



Australian Energy Market Commission

INTERIM ADVICE

**REGULATORY SANDBOX
ARRANGEMENTS TO SUPPORT
PROOF-OF-CONCEPT TRIALS**

7 MARCH 2019

REVIEW

INQUIRIES

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ABOUT THE AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

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SUMMARY

1 The Australian Energy Market Commission's (AEMC or Commission) interim advice to the Council of Australian Governments (COAG) Energy Council Senior Committee of Officials (SCO) is that current arrangements for facilitating proof-of-concept trials can be improved and that trials can be better facilitated and coordinated through the introduction of regulatory sandbox arrangements in the national electricity market (NEM). This is based on consultation with stakeholders and analysis of sandbox arrangements in Australia and overseas.

Request from SCO

2 The Commission has been requested to provide interim advice by February 2019 as part of the 2019 *Electricity network economic regulatory framework review* on how to best facilitate co-ordination of proof-of-concept trials and the need for formal regulatory sandbox arrangements to support innovative projects offering benefits to customers while managing any risks. The Commission was requested to consider issues beyond economic regulation and the need for regulatory sandbox arrangements in other parts of the NEM regulatory framework.

Consultation

3 The Commission has engaged closely with Australian Energy Regulator (AER), Australian Energy Market Operator (AEMO), Energy Consumers Australia (ECA) and Australian Renewable Energy Agency (ARENA) in preparing this interim advice, as requested by SCO. We have held one-to-one and group discussions with these bodies and considered their written submissions in detail.

4 The Commission published a consultation paper on 20 December 2018 inviting written submissions by 31 January 2019. Feedback from stakeholders suggested there were barriers to conducting proof-of-concept trials under the current regulatory framework, with stakeholders raising concerns including a lack of flexibility in the regulatory framework, the absence of a defined and well understood regulatory process for conducting trials and the complexity of the framework. Stakeholders highlighted that regulatory sandbox arrangements which provided further regulatory flexibility, a defined regulatory process for conducting trials and further guidance on navigating the regulatory framework for innovators would serve to better facilitate proof-of-concept trials and promote innovation.

Commission proposal

5 The emergence of innovative technologies and business models in the NEM can bring significant benefits to consumers.

6 The Commission considers that a regulatory sandbox initiative could provide for a regulatory framework that is better equipped to respond to the rapid change in the electricity sector and deliver customer benefits through innovation. To access regulatory sandbox arrangements, proof-of-concept trials would need to be time-limited and meet appropriate eligibility criteria, and appropriate consumer safeguards must remain in place.

7 The objective of these arrangements should be to encourage innovation which has the

potential to contribute to the long-term interests of consumers, rather than simply to facilitate an increased number of trials. Innovations that are in consumer's interests can also be encouraged by establishing a clearer process for proponents of proof-of-concept trials to approach energy market regulatory bodies for feedback and guidance on regulatory issues and regulatory options to avoid unnecessary delays and costs for eligible trials. This can help reduce the barriers to the introduction of more efficient approaches to the delivery of electricity services.

8 The Commission proposes a regulatory sandbox initiative that could make use of a variety of existing and new tools that could be applied according to their suitability to a proposed trial. The regulatory tools in the sandbox initiative could include the following:

- **Coordinated feedback and guidance on regulatory issues.** Market bodies should develop a new, coordinated approach to providing feedback and guidance to proponents of trials. This would involve one market body being a clear first point of contact for proof-of-concept trials who is able to provide "fast, frank feedback" on a range of issues, whilst referring to the other market bodies where appropriate.
- **A new AER regulatory waiver or exemptions power** that could provide time-limited regulatory relief from the rules to eligible trials. This could be used if an eligible trial required an exemption from a specific rule (or rules). As suggested by the AER, this could involve a broad power for the AER to grant specific exemptions and waivers to facilitate the conduct of proof-of-concept trials, subject to a "sandbox guideline" the AER develops in consultation with the market bodies and relevant stakeholders. The exercise of this power by the AER would be subject to eligibility criteria being met.
- **A new AEMC expedited rule change process for proof-of-concept for trials.** This could be used if an eligible trial required more substantial changes to market arrangements, such as new rules or the alteration of existing rules (e.g. eligible in-market trials). It is envisaged that these rule changes would be time limited, to facilitate the conduct of the trial. If the trial was successful, a permanent rule change could be initiated. The trial rule change process could be similar to the current expedited rule making process in the National Electricity Law (NEL), though likely involving a modified application of the National Electricity Objective (NEO) to allow evidence to be gathered through trials on the impact of innovation on the long-term interests of consumers.
- **Existing regulatory tools** such as the AER's ring-fencing waivers and retailer exemptions. The first point of contact would refer trial proponents to these processes where appropriate.

