installations as being flexible export ready.<sup>82</sup> They are also applying local frameworks to authenticate devices and to secure communications exchanges to mitigate the risk of exposure to cyber security incidents. Different devices also have differing levels of compatibility with CSIP-Aus.

Stakeholder submissions to the ESB's Interoperability directions paper indicate support for the development of greater national consistency in the adoption and use of CSIP-Aus. While there is overlap and alignment between this work on flexible export limits and the ESB's interoperability workstream, in that defined communication protocols can support and enable flexible export limits, the interoperability workstream is broader in that it considers interoperability as an enabling tool for a broad range of different services and functions that a consumer energy resources device can perform. Flexible export limits are one subset of

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<sup>78</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Energy Water Ombudsmen of SA and Queensland, Origin, Rheem and CET, CitiPower/ Powercor/ United Energy, EnergyAustralia, Essential Energy, and SA Power Networks.

<sup>79</sup> See submissions from PIAC, *Flexible Export Limits Issues Paper*, 9 December 2022, p 10 and SwitchDin, *Flexible Export Limits Issues Paper*, 8 December 2022, p 16.

<sup>80</sup> Clean Energy Council, *Flexible Export Limits Issues Paper*, p 10.

<sup>81</sup> Ergon Energy and Energex, *Flexible Export Limits Issues Paper*, 9 December 2022, p.8.

<sup>82</sup> Flexible export 'capable' means that the inverter could be capable of participating in flexible exports (considered to have a communication channel that is compliant to the relevant protocol) but not configured or commissioned to do so. A site visit would be required to manually configure the site to be flexible export 'ready'. This means the inverter is ready to be remotely enrolled in a flexible export scheme. This would allow customers to adopt a dynamic connection agreement without the need for any additional hardware, configuration, or site visit.

those functions. For this reason, interoperability issues are best addressed through that workstream.

We have provided the interoperability workstream with stakeholder feedback received on this issue to help inform their analysis and final position. While we are supportive of testing the notion of a technical standard mandate, we do not have enough evidence to determine the efficient application of a broader mandate at this stage.

Consequently, we consider it appropriate to wait for the outcome of the analysis to understand whether a mandate is required and the costs and benefits to stakeholders of such a mandate.

## **3.11 Interval length**

We noted in our Issues Paper that updates to the dynamic limit (that is, the period of time in which the DNSP sends signals to the inverter to update the flexible export limit) are critical to the operation of flexible export limits. Determining the frequency of these updates is also important for implementation. DEIP recommended five-minute intervals should be adopted or transitioned to over time.

### **3.11.1 Stakeholder views**

Several stakeholders noted that there was no need to mandate interval length and considered that DNSPs are best placed to determine the interval length.<sup>83</sup>

EnergyAustralia, AGL, Red and Lumo Energy supported an immediate mandate of interval length (five minutes) to promote NEM-wide consistency, while Origin noted that a nationally consistent approach should be developed in the future to maximise the benefits of consumer energy resources.

### **3.11.2 AER analysis**

Our position is that DNSPs are best placed during the early stages of flexible export limit implementation to determine the appropriate interval length. This can be reviewed in the future once flexible export limits are more common and more data is available on the costs, benefits and approaches to mandating an interval length.

We intend for this issue to be re-examined as part of our review of export services in 2027.

## **3.12 Demonstrating investment need**

In our Issues Paper, we noted that DNSPs will incur costs to implement and operate flexible export limits, depending on what arrangements or systems they already have in place. Expenditure may be required on additional systems, monitoring equipment, access to smart meter data or more, depending on how DNSPs choose to implement flexible export limits.

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<sup>83</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from PIAC, Clean Energy Council, Essential Energy, TasNetworks, SA Power Networks, Ergon and Energex, Rheem and CET.

There are existing frameworks which provide guidance on how the AER will assess specific elements of DNSPs' expenditure proposals. This guidance is intended to help DNSPs in preparing the necessary evidence and justifications to support their expenditure proposals so that it demonstrates compliance with the national electricity rules and is capable of being accepted by the AER.

The following AER guidance material is relevant to demonstrating investment need, which may include demonstrating the investment need for flexible export limits. The material includes:

- Forecast expenditure assessment guideline;<sup>84</sup>
- Regulatory investment test for distribution (RIT-D)<sup>85</sup>
- Non-network ICT capital expenditure assessment approach<sup>86</sup>
- Distributed Energy Resources Integration Expenditure Guidance Note<sup>87</sup>
- Customer Export Curtailment Value methodology<sup>88</sup>
- Better Resets Handbook<sup>89</sup>

Our preliminary view was that there is sufficient guidance for DNSPs to facilitate the development of their investment proposals within the existing regulatory framework. Stakeholder feedback was sought on whether the AER had provided sufficient guidance on what information DNSPs are expected to provide to justify expenditure for implementing flexible export limits and whether more information was required to demonstrate the investment need for flexible export limits.

### 3.12.1 Stakeholder views

Several key themes emerged from stakeholder submissions regarding the adequacy of existing levels of DNSP visibility and access to smart meter data and how this acted as a key impediment to both the efficient uptake and implementation of flexibility export limits, as well as their effective operation.

Despite the issue of access to smart meter data, most stakeholders considered the level of existing guidance provided by the AER was sufficient.<sup>90</sup> Energy Queensland considered that existing material requires a review, while both SAPN and TasNetworks highlighted limitations and complexity associated with the AER's CECV methodology.

Some stakeholders including DNSPs were of the view that the AER provides sufficient direction in relation to justifying expenditure to implement flexible export limits. However, several stakeholders considered that further guidance was required on how DNSPs should

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<sup>84</sup> AER, [Better Regulation: Expenditure Forecast Assessment Guideline for Electricity Distribution](#), August 2022.

<sup>85</sup> AER, [Application Guidelines: Regulatory Investment Test for Distribution](#), August 2022.

<sup>86</sup> AER, [Non-network ICT capex assessment approach](#), November 2019.

<sup>87</sup> AER, [DER integration expenditure guidance note](#), June 2022.

<sup>88</sup> AER, [Final CECV methodology](#), June 2022.

<sup>89</sup> AER, [Better Resets Handbook: Towards Consumer Centric Network Proposals](#), December 2021.

<sup>90</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from SA Power Networks, CitiPower/PowerCor/United Energy and Origin.

seek to demonstrate that implementing flexible export limits amounts to the least cost investment option.<sup>91</sup>

### **3.12.2 AER analysis**

DNSPs may require a certain level of low voltage network visibility (such as customer load and voltage levels) provided by devices such as smart meters to implement flexible export limits and dynamically manage network congestion. Ongoing access to this data is also important in identifying whether consumer energy resources devices are operating in accordance with their assigned flexible export limit.

