

COMBINED REFORMS

# CONSUMER INSIGHTS WORKSHOP

## CUSTOMER JOURNEY AND INSIGHTS WORKSHOP REPORT

PREPARED FOR ENERGY SECURITY BOARD,  
AUSTRALIAN ENERGY REGULATOR  
AND AUSTRALIAN ENERGY MARKET  
COMMISSION

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# Overview

The Consumer Energy Resources (CER) Implementation Plan is responding to the extraordinary pace that Australian households and businesses are investing in solar panels and other energy technologies, which they are doing for a range of reasons such as: they want to reduce their bills; manage their energy use; or to do their bit for the environment. As outlined by the Energy Security Board's (ESB) CER Implementation Plan, the intent of the reforms are to build a grid where customers can continue to meet their primary household and business needs as energy users, while benefitting from an increasingly sophisticated array of services and, at the same time, use their assets to create value across the system for everyone.

The various reforms are critical to deliver products, services and systems that work for customers, and respond to their evolving needs and expectations in a fast-moving market.

This workshop looked at three key reforms:

- Interoperability
- Flexible exports
- Technical standards review

Recognising the close relationship between these three key reforms, a consolidated workshop was held to explore the customer insights and develop a shared customer journey. Through this shared journey, it was hoped to uncover the common customer needs, impacts, benefits and possible risks to be considered.

This report documents the workshop outcomes and discussion and provides insights to be considered by the Energy Security Board (ESB), Australian Energy Regulator (AER) and Australian Energy Market Commission (AEMC).

# About the reforms

While there are three different reforms; there are strong relationships with how each reform works together to provide improved customer outcomes and enable the uptake of CER.

Reform	Details of the reform
Flexible exports	<p>The review will consider whether changes to the regulatory framework are needed to support the implementation of flexible export limits. Currently in the National Electricity Market (NEM), there are static limits on the export of energy from consumer energy resources (CERs). These limits are generally low to account for periods of high congestion within the distribution network. This congestion is likely to increase with the rising numbers of CERs and could lead to large disparity between consumer experiences – legacy arrangements would likely have high export limits than newer connections.</p> <p>Network limits are determined by prevailing conditions, power flow and the capacity of the local network. <span style="background-color: yellow;">Adopting flexible export limits, instead of static limits, will lead to more equitable consumer access in the exporting of electricity and it will result in a more efficient use of CERs.</span></p> <p>Flexible Export Limits <a href="#">issues paper</a> from AER</p>
Interoperability	<p>This work will consider how to increase the interoperability of Consumer Energy Resources (CER) installed in homes and help energy resources work together to form a smarter consumer energy resources ecosystem.</p>
Technical standards	<p>This review is considering:</p> <ul style="list-style-type: none"><li>• compliance with, and enforcement of, CER technical standards in the NER</li><li>• the interpretation of standards by national electricity market (NEM) participants and other relevant stakeholders</li><li>• interactions between the NER and other regulatory regimes that require compliance with CER technical standards</li></ul>



# Key customer insights

The workshop generated the following key insights:

- The complex nature of these reforms means that much of the **impact is likely to be invisible to customers**. Nonetheless, customer needs, expectations and risks should be carefully considered.
- Communication with customers needs to be **clear and compelling** to generate buy-in and interest in any changes or requirements, while also reassuring the public of the benefits.
- **Building trust with customers** will be vital to unlock the potential benefits and ensure they fully engage with the benefits for themselves and the system.
- **Installers are likely to play a significant role** in the customer-facing interactions as part of these reforms. It will be important to provide installers with training, information and support.
- These reforms provide the opportunity to **standardise information for energy assets** to make it easier for customers to understand what they have in their homes and to make good choices.
- There is a **risk that these reforms will create increased complexity** for customers rather than simplifying compliance. A coordinated approach and consideration for the holistic experience is vital.



# Workshop tools

## Activity sheets

The workshop consisted of three focused activities that were designed to generate customer insights. Each group received the activity sheets to support discussion and capture table feedback.

**ACTIVITY 1: Understanding the opportunity**

Using your use case explore the following questions:

What is the problem being solved by the reform for customers?