Next steps

9 The Commission considers that immediate steps could be taken to develop a new process for coordinated guidance and feedback for trial proponents collaboratively between the AEMC, AER, AEMO, ARENA and ECA ahead of the implementation of the other new tools. This work could commence in the first half of 2019.

10 Some of the proposed new tools would require changes to the NEL (and possibly the National Energy Retail Law (NERL)). Further stakeholder consultation is warranted on the design of the regulatory sandbox arrangements, including the appropriate eligibility criteria and

whether they should be extended to the regulatory framework for gas. The AEMC plans to provide further advice on possible law and rule changes to give effect to new AER powers and AEMC rule change process, together with details on the design of the sandbox arrangements under the 2019 *Electricity network economic regulatory framework review*.

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1 INTRODUCTION

This paper provides the Commission's interim advice on how to best facilitate appropriate proof-of-concept trials and the need for formal regulatory sandbox arrangements in the national electricity market (NEM).

This interim advice was prepared as part of the 2019 *Electricity network economic regulatory framework review*, however it considers the need for regulatory sandbox arrangements in other parts of the NEM regulatory framework, for example, relating to wholesale electricity markets and consumer protections. The COAG Energy Council SCO requested the AEMC provide this interim advice by February 2019. It was delivered on 28 February and published on 7 March 2019.

1.1 Background

The emergence of innovative technologies and business models in the NEM can bring significant benefits to consumers. This was highlighted in the *Independent Review into the Future Security of the National Electricity Market (Finkel review)*, which noted that innovative technologies can help reduce the costs of providing secure and reliable electricity supply and also contribute to reducing emissions.¹ As such, it is important that the regulatory framework and processes support potentially beneficial emerging technologies and business models.

The Finkel review recommended updating the proof-of-concept testing framework, to facilitate innovation in the NEM. The review noted that new concepts that are inconsistent with the National Electricity Rules (NER) need to be proven to the point where a rule change can be made prior to being used in the NEM. Recommendation 2.8 was that the Commission review and update the regulatory framework to facilitate proof-of-concept testing of innovative approaches and technologies. The review also suggested investigation of mechanisms adopted by other jurisdictions, such as those adopted by the Office of Gas and Electricity Markets (OFGEM) in the United Kingdom (UK). Recommendation 2.8 was accepted by Energy Ministers.

In February 2018, the Energy Market Transformation Project Team (EMTPT)² agreed that a working group made up of officials from the Commonwealth and other interested jurisdictions would undertake further research on the case for introducing a regulatory sandbox.

In our 2018 *Electricity network economic regulatory framework review*, the Commission outlined the regulatory sandbox arrangement that has been adopted by OFGEM in the UK. The review highlighted that where innovation may benefit consumers, there may be merit in applying a regulatory sandbox arrangement so that any changes to the regulatory framework can be fast tracked. However, the Commission noted that trials and other forms of regulatory innovation can be facilitated under the current NEM regulatory framework through the AER

1 Dr Alan Finkel et al., *Independent Review into the Future Security of the National Electricity Market*, June 2017, p. 66.

2 The EMTPT was established by the COAG Energy Council in December 2015 to consider issues related to the ongoing energy sector transition driven by changing technologies, increasing consumer engagement, new energy products and services. It is made of officials from each jurisdiction.

exercising its enforcement discretion and the use of its power to issue “no action letters”. The Commission noted it was interested in stakeholder views on the need for more formal arrangements for regulatory sandboxes and would consider this further in the 2019 *Electricity network economic regulatory framework review*.

On 24 October 2018, the Commission received a request from the Senior Committee of Officials (SCO) of the COAG Energy Council to further investigate a formal approach for facilitating proof-of-concept testing in the NEM. The request was informed by research carried out by the working group of Commonwealth and state officials and reported in the EMTPT paper attached to the SCO request.

1.2 Request from the Senior Committee of Officials

The Senior Committee of Officials (SCO) believes that there is merit in looking at a more formal and systematic approach to supporting experimentation within the regulatory framework where there are potential benefits to energy consumers. In its request to the Commission, SCO noted that it would be useful to be able to perform in-market trials of wholesale demand response to inform the current rule change process. SCO considers that a regulatory sandbox could also help to test a range of technologies and business models to inform the Distributed Energy Integration Program (DEIP). The DEIP is a collaboration of government agencies, market authorities, industry and consumer associations aimed at maximising the value of customers’ distributed energy resources for all energy users.³

The Commission has been requested to provide interim advice by February 2019 as part of the 2019 *Electricity network economic regulatory framework review* on how to best facilitate co-ordination of proof-of-concept trials and the need for formal regulatory sandbox arrangements to support innovative projects offering benefits to customers while managing any risks. In providing this advice the Commission is requested to:

- consider whether existing or proposed projects could be used as a sandbox trial
- engage closely with Australian Energy Regulator (AER), Australian Energy Market Operator (AEMO), Energy Consumers Australia (ECA) and Australian Renewable Energy Agency (ARENA)
- consider the need for regulatory sandbox arrangements in other parts of the national electricity framework e.g. relating to consumer protections.