Under current arrangements, DNSPs in jurisdictions outside of Victoria and Northern Territory must commercially negotiate access to smart meter data with retailers or meter data providers. In practice, this has created a significant barrier to DNSPs being able to access to smart meter data, as it requires networks to individually negotiate access with multiple retailers or meter data providers operating in their network areas. The lack of standardisation in terms and conditions and data format has created a disincentive for participants to enter into commercial agreements.

Stakeholders have flagged the difficulty DNSPs face in trying to substantiate a business case for flexible export limits and more uplift of their dynamic operating capability. The AER is already seeing DNSPs (outside of Victoria) providing business cases for increased access to smart meter data to improve low voltage network visibility and implement solutions like flexible export limits to manage existing hosting capacity.

We note that the AEMC is currently exploring options to improve DNSPs' ability to access power quality data through its review of the regulatory framework for metering services. However, this issue is unlikely to be resolved for some time as the AEMC further explores different access and pricing models. We expect that DNSPs will consider using flexible export limits to manage hosting capacity prior to undertaking investments to increase hosting capacity.

We note the mixed views as to whether there is sufficient guidance for what is required to justify the investment need for flexible export limits. As such, we are of the view that we will provide further guidance to assist networks in undertaking their cost benefit analysis of implementing flexible export limits. Further information is available in section 4.1.

## **3.13 Consumer protections**

We consider it important that consumer protection frameworks include specific references to flexible export limits and contain mechanisms that identify or address any consumer protection issues regarding flexible export limits.

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<sup>91</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Joint OEMs, Tesla and Clean Energy Council.

### 3.13.1 Stakeholder views

Stakeholders generally supported strengthening consumer protections related to flexible export limits.<sup>92</sup> There was support for specific references to flexible export limits to be included in connection agreements.<sup>93</sup> Energy Consumers Australia supported access to independent dispute resolution, so that consumers know what their rights are, what is expected of them, and where they can go when things go wrong.<sup>94</sup> Stakeholders also supported stronger data protection for consumers.<sup>95</sup>

### 3.13.2 AER analysis

We recognise the need to build and maintain consumer trust in the uptake of flexible export limits and the role of flexible export limit specific consumer protections. In the long-term, it is the AER's view that it is important for consumer safeguards to promote consumer confidence and uptake of flexible export limits to be established. These will be considered as part of the AER's review of consumer protections for future energy services which is currently underway. Draft recommendations for this review are due to be published in mid-2023 with final recommendations scheduled to be released later in 2023.

## 3.14 Data protection and privacy

In our Issues Paper we noted that the implementation and operation of flexible export limits will result in more data being created, made visible and transferred across networks. As a result, data protection and privacy are crucial.

### 3.14.1 Stakeholder views

PIAC raised the need for access to consumer smart meter data to be made based on genuine and informed consent. Several stakeholders noted the need for consumers to have access to their own real-time data and to provide access to their authorised agent to allow them to manage their electricity use and costs.<sup>96</sup>

Several stakeholders raised concerns that data management needed to be considered more broadly than what was considered by the ESB in its Data Strategy workstream and considered that the risk of cyber security was significant.<sup>97</sup> ARENA considered that cyber security was significantly underdeveloped in Australia despite the developments in consumer energy resources technology, and consequently cyber threats pose a significant risk to consumers.<sup>98</sup>

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<sup>92</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from PIAC, Energy Consumers Australia, Tesla, Red Energy and Lumo Energy.

<sup>93</sup> Red Energy and Lumo Energy, *Flexible Export Limits Issues Paper*, 9 December 2022, p.3.

<sup>94</sup> Energy Consumers Australia, *Flexible Export Limits Issues Paper*, 8 December 2022, p.6.

<sup>95</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Essential Energy, Ergon and Energex, Energy and Water Ombudsman SA and Energy and Water Ombudsman Queensland.

<sup>96</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Clean Energy Council, Rheem and CET, and SwitchDin.

<sup>97</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Ergon and Energex, ARENA, Rheem and CET, Essential Energy and SA Power Networks.

<sup>98</sup> ARENA, *Flexible Export Limits Issues Paper*, 16 December 2022, p 7.

SAPN noted that DNSPs, as recipients of smart meter data, are captured by requirements under the Critical Infrastructure Act which sets out rules governing how sensitive customer data is collected, stored and shared. It highlighted that there are currently no equivalent arrangements for third parties such as technology providers, aggregators and traders around collection, storage and sharing of sensitive information, which it considered presented a significant cyber security and data privacy risk that extended beyond flexible export limits.<sup>99</sup>

### 3.14.2 AER analysis

The ability to harness and orchestrate consumer energy resources creates new possibilities in relation to utilisation of interoperability to support demand response and provision of ancillary market services. AEMO is currently progressing a rule change which seeks to unlock further benefits from consumer energy resources by allowing flexible trading arrangements.<sup>100</sup> However, the uncoupling of financial responsibility between retailers, aggregators, and traders creates the need to clarify smart meter data access and protection requirements.

The AEMC, through its review of the regulatory framework for smart meters, is examining options aimed at addressing these issues.<sup>101</sup> We have been working closely with the AEMC to pass on the stakeholder feedback we received so that it can be reflected in its analysis and findings. We have also worked closely with the ESB to feed through stakeholder feedback relating to its work on the Data Strategy to incorporate the need to consider the development of a framework for access to smart meter data and the ability to facilitate consent from consumers for authorised parties to access the data.

## 3.15 Interaction between flexible export limits and export pricing

In our Issues Paper, we sought feedback on whether additional guidance was required to help stakeholders understand the interactions between flexible export limits and DNSP export pricing. We noted that these interactions will likely increase in complexity as the market evolves and this may require continued monitoring and future reviews to ensure consumers are receiving the correct incentives.

### 3.15.1 Stakeholder views

Several stakeholders considered that more work was required to understand how flexible export limits and network tariffs interact.<sup>102</sup> Specifically, PIAC considered that there was a critical knowledge gap in how feed-in tariffs, export tariffs, and flexible export limits interact to create efficient incentives and outcomes for consumers.<sup>103</sup> In contrast CitiPower, PowerCor

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<sup>99</sup> SA Power Networks, *Flexible Export Limits Issues Paper*, 9 December 2022, p 14.

<sup>100</sup> AEMC, [Unlocking CER benefits through flexible trading, Consultation paper](#), December 2022.