How are customers likely to benefit?

What will be the role of customers in the future?

**ACTIVITY 2: Customer journey**

1. AWARENESS & EDUCATION

2. INSTALLATION

3. OPERATIONS & MAINTENANCE

4. RETENTION & SWITCHING

	All steps to raise awareness and educate customers about the reform changes.	All stages related to the installation or implementation for customers.	All ongoing activities related to operations and any ongoing maintenance.	Retaining customer engagement or enabling switching as relevant.
Steps involved				
Customer touch points				
Pain points or barriers				

**ACTIVITY 3: Similar and different**

What insights, actions, risks or touch points were similar across all three reform?

What insights, actions, risks or touch points were different across all three reform?

**ACTIVITY 4: Reflection and final thoughts**

Reflecting on the impacts and risks, how might they be overcome? What might need to be considered?

After considering the mitigations what are your final thoughts for the reform team?

# Understanding the opportunity for customers

Flexible exports

## What is the problem being solved?

- Network congestion due to amount of energy being exported to the grid.
- Lack of consumer understanding regarding flexible exports and self-use.
- Installers not being equipped to educate consumers.
- Lack of future proofing: consumers are unprepared for future system sizes and EVs.
- Consumer barriers to engagement including a lack of tools, ability and support.
- Culture of selling.

## How are customers likely to benefit?

- Enables customers to do more with their systems.
- Lower costs for all customers as less money spent upgrading networks.
- Building consumers base-line capability for future opportunities and technologies (such as CER).
- Increased interactions with service providers.
- Strengthened link between quality of equipment and customer needs.

## What will be the role of the customer in the future?

- Education within local communities, including local community events initiated by consumers.
- Peer to peer trading in the future.
- Broader role for consumers unable to access CER.

## Questions raised

- Will there be unintended consequences of flexible exports? The program needs to be beneficial for more people than just CER owners.

# Understanding the opportunity for customers

Interoperability

## What is the problem being solved?

- Operation of CER within network constraints.
- Future proofing of installations.
- Fragmented implementation of inverter communication protocol (i.e., CSIP-Aus).
- Lack of consumer understanding of technical standards compliance.
- Customer lock-in – i.e., customers are tied to certain brands/manufacturers as devices are not able to work with each other.

## How are customers likely to benefit?

- Ability to access higher export limits when offered by networks.
- Consistent requirements for manufacturers and installers, reducing potential confusion for customers.
- Interoperable devices provide consumers with more choice.

## What will be the role of the customer in the future?

- Investing in assets that meet interoperability standards
- Operating as part of a community and enabling benefits to others – ensuring their assets maintain compliance to standards.

# Understanding the opportunity for consumers

Technical standards

## What is the problem being solved?

- CER devices that are not compliant with standards cause instability to the electricity grid.
- Lack of trust in the installation process.
- Lack of trust in value for money.

## How are customers likely to benefit?

- A safer, more secure and more reliable system.
- Lower risk of curtailment or other Distribution Network Service Provider (DNSP) action to manage the system.
- Lower electricity bills.
- Better power quality.
- Able to export more if they want to and networks allow.
- Local solar.
- Clear roles and responsibilities of different bodies.


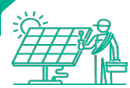


## What will be the role of the customer in the future?

- Stay informed and involved.
- Monitoring the operation and informing the correct body if something goes wrong.
- Long-term maintenance and support.