A research paper from the EMTPT on regulatory sandbox arrangements was attached to the request from SCO (EMTPT paper). The Commission has drawn on the work carried out and reported in the EMTPT paper in this interim advice. The SCO request and the EMTPT paper can be accessed from the AEMC website.

1.3 Consultation process and next steps

A consultation paper was published on 20 December 2018. Submissions were received from 28 stakeholders, which are summarised in Chapters 3 and 4 and are available on our website.

³ ARENA 2018, viewed 6 December 2018, <https://arena.gov.au/where-we-invest/distributed-energy-integration-program/>.

As set out in the summary and section 2.5, the Commission has proposed two work-streams to further develop a regulatory sandbox initiative:

1. Immediate steps to develop a clearer process to provide guidance and feedback to trial proponents collaboratively between the AEMC, AER, AEMO, ARENA and ECA.
2. The AEMC to develop further advice on possible law and rule changes to give effect to proposed new AER powers and AEMC rule change process, together with details on the design of the sandbox arrangements under the 2019 *Electricity network economic regulatory framework review*. This would involve consultation with the AER, AEMO, ARENA and ECA as well as stakeholders more broadly.

1.4 The regulatory sandbox approach

The concept of a regulatory sandbox was first adopted by the Financial Conduct Authority (FCA) in the United Kingdom in June 2016.⁴ The concept has since been adopted by regulators across several different industries and jurisdictions seeking to facilitate innovation.

Broadly, a formal regulatory sandbox is a framework within which participants can trial innovative business models, products and services in the market under relaxed regulatory requirements on a time-limited basis and with appropriate safeguards in place. There are a variety of other regulatory tools that can be used to facilitate proof-of-concept trials, such as provision of information, exemptions and waivers, a number of which are already in place in the NEM.

Regulatory sandbox arrangements aim to support innovation in markets in several ways including through:

- improved access to finance for projects through increased regulatory certainty⁵
- enabling testing and fine-tuning in a controlled testing environment⁶
- allowing regulators to work with innovators to build appropriate consumer protection safeguards into new products and services⁷
- helping regulators identify the need for reform to the existing regulatory framework.⁸

These benefits have been reported by regulators in different industries and jurisdictions, including by the FCA for the UK financial sector. Some relevant examples include the adoption of regulatory sandbox approach by OFGEM in the UK, the Energy Market Authority (EMA) in Singapore and by the Australian Securities and Investment Commission (ASIC) for the Australian finance sector. OFGEM launched its regulatory sandbox in February 2017 and has since run two rounds of the regulatory sandbox process. It has compiled and published its insights from running these processes which are summarised in Box 1.

4 Ernst & Young, *As FinTech evolves, can financial services innovation be compliant?*, 2017, p. 13.

5 Financial Control Authority, *Regulatory sandbox lessons learned report, October 2017*, pp. 5-6.

6 Financial Control Authority, *Regulatory sandbox lessons learned report, October 2017*, pp. 5-6.

7 Financial Control Authority, *Regulatory sandbox lessons learned report, October 2017*, pp. 5-6.

8 OFGEM, *Insights from running the regulatory sandbox, October 2018*, p. 1.

BOX 1: OFGEM'S INSIGHTS FROM RUNNING THE REGULATORY SANDBOX

- Innovators commonly needed advice, and not a sandbox. It is not always clear to innovators what they can and can't do. OFGEM originally imagined that the sandbox requests would be made by innovators who were looking to run a trial but were being blocked by a specific rule that they were aware of. OFGEM found that in practice many innovators needed help navigating the regulatory framework and that the projects went ahead without needing a sandbox.
- If an innovative proposition isn't possible, it is usually because of a complex mix of requirements including industry norms, systems, charging arrangements, codes and licenses.
- Innovators are focused on launching businesses, not trials. OFGEM's regulatory sandbox is designed to facilitate time limited trials, however it found that most innovators wanted to launch enduring businesses and are less focused on trials. For OFGEM, it is important that the relaxation of the rules is temporary as it differentiates a sandbox from a permanent rule change.
- Start-ups want to signal low regulatory risk to investors. OFGEM found that a significant number of sandbox applicants were looking for OFGEM to review their business idea and confirm that it faced no regulatory issues.
- Innovators have to operate within existing structures. Innovative projects and trials may not be able to get exemptions from some requirements. OFGEM found that it may need to be more precise about what relief a sandbox is capable of providing.
- Innovation is happening across the energy sector in the UK. OFGEM found that start-ups working on the local electricity supply theme featured strongly in the sand box applications.