<sup>101</sup> AEMC, [Review of the Regulatory Framework for Metering Services](#), Draft Report, 3 November 2022.

<sup>102</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Clean Energy Council, PIAC, and SwitchDin.

<sup>103</sup> PIAC, *Flexible Export Limits Issues Paper*, 9 December 2022, p 9.

and United Energy considered there is sufficient guidance with the Export Tariff Guidelines.<sup>104</sup>

Clean Energy Council noted that there are other approaches to managing exports rather than direct control of inverters or managing the export limit at the connection point, such as dynamic network tariffs. It considered effectively and efficiently managing capacity of the distribution networks should be a combination of connection point limits, tariff signals and network service markets.<sup>105</sup>

Rheem and CET raised the issue that DNSP pricing signals and incentives relating to exports and flexible export limits will only be beneficial if the retailer decides to pass them through. It noted that a cost reflective DNSP network tariff structure that supports customer uptake of flexible exports has no value if there is a lack of support by retailers in passing through the tariff in its intended form.<sup>106</sup>

Ausgrid and SAPN were of the view that flexibility in the interaction of pricing and flexible export limits should be maintained to encourage innovation. They noted that flexible export limit customers will likely see lower static export prices relative to similar customers with static export limits, as any curtailment is likely to coincide with the export charging window.

### 3.15.2 AER analysis

Several themes have emerged from stakeholder feedback. These include the need for better clarity, understanding and awareness of how flexible export limits and tariffs interact and may be used in conjunction together and how retailers pass on and communicate these signals to consumers.

Overall, given the varied feedback received on how tariffs and flexible export limits could interact, our view is:

- It is important for DNSPs to engage with stakeholders in developing their thinking on flexible/dynamic connection arrangements and price signals (including rebates).
- This is an emerging area without clarity of which approaches are beneficial at this early stage. The AER will continue to support innovation in this area and the use of network tariff trials in combination with dynamic connection arrangements to test various approaches.

Further details about our views on this issue are set out in section 4.

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<sup>104</sup> CitiPower/PowerCor/ United Energy, *Flexible Export Limits Issues Paper*, 8 December, p. 9.

<sup>105</sup> Clean Energy Council, *Flexible Export Limits Issues Paper*, p 3.

<sup>106</sup> Rheem and CET, *Flexible Export Limits Issues Paper*, 9 December 2022, p 23.



## 4 Proposed actions

Based on what we heard through our consultations with stakeholders and our submissions process, we have developed several short term and medium to long-term proposed actions to address gaps in the regulatory framework relating to flexible export limits.

### 4.1 Proposed priority actions

#### **Proposed action 1: Establishing export limit requirements**

There are several potential benefits from flexible export limits such as dynamically maximising the availability of export capacity on networks and providing greater consumer choice. This is important given the significant uptake of consumer energy resources on the system and the potential for congestion to arise on networks. However, there are also costs associated with bringing forward flexible export limits before networks would otherwise be ready to do so. As such, the AER's view is that it is too early to require DNSPs to implement flexible export limits. This is because there are divergent levels of penetration of consumer energy resources and network visibility across DNSPs. DNSPs are also at different stages in maturity and capability in relation to operating their networks dynamically and implementing flexible export limits.

For DNSPs that are already implementing flexible export limits or seeking to do so in the near term, we will provide interim guidance on requirements for implementing flexible export limits going forward to support DNSP business case development and cost benefit analysis.

#### **Outline of proposed action 1**

We propose to establish an outcomes-based approach for DNSPs that seek to implement flexible export limits. We propose to submit a rule change request to provide the AER with a head of power to establish a binding Export Limit Guideline. This Guideline will outline requirements across several key topics relating to the implementation of flexible export limits. More details on the proposed rule change are outlined in section 4.3.

We will also review our consumer energy resources integration expenditure guidance note commencing in early 2024.

#### **Proposed action 2: Capacity allocation principles and methodology**

As outlined in section 3.3.3, the DEIP principles for capacity allocation are critical for ensuring consumers have enough information to opt into flexible export limits, and for transparency for consumers and other market participants.

Currently, there is a gap in the regulatory framework in relation to how DNSPs allocate available network export capacity to consumers. The establishment of capacity allocation principles to guide the development of the detailed methodology that DNSPs use to assign export capacity to individual consumers will promote greater transparency and consistency to support the efficient implementation and uptake of flexible export limits.

Adopting an outcomes-based approach will enable DNSPs to determine how best to apply the capacity allocation principles in developing their detailed technical calculation in a

manner that best considers their individual network circumstances and customer preferences, while providing a more consistent approach across networks.

### **Outline of proposed action 2**

Under the current regulatory framework there is no obligation on DNSPs regarding how they allocate available network capacity to customers. To address this issue, we propose to submit a rule change request to establish a mechanism for AER to approve DNSPs' capacity allocation methodologies to ensure they are consistent with overarching guiding capacity allocation principles.

More detail on the proposed rule change is in section 4.3.

We propose that a standalone interim export limits guidance note (non-binding) is prepared that incorporates the DEIP capacity allocation principles. More detail on the proposed interim guidance note is in section 4.3.

### **Proposed action 3: Consumer participation**

Having considered stakeholder feedback, our view is that consumers should be able to opt-in to flexible export limits. When a DNSP provides the option to a consumer for a flexible export limit they should also offer static limits as an alternative. This can be revisited in 2027 to align with the next export services review. When offering an opt-in, DNSPs should offer separate Model Standing Offers for flexible export limits and static export limits. SAPN is currently doing this.

### **Outline of proposed action 3**

DNSPs should provide separate Model Standing Offers to customers for both flexible and static export limits, and we encourage them to do this on a voluntary basis, noting some DNSPs are already doing this. As noted in our discussion in proposed action 1 and 2, we propose to submit a rule change to allow the AER to develop binding Guidelines on static and flexible export limits. We intend on clarifying in our Export Limit Guideline that flexible export limits should be offered on an opt-in basis subject to jurisdictional arrangements.

The rule change request could also provide the AER with the ability to develop additional obligations through the development of a binding Guideline to support the efficient implementation of flexible export limits. This could include amendments to the rules governing connection policies to require DNSPs to develop their connection policies consistent with the capacity allocation principles and Export Limit Guideline. This will help to provide consumers and stakeholders with better transparency around how DNSPs apportion network capacity to customer connections.