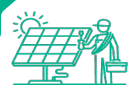


# Customer journey map

Flexible exports

	1.  <b>AWARENESS &amp; EDUCATION</b> All steps to raise awareness and educate customers about the reform/ changes.	2.  <b>INSTALLATION</b> All stages related to the installation or implementation for customers.	3.  <b>OPERATIONS &amp; MAINTENANCE</b> All ongoing activities related to operations and any ongoing maintenance.	4.  <b>RETENTION &amp; SWITCHING</b> Retaining customer engagement or enabling switching as relevant.
<b>Steps involved</b>	Customers without solar and/or batteries: online research, peer discussion and government provided information Customers with solar and/or batteries: government provided information and upgrading interest.	Ideally, the installer installs the equipment and the consumer is aware of how it operates Programming inverter and/or a wiring gateway, set up monitoring appointment for the customer, handover system to the customer, independent electrical inspection (Victoria) and meter change-over.	Ideally, customers will have more appropriately-sized systems, lower costs, and environmental benefits, so the ongoing maintenance should be worth the effort. Realising there is an issue and reporting it to the appropriate person. Who will be the body advising customer the limit has changed – unclear whether this would be advised by the retailer, DNSP or a third party.	An important thing to investigate is whether customers with flexible export limits experiences more friction with switching technology. How do customers switch between different export “levels” (e.g., SAPN), how is new network capacity allocated and then communicated, considering both new and legacy customers?
<b>Customer touch points</b>	Media, social media, word-of-mouth, energy retailer or supplier, local community groups or leaders (e.g., Geelong Sustainability and DNSPs)	Coordinating the details of the installation with the installer.	DNSP or third party communicating how FEL is working.	Longer relationship between customers and retailer or installer and DNSP communications.
<b>Pain points or barriers</b>	Installers or customers not knowing their export limits until the time of installation, too much or too little and/or conflicting information, misrepresentation to customers and additional costs.	Lack of customer understanding around how to use and optimise the system, particularly regarding self-consumption, lack of checking compliance and winding down the auditing role by CER.	Transparency around exports, feed-in tariffs, inspection gap post installation review, customers unsure on who to contact when they encounter a problem and customers unaware of a problem.	Customers maybe unsure on who to contact to upgrade the meter. Customers unsure of changes in export limits or unclear of the benefits.


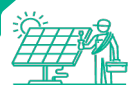


# Customer journey map

Interoperability

	1.  <b>AWARENESS &amp; EDUCATION</b>  All steps to raise awareness and educate customers about the reform/ changes.	2.  <b>INSTALLATION</b>  All stages related to the installation or implementation for customers.	3.  <b>OPERATIONS &amp; MAINTENANCE</b>  All ongoing activities related to operations and any ongoing maintenance.	4.  <b>RETENTION &amp; SWITCHING</b>  Retaining customer engagement or enabling switching as relevant.
<b>Steps involved</b>	Currently, obligations are fulfilled via connection agreements which customers may not know about or do and don't have a good understanding. Future steps that could improve understanding include simple, trusted labelling, production descriptions and pro-forma, feedback from operations and ECA plug-in.	Customers purchase a new device and integrates it with their existing systems. Installer signs off on compliant installation. Licensing obligations are fulfilled.	Most businesses provide fully featured interoperable devices. Monitoring operation: fault notification, register of compliance and app data. Hierarchy of control.	Depends on the nature of the contracts and business models, including whether it is CapEx or OpEx. In future, commercial neutrality and open interfaces could help enable this.
<b>Customer touch points</b>	Sales interactions with retailers and installers, word-of-mouth from friends, family and peers as well as online forums and reviews.	Bill and certificate provided by the installer. In future, the customer will be able to verify the functionality themselves.	Software to ensure the equipment is working, fully featured device status information, an Ombudsman dedicated to CER (similar to ACMA, long term touch point).	Purchasing new devices, services, or software.
<b>Pain points or barriers</b>	Customers are uninformed or lack understanding, product certification can't be trusted, and standards are exploited.	DNSPs unable or unwilling to enforce non-life-threatening non-compliance, inflexibility in compliance enforcement mechanisms, no ability for the customer to verify functionality themselves.	Warranty coverage and information might be unsatisfactory, customers are not informed on how to use the equipment, the cloud model is dependent on internet connectivity – customers may not have, customers unsure on who to contact when there is a problem and lock in.	Warranty lock-in, 'walled garden' business models, businesses deliberately locking customers into vertical integration and risk/liability for tariff changes.