Source: OFGEM, Insights from running the regulatory sandbox, October 2018, pp. 1-4.

1.5 Structure of interim advice

This document builds on the Commission's analysis in the consultation paper which reported on the examples of adoption of regulatory sandbox arrangements in other jurisdictions, the current arrangements in the NEM and sought stakeholder views on the need for regulatory sandbox arrangements and high level design requirements for such arrangements. This document outlines:

- the Commission's interim advice including proposed approach
- stakeholder feedback on the need for regulatory sandbox arrangements
- stakeholder feedback on design of regulatory sandbox arrangements.

2 PROPOSED APPROACH

This chapter sets out the Commission's interim advice and proposed approach to developing a regulatory sandbox initiative.

2.1 Overview

The Commission's interim advice to SCO is that proof-of-concept trials can be better facilitated and coordinated through a regulatory sandbox initiative. This initiative should make use of a variety of existing and new regulatory tools that are appropriate to the proposed trial. Formal regulatory sandbox arrangements that allow for regulatory relief would be one of these tools.

Proof-of-concept trials have the potential to contribute to consumers' interests where they encourage innovation to meet consumers' needs whilst maintaining appropriate consumer safeguards. Whilst some proof-of-concept trials have been conducted under current regulatory arrangements, a regulatory sandbox initiative can better facilitate appropriate trials by creating a clearer process and avoiding unnecessary delays and costs. It can also help market bodies better coordinate prioritisation of trials, provision of input to their design and dissemination of any lessons learnt.

The Commission considers that the regulatory sandbox initiative could provide for a regulatory framework that is better equipped to respond to the rapid change in the electricity sector and deliver customer benefits through innovation. It could help reduce the barriers to the introduction of more efficient approaches to the delivery of electricity services. To access regulatory sandbox arrangements, proof-of-concept trials would need to be time-limited and appropriate consumer safeguards must remain in place. In most cases, the complexity of the regulatory arrangements and the costs associated with compliance are likely to reflect the harm they are trying to prevent. Trials under regulatory sandbox arrangements would need to meet eligibility criteria and some trials may not be able to proceed.

The Commission proposes that a number of new tools should be developed for the regulatory sandbox initiative, which could be applied depending on the nature of the proposed trial (see Section 2.3):

- A clear process to access feedback and guidance on regulatory issues
- A new AER regulatory waiver or exemptions power
- A new AEMC expedited rule change process for proof-of-concept trials.

The Commission also proposes that the regulatory sandbox initiative would facilitate access to existing regulatory tools that may be applicable to proof-of-concept trials such as existing waiver and exemption powers. For example, The AER has the ability to provide a range of exemptions and waivers, including under its network service provider registration exemption

guideline⁹, retail exempt selling guideline¹⁰ and ring-fencing guideline¹¹, and is able to provide individual exemptions if existing guidelines do not cover the situation (see Chapter 3 of the consultation paper published on 20 December 2018 for further discussion).

The nature of trials can vary widely and different regulatory tools could be needed to facilitate different types of trials. Trials can vary in terms of what they are testing, who they impact and how they are affected by the rules involved. Some trials may not be prohibited by the rules, and if there is perception that they are prohibited, this can be addressed through guidance. Other trials might need regulatory relief or temporary rule changes. Stakeholder submissions highlighted a wide variety of trials that could potentially be facilitated by regulatory sandbox arrangements, some which could seek an exemption from a specific rule and others that could seek significant alterations to rules for a trial (see Section 3.3). A one size fits all approach for regulatory flexibility that only provides regulatory relief is not likely to be sufficient for all trials.

The Commission has proposed two work-streams to further develop a regulatory sandbox initiative (see Section 2.4):

1. Immediate steps to develop a clearer process to provide guidance and feedback to trial proponents collaboratively between the AEMC, AER, AEMO, ARENA and ECA.
2. The AEMC to develop further advice on possible law and rule changes to give effect to proposed new AER powers and AEMC rule change process, together with details on the design of the sandbox arrangements under the 2019 *Electricity network economic regulatory framework review*. This would involve consultation with the AER, AEMO, ARENA and ECA as well as stakeholders more broadly.

2.2 Design principles for a regulatory sandbox initiative

A clearer objective for a regulatory sandbox initiative and a number of principles for its design have emerged from consultation with stakeholders and the Commission's analysis. The objective and design principles, and how they would be applied, would be developed further in consultation with stakeholders in the next phase of this process.