#### **Proposed action 4: Consumer understanding and interest**

The AER will as part of developing its Export Limit Guideline, to be developed pursuant to the rule changes discussed in section 4.3.1, consider imposing a requirement on networks to provide an overview either on its website or via a factsheet outlining where different stakeholders can find information relevant for them. For example, information relating to consumer connections and/or links to that information, to address concerns that consumers or new market entrants such as aggregators might not know where to find relevant information to inform how they tailor their product/service offering (e.g., Tariff Structure Statement, consumer energy resources integration strategy, capacity allocation methodology, Distribution Annual Planning Report, demand side engagement register and strategy). As this proposed action is reliant on a rule change to implement, we intend on providing an interim non-binding guidance note.

While this information should be provided by DNSPs to support customers in their specific circumstances, we believe a broader communication process is also needed to provide consistent messaging across the market and to support an uplift in community understanding.

##### **Outline of proposed action 4**

We will provide interim guidance to DNSPs on customer awareness and consultation requirements through our standalone interim guidance note on export limits. This will be a non-binding interim measure while the rule change to establish formal Guideline for export limits is being determined and the formal Guideline developed. Our binding Export Limit Guideline will set out mandatory requirements for customer education and awareness, consultation, and stakeholder engagement.

We also propose that the market bodies and Energy Consumers Australia should work together to educate consumers and installers on consumers' rights and responsibilities when exporting to the grid and how connection agreements operate, as we note that many consumers are unaware of the existence of connection agreements or do not understand the nature of their terms and conditions on export limits.

#### **Proposed action 5: Connection agreements**

The AER's view is that transparency and sufficient consumer protections need to increase regarding flexible export limits as outlined in section 3.4 and 3.5. DNSPs should set out information about the operation and performance of flexible export limits in additional explanatory material. Individual consumers should be able to enquire about their specific circumstances from DNSPs in an easily accessible manner. Such transparency is important to inform consumers while also setting out rights and obligations for DNSPs.

It is the AER's view that connection agreements are complex and not well understood by consumers. Indeed, many are not aware of the existence of the connection agreement. Our proposed action focuses on two parts, the terms and conditions a DNSP must provide to a customer in their flexible export limit arrangements and additional information to assist a consumer in reading their terms and conditions (such as a DNSP's compliance obligations). It is important to note that while terms and conditions that form part of a contract (such as a

connection agreement) cannot be easily amended, information that a DNSP must provide customers outside of the contract can be updated regularly.

### **Outline of proposed action 5**

We propose to submit a rule change request to establish new obligations on DNSPs to specify certain terms and conditions contained in their Model Standing Offers relating to flexible export limits. In addition, we will require that the DNSP provide the customer with additional supplementary information and explanatory material (for example information about how a DNSP complies with its obligations under the rules). This rule change proposal would be supplemented by the requirements outlined in our Export Limits Guideline (once this head of power is established in the rules) regarding DNSPs' obligations in relation to consumer education and awareness. More detail on the proposed rule change is provided in section 4.3.

To ensure that appropriate measures are in place to address the gaps we have identified whilst a rule change process is underway, we propose to prepare an interim non-binding AER guidance note on export limits. This will assist in providing DNSPs with clarity about what information should be provided to consumers will need in their terms and conditions. Further detail on this guidance note is in section 4.3.

### **Proposed action 6: Governance of consumer energy resources and traders; governance of flexible export limits**

Governance of traders' operation of consumer energy resources is a key enabler of flexible export limits. As the market evolves, aggregators and retailers will look to optimise consumers' energy resources. We expect that this will require traders to ensure that they comply with flexible export limits.

There are also broader issues that sit outside the scope of the existing National Electricity Law regulatory framework governing technical compliance with standards, interoperability and the role of installers and manufacturers in this area. While this review is aimed at addressing the discrete issues that relate specifically to enabling flexible export limits, there are broader enabling factors that we suggest market bodies, under the coordination of the Energy Advisory Panel, look at as a matter of priority.

A device's technical compliance with technical standards and interoperability requirements will be key to the efficient implementation and operation of flexible export limits. Greater clarity is required on both the technical governance of consumer energy resources and governance of flexible export limits.

Greater clarity is required on the roles and responsibilities of the trader in respect to flexible export limits. Several DNSPs noted that the lack of regulation of traders and differences in financial incentives to comply with flexible export limits represented a barrier to their successful implementation.

### **Outline of proposed action 6**

There is further work to be undertaken on the regulatory framework to clarify roles and responsibilities, and to capture third parties' non-compliance with technical standards.

We note that the AEMC is undertaking work on standards compliance through its consumer energy resources Technical Standards review. AEMO's report on DER technical settings illustrates the problems already present with ensuring technical compliance with consumer energy resources inverters. This issue will increase in importance if device interoperability and behind-the-meter interoperability is mandated.

The AEMC's work identifies key regulatory issues which touch on the limits of the national energy law and rules, and suggests the need for broader, coordinated reforms to provide greater clarity on the roles and responsibilities of different market participants supporting the operating of efficient and effective markets, and to capture of benefits from implementing flexible export limits. We will work with the AEMC as they continue to monitor the implementation of their actions outlined in the consumer energy resources technical standards review.

The market bodies and jurisdictions should engage in a broader strategic discussion about consumer energy resources governance and roles and responsibilities of market participants including traders/retailers, with discussions commencing by the end of this year.

### **Proposed action 7: Monitoring export limit performance and information provision**

Since the release of our Flexible Export Limit Issues Paper in October 2022, we have since published our final report on Incentivising and Measuring Export Performance in March 2023. Our export services performance report includes metrics that will allow the AER to monitor flexible export performance. We anticipate that over time that these metrics will evolve as DNSP data capture and access to smart meter data improves. More specific metrics for flexible export limits will be outlined in the reporting requirements section of the Export Limit Guideline once a head power in the rule has been established.

### **Outline of proposed action 7**

The AER will continue to monitor the implementation of flexible export limits as part of the AER's broader monitoring and reporting of export services.

### **Proposed action 8: Further AER guidance material**

Having heard stakeholder feedback our view is that we should provide further clarity on the AER's expectations regarding flexible export limits implementation, including business case development.

### **Outline of proposed action 8**

We will review and amend our guidance note on consumer energy resources expenditure integration in 2024 to provide more information to DNSPs on how they should consider network expenditure alternatives, quantify benefits, and explain the interrelationships between flexible export limits and export tariffs to support business cases for expenditure to implement flexible export limits.

We will also amend our Export Tariff Guidelines to require networks to explain the interaction and inter-relationship between pricing and flexible export limits.

### **Proposed action 9: Communication protocol**

Consumers who opt into a flexible export arrangement will need to have devices that that comply with specific communication and performance standards to enable the devices to be compatible with flexible exports. This includes the interoperability standard IEEE2030.5 and the Common Smart Inverter Profile - Australia (CSIP-Aus) which has been developed specifically to support communication exchanges between Australian DNSPs and customers for the purposes of communicating flexible export limits.