# Customer journey map

## Technical standards

	1.  <b>AWARENESS &amp; EDUCATION</b> All steps to raise awareness and educate customers about the reform/ changes.	2.  <b>INSTALLATION</b> All stages related to the installation or implementation for customers.	3.  <b>OPERATIONS &amp; MAINTENANCE</b> All ongoing activities related to operations and any ongoing maintenance.	4.  <b>RETENTION &amp; SWITCHING</b> Retaining customer engagement or enabling switching as relevant.
<b>Steps involved</b>	Customers to be advised by trusted sources – online research, CEC accredited installer information, recommendations and information from networks. All communicated channels should be customer-friendly and accessible.	Communications between installer and customer, installer required to set inverter correctly, safety inspection, paperwork to DNSPs from installer or retailer, alteration request for meter reading from installer or retailer and standardised pack on how to maintain system.	Logbook kept of sales and maintenance.	Internet provider, household, energy retailer, household decisions usually made independently from considering a CER system.
<b>Customer touch points</b>	ECA plug-in, solar buyers guide (CEC, solar Victoria), installer quotes, site visits.	Installation crews, paperwork/certification that the system is correct, standing offer.	App – monitoring system performance, HEMS – integrating multiple CERs, data sources. Without tracking, customers may be unaware of performance issues.	Customer trying to change the settings themselves, rental contract and information regarding utilities and what they need to do, house sale contract and required asset information, new connection with energy retailer/DNSP, standard pack about CER in home
<b>Pain points or barriers</b>	Price differences, overwhelming volume of things for customer to think about, comparison of quotes, number of CERs used in the home with export capability.	Poor communication, lack of trust in installer, complicated paperwork and administration.	Performance not as expected, business case for pay back not on track.	Lack of knowledge and guidance on how to work with or update the system, lack of access to hardware upgrades.

# Similarities and differences

Stage 1: *awareness and education*

What insights, actions, risks or touch points were similar across all three reforms?	What insights, actions, risks or touch points were different across all three reforms?
<ul style="list-style-type: none"><li>• Importance of community in decision making.</li><li>• Customers need a trusted source of information.</li><li>• There needs to be standards for compliance, policing, and enforcement.</li><li>• Information should be consistent.</li><li>• Need to establish questions to ask regarding ECA plug-in.</li><li>• Lack of trust in legacy meters will likely extend to smart meters, without intervention.</li><li>• Incentives must be aligned.</li><li>• The important role of installers as a customer touch point.</li><li>• Customer understanding should be prioritised, particularly for complex systems and concepts.</li><li>• Inconsistency between jurisdictions will have effects.</li></ul>	<ul style="list-style-type: none"><li>• Who is the trusted source of information?<ul style="list-style-type: none"><li>– Why can they be trusted?</li><li>– What if they're wrong?</li></ul></li><li>• Mandatory vs non-mandatory.</li><li>• Essential vs non-essential.</li><li>• Customer assumptions.</li></ul>

# Similarities and differences

Stage 2: *installation*

## What insights, actions, risks or touch points were similar across all three reforms?

- Streamlining paperwork between customers and installers for better transparency.
- Focus on installer training and performance – some enforcement on installers by an independent party.
- Simplicity of information to the customer before installation.
- Expansion of approved inverters for customers.
- Set up and ongoing monitoring as a role for customers.
- Reliance on the internet.

## What insights, actions, risks or touch points were different across all three reforms?

- Purely for interoperability installers: consideration of the whole system rather than just the one installed device.



# Similarities and differences

Stage 3: *operations and maintenance*

## What insights, actions, risks or touch points were similar across all three reforms?

- Without good interoperability of devices in the home/business, the ability to optimise against export limit is compromised.
- FEL timing should support consumer flexibility.
- Need information throughout the life of device and FEL that informs the customer on how it's working and being optimised.
- Lack of consumer ability to identify a problem.
- Compliance and enforcement – who ensures equipment and limits are adhered to?
- Who has ongoing responsibility for ensuring compliance and performance? How do customers know who to contact with a problem?

## What insights, actions, risks or touch points were different across all three reforms?

- Consumer education on community value is needed.