Overall objective

It is important that the overall objective is aligned with the broader objectives of the national energy framework and the NEO. That is the objective should be to encourage innovation which has the potential to contribute to the long-term interests of consumers, rather than simply to facilitate an increased number of trials. The stakeholder submissions also reflected the need for the regulatory sandbox arrangements to have a broader innovation focus.¹²

⁹ AER, *Electricity network service provider registration exemption guideline*, version 6, March 2018. For further details, please see: <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/network-service-provider-registration-exemption-guideline-march-2018>.

¹⁰ AER, *AER (retail) exempt selling guideline*, version 5, March 2018. For further details, please see: <https://www.aer.gov.au/retail-markets/retail-guidelines-reviews/retail-exempt-selling-guideline-march-2018>.

¹¹ AER, *Ring-fencing guideline - electricity distribution*, version 2, October 2017. For further information, please see: <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/electricity-ring-fencing-guideline-october-2017>.

¹² Submissions to the consultation paper: Ausgrid, p. 6, TasNetworks, p. 5, Essential Energy, p. 6, Energy Startup p. 4.

Support for innovation that encourages beneficial new technologies and business models can lower the cost of supplying reliable and secure electricity to consumers. Encouraging innovation can improve dynamic efficiency, which is an important element of the NEO.¹³

¹⁴Support for proof-of-concept trials that are likely to contribute to consumers' interests are an important element of supporting innovation.

The regulatory sandbox initiative should focus on relaxing, modifying or waiving inappropriate energy market regulatory barriers to proof-of-concept trials to encourage innovation. It should not focus on roles better performed by government funded small business incubators and similar programs. As such it would not be an avenue for providing funding or business model advice, but may refer to other entities that offer these services (e.g. ARENA). Nor should it replace the need for trial proponents to seek their own independent technical and legal advice.

No consumer harm

With the consumer at the centre of a regulatory sandbox initiative an important design principle is that consumers are expected to benefit from individual trials, or at least are not made worse off than they would be without the trial. This would involve trial proponents demonstrating consumer benefits (or no harm) and being required to maintain important consumer protections. Explicit informed consent from consumers would be required where they interact directly with the trial.

There may be some limited circumstances where some consumer protections could be reduced on a trial basis with the consent of consumers (e.g. changes to information provided on bills, or reduced ability to change retailers during a trial).

The longer-term objectives of the trial should also be considered. Technology or business models that would be likely to harm consumers' interest if implemented more widely should not have access to a regulatory sandbox for a trial.

Support competitive outcomes

Competition in retail and wholesale electricity markets is an important driver of innovation that is in the interests of consumers. Proof-of-concept trials should have the potential to encourage competition including through new entrants and new product offerings.

Time limited

The application of regulatory relief or a temporary rule change for a trial under a regulatory sandbox should have a definite time limit, with the possibility of further time limited extensions where appropriate. The AEMC's existing rule change processes are available for non-temporary changes to the rules.

Exit strategy

¹³ Ausgrid submission to the consultation paper, p. 6

¹⁴ Havyatt, D, 2017, *The components of efficiency*, Network, Issue 62, ACCC.

Proof-of-concept trials should have a plan in place in the event the trial is unsuccessful, such as an ability to revert to pre-existing arrangements. Projects that involve significant infrastructure that is difficult to remove may not be appropriate for trials.

Knowledge sharing

Facilitated proof-of-concept trials should be required to share the knowledge gained to inform regulators and the market, however this obligation should have appropriate limits to avoid trial proponents losing their intellectual property.

Prioritisation

To the extent that only a limited number of proof-of-concept trials can be facilitated these should be prioritised by the relevant market bodies. Two factors that should be considered in this prioritisation are alignment with the COAG Energy Council Strategic Energy Plan and which trials have the greatest potential to contribute to consumers' interests.

2.3

Elements of a regulatory toolkit to facilitate proof-of-concept trials

As outlined above the sandbox initiative is best thought of as a toolkit of various regulatory options that can be applied to the specific circumstances of proposed proof-of-concept trials.

The Commission proposes that one of the market bodies would take on the role of a first point of contact for proponents of proof-of-concept trials interested in accessing guidance and sandbox arrangements. The AER is most likely the appropriate body to take on this role, however this would be the subject of consultation in the second phase of this process.

The tools in the sandbox initiative could include:

- Existing regulatory tools such as the AER's ring-fencing waivers and retailer exemptions (see Chapter 3 of the consultation paper published on 20 December 2018)
- Coordinated feedback and guidance on regulatory issues
- A new AER regulatory waiver or exemptions power
- A new AEMC expedited rule change process for proof-of-concept trials.