The ESB is currently considering whether to adopt a nationally consistent communication protocol in the form of CSIP-Aus. These minimum interoperability requirements for new installations are currently subject to a cost-benefit analysis that will separately be brought to Ministers for consideration.

### **Outline of proposed action 9**

The AER is supportive of the benefits of a nationally consistent protocol to be adopted where supported by rigorous cost benefit analysis. The AER and will work with other market bodies to explore the potential to provide integrated guidance, including in relation to any potential adoption of a nationally consistent approach to CSIP-Aus implementation.

## **4.2 Medium term actions**

### **Proposed action 10: Notification period – provision of forecasting information**

The AER's view is that we should provide more clarity on flexible export limits forecasting information required to support efficient energy market operation.

### **Outline of proposed action 10**

While this is an issue that does not require an immediate response, a framework could be developed in the future when the market is more mature. This issue should be revisited as part of our review of export services.

### **Proposed action 11: Interaction between flexible export limits and export pricing**

We should continue to promote efficient network investment and better network utilisation to deliver customer affordability.

Flexible export limits and tariffs are interconnected tools that DNPS may use to manage network congestion and support the efficient integration of consumer energy resources. It is important for DNPSs to engage with stakeholders in developing their thinking on flexible/dynamic connection arrangements and price signals.

#### **Outline of proposed action 11**

The AER will continue to support the use of network tariffs in combination with dynamic connection arrangements to test various approaches.

We propose that we use all available opportunities when updating guidance to communicate expectations that if networks are seeking to implement flexible export limits, they must:

- 1) explain the interaction of flexible export limits with export tariffs and intrinsic hosting capacity as part of consultation on developing their Tariff Structure Statement.
- 2) explain the interaction and operation of flexible export limits in the context of the networks' broader consumer energy resources integration strategy.

### **Proposed action 12: Export services review**

The AER's review of incentive arrangements for export services in 2027 will assess their effectiveness and determine whether further refinements to regulatory settings are required to promote more efficient network utilisation and market operation

#### **Outline of proposed action 12**

As part of this review, we will consider whether there are opportunities for further standardisation and harmonisation of flexible export limit arrangements to deliver increased consumer and market benefits. We can undertake the review earlier if sufficient data becomes available.

## **4.3 Rule change request**

The AER has identified throughout this response document key matters for which we propose to submit a rule change request. The precise content of the rule changes will be clearly defined through the consultative rule change process.

The first part of the rule change proposal will focus on establishing a regulatory framework for capacity allocation in the National Electricity Rules and outlining requirements that DNPSs must have regard to in seeking to implement flexible export limits. The AER will seek a head of power to allow us to make a binding Guideline including matters such as the below:

- Capacity allocation principles and methodology

- Consumer participation
- Customer education and awareness
- Consultation requirements
- Governance arrangements
- Performance reporting and monitoring
- Dispute resolution

The issue of disputes between customers and DNSPs about the application of flexible export limits is potentially significant. We therefore propose having a mechanism to deal with dispute resolution in the Guideline.

The binding Guideline would use an outcomes-based approach that sets out the outcome the requirements are aimed at achieving and the key considerations DNSPs must have regard to in implementing and using flexible export limits. This will include a requirement on DNSPs to develop capacity allocation methodologies in accordance with capacity allocation principles, and to obtain approval for these from the AER as part of the revenue determination process.

The second part of our rule change proposal will focus on seeking new rules that specifies the information DNSPs will be obligated to provide to consumers who opt-into a flexible export limit arrangement and to give effect to our suggested actions outlined in proposed action 5.

This rule change would be aimed at providing specific information to customers who opt-in to a Flexible Export Limit, including setting out the specific terms and conditions in the relevant model standing offer for flexible export limits, including:

- the DNSPs' compliance obligations in relation to these terms and conditions.
- that where a third-party provider manages a customers' energy resources through a flexible export limit, a separate agreement between the DNSP and third-party provider is required.
- the specific operating parameters of the customer's flexible export limit and the circumstances in which this may vary.

This rule change is intended to promote greater transparency and consistency in flexible export limit arrangements, as well as clarify a DNSP's compliance obligations. A high-level overview of key elements of the rule change are summarised in the Table 1 below.

**Table 2 - Overview of proposed Export Limit Guideline**

Amendment category	Description
<b>Capacity allocation principles and methodology</b>	<ul style="list-style-type: none"> <li>• DNSPs must develop a capacity allocation methodology for allocating capacity on its network to consumers and must seek approval of this methodology by the AER as part of the revenue determination process.</li> <li>• The capacity allocation methodology must be consistent with the capacity allocation principles developed by the AER.</li> </ul>



Amendment category	Description
	<ul style="list-style-type: none"> <li>The DNSP must demonstrate how its capacity allocation methodology complies with the capacity allocation principles as set out in the AER's Export Limit Guideline.</li> </ul>
<b>Consultation and engagement requirements</b>	<ul style="list-style-type: none"> <li>DNSPs must provide a customer friendly overview that outlines how their approach towards calculating capacity allocation is consistent with the capacity allocation principles and demonstrates how consumer and stakeholders' views have been reflected.</li> </ul>
<b>Governance arrangements</b>	<ul style="list-style-type: none"> <li>The AER will assess that a DNSP's capacity allocation methodology is consistent with the capacity allocation principles as part of the DNSP's distribution determination.</li> <li>Approved capacity allocation methodologies will apply throughout the DNSP's regulatory control period unless varied in accordance with the AER's capacity allocation guideline.</li> <li>DNSPs will be required to publish an approved version of the capacity allocation methodology and approach on the DNSP's website.</li> </ul>
<b>Performance reporting and monitoring</b>	<ul style="list-style-type: none"> <li>DNSPs to be subject to ongoing reporting and monitoring of their compliance as specified in the AER's Guideline.</li> </ul>
<b>Opt-in arrangements</b>	<p>We will seek a rule change to establish requirements for DNSPs to:</p> <ul style="list-style-type: none"> <li>Convey to consumers that the flexible export limit model standing offer is opt-in only at this stage.</li> <li>Outline the terms and conditions in their Model Standing Offers for flexible export limits.</li> <li>In addition, a DNSP can voluntarily: <ul style="list-style-type: none"> <li>Provide the Model Standing Offers for both (flexible and static) to consumers opting into flexible export limits to help consumers make an informed choice on what best suits their circumstances.</li> </ul> </li> <li><i>The AER will provide further guidance on best practice for DNSPs in relation to opt-in arrangements through a non-binding interim guidance note (not part of rule change).</i></li> </ul> <p>Through the rule change we will also seek to establish requirements for DNSPs to provide:</p> <ul style="list-style-type: none"> <li>Information clearly setting out a DNSP's compliance obligations when making arrangements with consumers who opt-into flexible export limit arrangements.</li> </ul>

Amendment category	Description
	Information that clearly states that where a third-party provider manages a customers' energy resources through flexible export limits, that a separate agreement between the DNSP and third-party provider is required.