# Similarities and differences

Stage 4: *retention and switching*

What insights, actions, risks or touch points were similar across all three reforms?	What insights, actions, risks or touch points were different across all three reforms?
<ul style="list-style-type: none"><li>• Accessibility and transparency of information for customers to make informed choices.</li><li>• Accessibility of information for new renters or homeowners of the property.</li><li>• Cybersecurity.</li></ul>	<ul style="list-style-type: none"><li>• Different levels of information are needed by customers at different stages. For example, most customers don't need to know the technical standards details.</li></ul>

# Reflection and final thoughts

Flexible exports

Reflecting on the impacts and risks, how might they be overcome? What might need to be considered?	After considering the mitigations, what are your final thoughts for the reform team?
<ul style="list-style-type: none"><li>• The user experience needs to be considered to ensure the installer delivers successful outcomes.</li><li>• A consistent installation standard.</li><li>• Publicity of successful stories.</li><li>• Accounting for diversity in installation businesses, such as external or internal contractors, customer services, one-man bands etc.</li><li>• Coordination between all the parties involved, such as the installer DNSPs, retailers etc.</li><li>• Community values and motivations must be considered.</li><li>• Prioritising consumer trust in the information provided.</li><li>• Early training on changes.</li></ul>	<ul style="list-style-type: none"><li>• Workshops and discussions to give all the relevant voices a chance to contribute.</li><li>• Collaboration across the industry.</li></ul>

# Reflection and final thoughts

Interoperability

Reflecting on the impacts and risks, how might they be overcome? What might need to be considered?	After considering the mitigations, what are your final thoughts for the reform team?
<ul style="list-style-type: none"><li>• Building trust with consumers.</li><li>• Balancing community and individual benefits.</li><li>• Positive vision for the future.</li></ul>	<ul style="list-style-type: none"><li>• Establishment of standards compliance and enforcement with regulatory backing. There should be a clear governance framework – could AER contribute?</li><li>• Delivering flexible exports and dynamic operating envelopes requiring both CSIP-AUS interoperability with native model as a default requirement.</li><li>• Behind the meter, CER based interoperability to enable churn.</li><li>• Market competition.</li><li>• No lock in, commercial or technical.</li><li>• Standards AER → DNSPs.</li></ul>

# Reflection and final thoughts

Technical standards

Reflecting on the impacts and risks, how might they be overcome? What might need to be considered?	After considering the mitigations, what are your final thoughts for the reform team?
<ul style="list-style-type: none"><li>• Which information should be communicated?</li><li>• When should information be communicated to consumers?</li><li>• How and by who should information be communicated?</li><li>• Training and skills must be kept up to date.</li><li>• Alignment of reforms.</li></ul>	<ul style="list-style-type: none"><li>• Align reforms and check interaction benefits customers.</li><li>• Standards for the long term operations and maintenances phases as well as the installation phase.</li></ul>



# Recommendations

Following the workshop, further synthesis was conducted to consider what was heard from participants and how the project teams could apply these customer insights into the ongoing development process.

- **The issues being worked through in these projects**, and how they fit together as part of the CER reforms are complex and challenging to communicate from a customer perspective. There is value in thinking about these projects in an integrated way using customer-journey mapping.
- **Design an experience for installers and suppliers** – it has been recognised that installers and providers will play a significant role in the customer facing interactions as part of these reforms. Providing suitable support to enhance retention and attraction to the profession, as well as build new capability to embed the effective reform changes and deliver full customer benefits – noting this will require more than regulatory initiatives, with industry and other stakeholders having critical roles to play.
- **Simplify energy asset information for customers** – these reforms correlate to an improved opportunity for customers to better understand their energy assets in the home and support them to make good decisions. Suggestions such as an energy asset log book, or standardised information (green tick) should be considered to support the implementation of these reforms. These customer initiatives could support communication and building of trust.
- **A refined customer journey to support these reforms** - these three reforms are related and reflect a different aspect of the overall ecosystem of changes for customers. **An integrated and considered customer journey** from beginning to end should be further developed.
- **Collaboration across the sector will be required for success** – there are many ways in which these three reforms will influence how products and services are delivered to customers – this will require collaboration across the sector to implement. It is recommended this collaboration commences early, with consideration given to establishing an ongoing forum to refine the customer journey, allocate responsibilities and build capacity across the sector to enable these changes.