These tools are discussed in more detail in the sections below. The table below sets out some examples where these tools may be used.

Table 2.1: How regulatory tools could be applied

REGULATORY TOOL	EXAMPLES OF HOW IT MAY BE USED
AER existing waiver and exemption powers	Limited cases that fall into existing powers, e.g. trials involving DNSP ring-fencing waivers
General advice on energy regulations	Proponents at an early stage of developing a trial who need guidance on elements of the energy framework that may be relevant.
Detailed advice on energy regulations	Proponents with a specific question on the

REGULATORY TOOL	EXAMPLES OF HOW IT MAY BE USED
	application of the law or rules where it is appropriate for the AER to provide guidance.
A new AER waiver or exemptions power	Proponents with a specific regulatory barrier that they are seeking an exemption from for a time and size limited trial. E.g. trial of a new technology that doesn't meet current requirements.
A new AEMC expedited trial rule making process	Trials that involve significant deviation from existing regulatory arrangements and/or require alterations to rules to apply on a temporary basis e.g. in-market trials of demand response, trials proposed by market bodies.

2.3.1 Coordinated regulatory guidance and feedback

The feedback from the majority of stakeholders was that the provision of advice was an important element of a facilitating innovation and proof-of-concept trials (see Chapter 3). Stakeholders generally considered that navigating the regulatory arrangements and the complexity of the regulatory framework can be challenging for newer and smaller participants, and that providing further guidance and advice on regulations would help address these challenges. Similarly, OFGEM's experience with their regulatory sandbox suggests that innovators commonly need advice rather than a formal regulatory sandbox, and that the provision of guidance in navigating the regulatory framework was valuable to innovators as well as regulators who gathered information on how the markets were evolving.

The AER and AEMO noted the significant guidance that is already provided, however other stakeholder submissions raised concerns about processes being unclear and difficult to navigate.

As for the sandbox initiative generally, the Commission propose that one of the market bodies would take on the role of a first point of contact for proponents seeking advice. The market body would then refer to other bodies if the issue was outside their expertise and possibly coordinate advice where appropriate. The AER is most likely the appropriate body to take on this role, however this would be a subject of consultation in the second phase of this process.

A number of submissions called for a "one stop shop" for guidance and feedback to enable a straightforward process for trial proponents however the Commission sees a number of challenges with this approach. In the national energy framework different market bodies have different responsibilities and it is not appropriate for one body to provide advice on behalf of another. Having a "first stop shop" instead allows proponents to get some guidance

on which body they need to talk to about different energy regulation issues and can help to facilitate proof of concept trials. There are a number of other non-energy related laws and regulations that a proponent looking to launch an innovative business or trial may need to follow, such as state based energy regulation, financial regulation and occupational health and safety regulation. It would not be possible or appropriate for an energy regulatory body to provide complete guidance on all these aspects.

Submissions in favour of a regulatory sandbox highlighted the importance of fast, frank feedback. The market body responsible should be able to provide this over the phone or email.

All guidance and feedback would be subject to a disclaimer that it is not legal advice. It is not appropriate for market bodies that are responsible for developing and applying the rules to provide binding legal advice on their interpretation. Innovators would likely need to obtain their own legal advice separately.

The Commission agrees with the AER's submission that binding rulings involve extra risk for regulators and are not likely to be appropriate.

If more detailed guidance is appropriate, then there would be a number of options available to market bodies. For example, the AER could consider using a letter of comfort or letter of no action. These have limitations as highlighted by the AER and other stakeholders (see chapter 3) but may be appropriate in some circumstances. Another option is for the AER to publish a guidance document on how to consider certain aspects of the law or rules. For example, the AER recently published the *Life support registration guide* to assist retailers and distributors understand their responsibilities to customers relying on life support equipment under new rules that commenced from 1 February 2019.¹⁵

The Commission considers that the development of a clearer process for guidance and feedback could be progressed collaboratively by the AEMC, AER, AEMO, ARENA and ECA before the implementation of the other new tools. This work could commence in the first half of 2019.

2.3.2 **New AER waiver or exemptions power**

It was highlighted by the stakeholders that proof-of-concept trials were being limited and prevented from going ahead due to concerns regarding the lack of flexibility in the regulatory framework and the absence of a defined and well understood regulatory process for conducting trials.

Where proposed trials require regulatory relief from specific provisions of a rule (or rules), the AER's existing exemption/waiver powers under the NEL and NER could be expanded. As proposed by the AER, this could involve introducing a broad power for the AER to grant specific exemptions and waivers to facilitate the conduct of proof of concept trials subject to a "sandbox guideline" the AER develops in consultation with stakeholders.