#### 4.3.1 Interim guidance note

As an interim measure, pending the completion of a rule change process, we will prepare non-binding guidance to inform DNSPs about the AER's expectations and encourage them to consider flexible export limits instead of network expenditure in the first instance. We could set out the following expectations in such guidance:

- How networks should seek to design flexible and static export limits (level of evidence we would expect to see and justification in expenditure proposals)
- Consultation (who the DNSPs should consult with, what they should consult on, and the type of information to be provided through the consultation process)
- Information provision for customer education and awareness and how DNSPs specify terms and conditions contained in their Model Standing Offers relating to flexible export limits
- Monitoring, reporting, compliance – clarification on the roles and responsibilities of different parties in ensuring compliance with flexible export limits and expectations on dispute resolution.

This will also require ensuring that interrelated AER documents and initiatives are aligned with our approach on flexible export limits. These documents and initiatives include the [review of consumer protections for future energy resources](#), the [DER Expenditure Guidance Note](#), the [customer export curtailment value methodology](#), and [AER incentivising and measuring export performance](#).

#### 4.3.2 Rule change proposals: future requests

Over time it is possible that once more information on the benefits and costs of flexible export limits are gathered a larger suite of rule change requests specifically designed for flexible exports may be required. The AER will continue to monitor the development and implementation of flexible export limits along with other market bodies.

## 5 Next steps

Our next steps will focus on progressing actions that fall within the AER's existing scope of powers. These include:

- Updating existing AER guidance material to clarify flexible export limits and how guidance material might overlap or interrelate with other AER guidance or Guidelines.
- Publishing an interim guidance note to provide immediate guidance to DNSPs on key considerations when seeking to design and implement flexible export limits, while a rule change request is being developed (we estimate by approximately early 2024).
- Adopting a more proactive engagement approach with stakeholders who are less mature in their understanding of the regulatory framework (such as technical providers, aggregators, traders, consumer energy resources retailers, and installers) to ensure that their feedback is being captured and reflected in our regulatory reform work.
- Working with Energy Consumers Australia, AEMC, and AEMO to develop a set of nationally consistent fact sheets and reference material to support consumers make more informed decisions about consumer energy resources and make it easier for new participants to navigate and understand the regulatory framework.
- Developing a rule change request to establish a regulatory approach towards capacity allocation and the ability for the AER to establish Export Limit Guidelines. We aim to submit this rule change request in approximately February 2024. We estimate that a Final Rule could be published in late 2024 / early 2025, and the Export Limit Guideline could then be published in 2026, should the rule change proceed.

Throughout feedback on our Issues Paper stakeholders have noted the need for greater national consistency in technical requirements and governance arrangements to support the implementation of flexible export limits and market development of new product and service offerings.

National consistency could be achieved via a range of approaches, each with their own advantages and disadvantages. For example, the ESB has delivered a directions paper under the interoperability workstream looking at whether there is a need for requiring a consistent communications protocol across all jurisdictions, and, if so, what that technology standard should be and how it should be implemented. Communication capability is a prerequisite for flexible export limits, as they enable customer devices to receive signals which increase or decrease exports.

A consistent national communications protocol would provide clarity to industry, including manufacturers, and confidence to invest in the development and offering of a wider range of more sophisticated services and smoother experiences for customers, however it would also entail costs.

The final report on Interoperability is due to Ministers in 2023. As part of this, the ESB commissioned a cost-benefit analysis on setting CSIP-Aus as the consistent technical standard for new and replacement installations.

We will await findings from the Interoperability workstream to determine whether there is a need to incorporate these findings as part of our rule change request. We will continue to work closely with other market bodies such as AEMC and AEMO to progress work aimed at improving the effectiveness of governance arrangements.

The AER will continue to monitor developments in this space and examine the effectiveness of current arrangements to determine whether further changes are required to deliver increased consumer and benefits.

## Appendix A – other issues

There were a range of other issues raised by stakeholders as part of their response to the Issues Paper. These issues primarily related to:

- The need for a technical regulator
- Difficulties in stakeholders navigating overlapping consumer energy resources policy and market reforms
- The need for DNSPs and market bodies to engage more with technical providers and installers
- Key design considerations for flexible export limits
- Scope of the AER's review
- Incentivising consumers to use flexible export limits

### ***Need for a technical regulator***

The need for a technical regulator has been a theme to emerge as part of stakeholder feedback on governance arrangements for consumer energy resources and traders and governance arrangements to support the implementation and efficient operation of flexible export limits. This issue has also arisen as part of stakeholder feedback on consultation on the AEMC's consumer energy resources technical standards review and AEMO's report on compliance with DER technical settings.<sup>107</sup>

Based on the findings from the AEMC's Draft Report on consumer energy resources technical standards and AEMO's Compliance of DER with Technical Settings Report, coupled with our own analysis of stakeholder submissions on governance, we consider there would be benefit in market bodies working together to determine a way forward on consumer energy resources governance arrangements more broadly. This is consistent with the AEMC's draft recommendation that further work is required to determine if reform of national technical regulation is needed and its findings on the challenges created from having fragmented regulatory arrangements.

As noted in section 3.17, the issues surrounding governance arrangements go beyond the scope of flexible export limits and are best addressed through existing work being undertaken by the AEMC and AEMO. Section 5 provides further guidance on how this issue could be progressed.

### ***Difficulties in stakeholders navigating overlapping CER reforms and engaging with technical providers and installers***

Several stakeholders expressed frustration in trying to navigate the myriad of overlapping policy and market reforms on consumer energy resources that have been proposed or

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<sup>107</sup> See AEMC, [Review into Consumer Energy Resources Technical Standards](#), Draft Report, 27 April 2023 and AEMO, [Compliance of Distributed Energy Resources with Technical Settings \(Compliance to AS/NZS4777.2\)](#), April 2023.

implemented in the last 24-36 months with the same goal of increasing network hosting capacity.<sup>108</sup>

In their joint submission, original equipment manufacturers (businesses which manufacture consumer energy resource devices) suggested that networks and regulatory bodies needed to come up with a clear roadmap of changes and consider what is feasible for industry to comply with.<sup>109</sup> Tesla raised the concern that the nature of overlapping market and policy reforms, in addition to networks seeking to consult on elements of their regulatory proposals, made it difficult for interested participants to meaningfully engage and provide input.

Specifically, it was noted in OEMs' joint submission that only one OEM and no installers responded to the recent ESB interoperability consultation paper.<sup>110</sup> From a practical perspective, it noted that if regulatory bodies are not getting proper feedback from OEMs, resellers and installers then this is likely to impact the effectiveness of new reforms and their ability to achieve their stated goals and benefits.

Tesla suggested that one way of addressing this issue is for the AER and others to host targeted forums for specific stakeholder types— OEMs, VPP developers and installers, to stress test major concerns and provide these groups with the opportunity to directly present positioning and concerns.<sup>111</sup>

Energy Queensland also noted that inconsistent use of terminology in relation to consumer energy resources across broader energy legislation, International and Australian Standards, products and industry more broadly creates the potential for confusion and should be addressed.<sup>112</sup>

The regulatory framework is currently in a state of flux as it tries to adapt to keep pace with the rapid pace of change occurring in the market. This is being driven by technical advancements and the emergence of new innovative products and service offerings. To try and keep pace with these changes, regulatory bodies are having to progress packages of reform work in parallel. We understand that the rapid pace of change, coupled with multiple and overlapping reforms, is challenging for stakeholders and market participants to navigate and provide meaningful input.

We have shared these findings with other regulatory bodies and will aim to work collaboratively with them to develop ways to support stakeholders to become more meaningfully engaged. Specific measures that the AER is seeking to take to help address this issue include:

- Clearly highlighting in our work where there are key touch points or interdependencies with other reform work being conducted by other market bodies or by other AER workstreams.

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<sup>108</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Joint OEMs and Tesla.

<sup>109</sup> Joint OEMs, *Flexible Export Limits Issues Paper*, 9 December 2022, p 9.

<sup>110</sup> *Ibid*, p. 5.

<sup>111</sup> Tesla, *Flexible Export Limits Issues Paper*, 9 December 2022, p. 2.

<sup>112</sup> Ergon Energy and Energex, *Flexible Export Limits Issues Paper*, 9 December 2022, p.1.

- Seeking to more proactively engage with technical providers and installers to ensure that they are aware of upcoming reforms and to help ensure that their concerns and feedback are captured.
- Updating relevant guidance notes and guidelines to ensure that we use terminology consistently across different streams of AER work to help reduce stakeholder confusion.

### **Key design consideration for flexible export limits**

Tesla provided a range of feedback on design issues that should be considered as part of the design and development of flexible export limits. This included:<sup>113</sup>

- Optionality – customers should be afforded choice on the level of exports they want, including the level of firmness and that multiple options should be tested with VPP providers and developers.
- Export range – Tesla considered allowing networks to use complex methodologies such as the Customer Export Curtailment Value (CECV) does not provide sufficient transparency for consumer energy resources resellers to provide clear guidance to consumers on the economic benefits they will get from purchasing their consumer energy resources.
- Simplicity – export limits must be simple enough that resellers can calculate system pay-back periods/returns which is necessary for reseller compliance with the New Energy Tech Consumer Code as an example) and that customers are able to do their own due diligence in a simple manner to confirm the value that has been described to them.

We will take these issues into consideration and will consult more broadly on these when we develop our guidance note and guidelines on export limits, as outlined in chapter 4 below.

### **Scope of the AER's review**

Energy Queensland raised concerns that the scope of the AER's review was too narrow by only focusing on export limits rather than the looking at the entire dynamic operating envelope framework.<sup>114</sup> It noted that the AER has not kept pace with the rate at which flexible loads are connecting, which could fast outpace the regulatory framework. It specifically noted that EV charging was likely to have a specific impact on peak demand in the future. It considered supporting the integration of flexible loads sooner will increase the aggregate capacity to consume excess generation, minimising curtailment and reducing the contribution to peak demand.

We note Energy Queensland's concern regarding the focus of this review. As outlined in section 3.1, the rationale for focusing on flexible export limits was to enable a prioritised and targeted approach for addressing immediate gaps in regulatory settings impeding networks' ability to dynamically control and operate their networks.

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<sup>113</sup> Tesla, *Flexible Export Limits Issues Paper*, 9 December 2022, p. 6.

<sup>114</sup> Ergon Energy and Energex, *Flexible Export Limits Issues Paper*, 9 December 2022, p.1.

We note that ARENA has undertaken work aimed at examining the value of load flexibility in the NEM to further quantify the potential benefits from demand side participation.<sup>115</sup> This information is intended to help inform the development of product offerings. The scope for this study was jointly developed by ARENA, AEMC, AER, AEMO and the ESB, with the intention of informing the development of a long-term vision for the enablement of demand side participation across major sectors of the Australian economy.<sup>116</sup>

The ESB has undertaken work through its EV Smart Charging issues paper, further exploring issues around equipment standards, interoperability standards, and policy settings required to support EV uptake and efficient charging.<sup>117</sup>

The AER anticipates that the ESB's work will help in identifying further gaps in regulatory settings that need to be addressed to support dynamic load control.

### ***Incentivising consumers to use flexible export limits***

Several stakeholders raised the need for DNSPs to incentivise customers to adopt dynamic connection agreements.<sup>118</sup> EnergyAustralia in particular, considered that there was a need for consumers that participate in flexible export limits to directly share in some of the benefits from enabling networks to defer network augmentation.<sup>119</sup>

The main incentives or benefit that consumer energy resources owners receive from choosing to adopt a dynamic connection agreement is that their system can export more electricity than would otherwise be possible under current static arrangements. The ability to export more energy creates new market opportunities for aggregator, trader, and virtual power plant models to develop, which provide the ability for consumer energy resources owners to access additional revenue streams and earn a higher return on their investment.

As noted in section 3.5, further work is required across industry to uplift consumer awareness and education on the benefits of flexible export limits and different service offerings this potentially unlocks for consumers. We note that under an opt-in approach, adoption rates are likely to be slower than under opt-out arrangements. This places a greater need on DNSPs being able to effectively communicate the benefits to consumers to incentivise their uptake.