¹⁵ Available at: <https://www.aer.gov.au/communication/aer-publishes-the-life-support-registration-guide>

This would involve changes to the NEL and NER and may require expansion of AER's existing functions and powers.

This new power should be limited to providing time limited exemptions and waivers with respect to existing regulatory requirements, and not altering the existing rules.

Further consideration is required to determine what elements should be enshrined in the NEL and what should be the subject of the guidelines. Key provisions, such as eligibility criteria (such as demonstrating benefit to consumers), requirement to maintain consumer safeguards, immunity of trial proponents from third party legal action and protection of other market participants adversely affected by trials, would potentially be best placed in the NEL. The Commission will need to consider further whether protection of trial proponents is best achieved through a waiver or exemption, or by a broader-based immunity. As suggested by the AER, the guidelines could cover other elements such as eligibility requirements, application processes, assessment criteria, consumer safeguards and reporting requirements.

2.3.3

New AEMC expedited rule process for conduct of trials

If a proof-of-concept trial requires more substantial changes to market arrangements, such as new rules or the alteration of existing rules, the Commission is of the view that this is likely better progressed through the rule making process than through an exemption or waiver. A rule making process offers a more appropriate regulatory process in these circumstances, including stakeholder consultation.

Some in-market trials would not be able go ahead relying solely on regulatory relief and would require temporary alternate regulatory arrangements as noted by some stakeholder submissions. It was highlighted that for some trials to proceed amendments needed to be made to the rules authorising the necessary arrangements for trial. For example, the AEMO highlighted that for its aggregated demand response trial to proceed, new concepts such as "the calculation of the baseline energy" and a "demand response interval" needed to be incorporated in the rules. Whilst each proposed trial needs to be assessed on its merits, without a rule process for trials, a subset of trials that may be likely to contribute to the interests of consumers may not be able to go ahead.

The current rule making process is likely too lengthy or represents too high a barrier for the purposes of a limited trial rule. For example, a rule may only proceed on an expedited basis if the AEMC considers the rule to be urgent or not have a significant effect on the market. This criteria may not be appropriate for a trial that may affect market design or require a more substantial alteration to the rules.

As such the AEMC proposes the development of a separate AEMC rule-making power in the NEL, which would be similar to the current expedited rule making process. It is envisaged that these rule changes would be time limited, to facilitate the conduct of the trial. If the trial was successful, a permanent rule change could be initiated.

This process would develop an individual regulatory sandbox for a trial that would be a set of rules operating on a time limited basis and possibly limited to a certain geography or certain market participants or customers. The regulatory sandbox would describe exactly how the

existing regulatory framework would be altered to facilitate the trial. This could involve derogations or exemptions from existing rules and/or new rules to apply to the trial.

Some prescription would be needed in the NEL with respect to the rule making process. For example, it should not be open to any person to request a “trial expedited rule” prior to it being appropriately assessed. This could mean only AEMO or AER are able to lodge a trial rule request, after they have evaluated a trial proposal (developed by a market body or a commercial entity). Alternatively, a trial expedited rule request may require support from a market body based on a completed evaluation. This evaluation would be based on certain criteria to be satisfied (e.g. demonstrating consumer benefit).

The NEO would likely need to be applied differently by the AEMC for a trial expedited rule. While innovation in general can contribute significantly to the long-term interest of consumers, whether each individual trial will be in consumers’ long-term interests may not be known until after the results of a trial are known. A law change would be required to apply a modified NEO to trial expedited temporary rules.

2.4 Next steps

The Commission proposes two work streams: development of improved guidance and feedback and development of possible law and rule changes.

Coordinated regulatory guidance and feedback

The provision of guidance and feedback to innovative businesses and proponents of trials is likely within the existing functions and powers of the market bodies. As proposed by ECA, the Commission believes the AEMC, AER, AEMO, ARENA and ECA can work together to develop a clearer process for this provision of information. This should include stakeholder consultation. This could proceed in advance of the development of law and rule changes that may be needed for other tools in the regulatory sandbox initiative. If agreed by the other bodies, this work can commence in the first half of 2019.

Possible law and rule changes to facilitate trials

A new AER regulatory waiver power and new AEMC trial rule making power would require further assessment and development.

The Commission proposes to work with the AER, AEMO, ARENA and ECA and consult with other stakeholders in the first half of 2019 and develop recommendations for a package of possible law and rule changes to the COAG Energy Council in the second half of 2019. This work would be conducted under the 2019 *Electricity networks economic regulatory framework review* where possible.

This process could also consider any necessary law and rule changes to facilitate the provision of more detailed regulatory advice by market bodies if identified as appropriate in the first work stream.