During early implementation and adoption, if customers value improved export services, they should communicate this with their DNSP. DNSPs can then propose bespoke export service incentive arrangements under the AER's export incentive service scheme (ESIS). Flexible export limits may be a low-cost option for DNSPs to achieve greater export service levels (beyond levels funded by ex-ante expenditure allowances). Therefore, if subject to the ESIS, DNSPs face a financial incentive to improve export service levels and may be more likely to improve consumer awareness and education about the potential customer benefits of flexible export limits. The end result may benefit both the DNSP and the customer. The DNSP would

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<sup>115</sup> [NERA Economic Consulting, Valuing Load Flexibility in the NEM: Prepared for the Australian Renewable Energy Agency, 1 February 2022.](#)

<sup>116</sup> <https://arena.gov.au/knowledge-bank/valuing-load-flexibility-in-the-nem/>

<sup>117</sup> Energy Security Board, 'Electric Vehicle Smart Charging Issues Paper – For Consultation, July 2022.

<sup>118</sup> See stakeholder submissions to the Flexible Export Limits Issues Paper from Australian Energy Council, EnergyAustralia, Rheem and CET.

<sup>119</sup> EnergyAustralia, *Flexible Export Limits Issues Paper*, 19 December 2022, p.6.



be rewarded with positive revenue adjustments for improving service levels (above a funded level), and a greater number of customers would realise the benefits of flexible export limits, including consumer energy resources customers (through greater export levels and more feed-in tariff revenue) and other customers (through lower wholesale electricity prices).

### **Issues to be addressed by other workstreams**

Our Issues Paper sought feedback on several areas relevant to the implementation of flexible export limits which are either currently being progressed by other ESB Consumer Energy Resources Implementation Plan workstreams or concerned broader issues that related to the efficient implementation of consumer energy resources more generally. These issues included:

- Governance arrangements for consumer energy resources and traders
- Device capability to respond to flexible export limits
- Data access, protection, and privacy
- Efficient communication of flexible export limits at scale

The AER has been working in close collaboration with other market bodies throughout our review to support the uptake of flexible export limits. We have had several joint working group sessions with our regulatory counterparts to pass on and discuss feedback received from stakeholder submissions on our Issues Paper and how this feedback would be best addressed.

Regular sessions with regulatory bodies to discuss potential overlaps between different workstreams has helped to promote knowledge sharing and ensure that a consistent approach is being adopted between the different reform areas relating to consumer energy resources implementation.

# Appendix B – AER consumer energy resources strategy

## THE GOAL

Consumers are able to own energy resources and use those resources to consume, store and trade energy as they choose in support of the broader long-term interest of all energy consumers

NETWORK INTEGRATION	EFFICIENT SIGNALS & INCENTIVES	CONSUMER EMPOWERMENT	SAFEGUARDS & STANDARDS
<b>Objective</b> Consumers benefit from prudent and efficient investment to integrate their energy resources	Incentives and signals guide consumers to use their energy resources efficiently, equitably and to their benefit	Markets, innovation and competition empower consumers to use their energy resources as they prefer	Consumer energy resources and related services are trusted to provide value to consumers
<b>Outcomes</b> Networks are incentivised and able to identify and undertake prudent and efficient investment to integrate consumer energy resources	Consumers identify and understand what it costs to transport energy to and from them and network prices reflect those costs	Where feasible, consumers have genuine choice of market providers offering services to meet their preferences in how they use their energy resources	Mandated standards and customer protections balance protections and costs to be in consumers' long-term interest and are trusted
<b>Outputs of activities</b> Toolkit to support network businesses to identify investments that enable efficient use of consumer energy resources Reports and any required incentives are produced to promote export service performance	Efficient network prices, smart meters and other technology that enables consumers to get the most value out of their energy resources Rules and frameworks to enable networks to use flexible export limits to allocate full network capacity	Consumer co-designed market reforms to integrate flexible demand and consumer energy resources Interoperability needs and pathway for required standards identified Ring fencing, waivers and sand-boxes applied to enable innovation and competition	Frameworks around creating and enforcing technical standards are fit for consumer energy resources Review identifies consumer protections for the energy transition. Guideline limits use of static export limits
<b>AER activities</b> Consumer energy resources integration expenditure note and customer export curtailment value methodology Guidelines update for stand-alone power systems and access & pricing reforms Incentive review for export services Export service performance reporting	Tariff reform program Includes export tariff reforms and tariffs to manage load from electric vehicles Flexible export limit work. Includes approving trials and the reviewing required policy and regulation Engage in the AEMC's metering review	Engage in ESB's customer insights collaboration and interoperability work Engage in market reforms: flexible trading arrangements, scheduled lite, electric vehicle smart charging review Ring fencing waivers and compliance Regulatory sand-boxes and enquiry service	Advocate for better governance as part of the AEMC's technical standards review Assist with ESB's standards development Review of consumer protections for future energy services Connection charge guideline review

### What are consumer energy resources?

Consumer energy resources are distributed energy resources that are owned or leased by residential and small-business consumers (or groups of consumers) that:

- Generate or store electricity, or
- Can alter demand in response to external signals, and
- Includes consumer loads that are flexible and efficiently optimised either through automation or direct behavioural response.

### Enabling ESB programs to support priorities and activities



### Priority framework to approach the situation



Regulatory and market design reflects and responds to consumers' diverse understanding and preferences around consumer energy resources

### Priority framework to approach the situation

There is limited visibility of the large amounts of consumer energy resources installed, and little demand-side participation

This is improving from a low base, but there is an increasing need to manage minimum demand and voltage levels and to efficiently service future loads, such as electric vehicles

## Glossary

Term	Definition
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ARENA	Australian Renewable Energy Agency
CECV	Customer Export Curtailment Value
CER	Consumer energy resources – a subset of distributed energy resources, this term refers to ‘behind the meter’ renewable energy resources and can include rooftop solar PV units, battery storage, thermal energy storage, electric vehicles/chargers, smart appliances and home energy management technologies.
CSIP	Common Smart Inverter Profile
CSIP-Aus	Common Smart Inverter Profile – Australia
DER	Distributed Energy Resources
DNSP	Distribution Network Service Provider
DOE	Dynamic Operating Envelope
ECA	Energy Consumers Australia
ESB	Energy Security Board
ESIS	Export Service Incentive Scheme
ESOO	Electricity Statement of Opportunities
EV	Electric Vehicle
FEL	Flexible Export Limit
ISP	Integrated System Plan
LV	Low Voltage
MSO	Model Standing Offer
NEM	National Electricity Market
NER	National Electricity Rules
OEM	Original Equipment Manufacturer
PIAC	Public Interest Advocacy Centre
SA	South Australia
SAPN	SA Power Networks
TNSP	Transmission Network Service Provider
TSS	Tariff Structure Statement