Issues for consultation would include the appropriate eligibility criteria and whether they should be extended to the regulatory framework for gas.

The consultation to date has primarily focused on changes to the NEL and NER. The second phase would also consider and consult on expansion to the NERL and National Energy Retail Rules (NERR).

3 STAKEHOLDER FEEDBACK – THE NEED FOR A REGULATORY SANDBOX

Based on consultation with stakeholders and analysis of sandbox arrangements in Australia and overseas, the Commission’s interim advice is that current arrangements for facilitating proof-of-concept trials can be improved and there is a role for regulatory sandbox arrangements in the NEM. While stakeholders views varied on the need for regulatory relief and regulatory guidance for trials, the majority of stakeholders supported a sandbox initiative.

This chapter provides an overview of stakeholders’ response on the need for regulatory sandbox arrangements, covering:

- current barriers to proof-of-concept trials
- problems with using no-action letters to facilitate trials
- examples of trials that have faced barriers
- the potential benefits of regulatory sandbox arrangements
- the ability of regulatory sandbox arrangements to support broader regulatory reform
- the need for greater regulatory guidance.

3.1 Current barriers to proof-of-concept trials

Most stakeholders responding to the consultation paper considered that there were barriers to conducting trials under the current regulatory framework due to concerns such as a lack of flexibility in the regulatory framework, the absence of a defined and well understood regulatory process for conducting trials and the complexity of the framework.

AEMO stated that conducting meaningful in-market trials within the current rules was often not possible even with the support of no-action letters from the AER.¹⁶ Conducting in-market trials was said to be desirable where a new service or business model is expected to provide value to the market but the actual costs and benefits are not fully understood.¹⁷

Essential Energy considered that limitations in flexibility of the current regulatory framework add costs and time to current trials including the costs of acquiring legal advice, time taken to engage with regulators and changes to design to of the trial to comply with the regulatory framework.¹⁸ Essential Energy noted that trials were often designed to fit the current regulatory framework rather than fully testing new approaches, and finding ways to test new approaches while complying with the current regulations adds extra cost. Essential Energy provided the example its standalone power systems (SAPS) prototype, where to make the trial compliant with the regulatory framework, a manual cut-over switch allowing the customer to select between grid and SAPS supplied power had to be added to the trial set-up.¹⁹

¹⁶ AEMO submission to the consultation paper, p. 3.

¹⁷ AEMO submission to the consultation paper, p. 3.

¹⁸ Essential Energy submission to the consultation paper, p. 4.

Similarly, Energy Startup²⁰ raised concerns regarding the flexibility in the current framework noting that the unintended consequences of existing rules can pose barriers to trials. It suggested that implementation of the rules can often be based on assumptions for technology that become invalid as technology progresses. The cost of innovation can therefore include costs of meeting irrelevant regulation, or the cost of attaining change to regulations. It argued that regulatory sandbox arrangements could allow for innovators to meet the purpose of the rules while exempting them from constraints associated with implementation of those rules.²¹

Some stakeholders raised concerns that the lack of a clear regulatory process for undertaking trials was posing a barrier to carrying out proof-of-concept trials. Essential Energy noted that under the current regulatory arrangements there was no “defined and well-understood framework” that can be used to gain regulatory approval for a trial from the AER. Mondo considered regulatory barriers often prevented innovative ideas from proceeding to trials, where trials conducted can lack regulatory and market mechanisms needed to create a commercially compelling demonstration.²²

The complexity of the regulatory framework was also considered to be a barrier to trials by some stakeholders. Simply Energy considered that the current regulatory framework lacked flexibility and was too complex to effectively promote innovation²³ NEV Power stated that the NEM is a complex set of rules, acronyms and regulatory bodies which make it hard for organisations like theirs to be innovative and advance on their goals.²⁴ Ausgrid noted that energy market regulation is a complex mix of national and state laws and regulations, which would undoubtedly be daunting for new entrepreneurs to navigate.²⁵

Some stakeholders including TasNetworks and Energy Networks Australia considered the regulatory framework was limiting the scope of the trials that were going ahead. TasNetworks noted that in its experience the current rules and processes can rule out trials from taking place entirely.²⁶ It highlighted that regulatory concerns surrounding trials can impose costs in both time, money or complexity that are prohibitive. Similarly, Essential Energy said that proof-of-concept trials were being inhibited by current market regulations or processes.²⁷

Wattwatchers raised concerns regarding the power imbalance in relationship between new and innovative business and large incumbents during trials. It considered that the current regulatory arrangements advantaged large incumbents with deep experience in the system. It highlighted that new and innovative players in practice could only conduct proof-of-concept trials by working with the incumbents, which is inherently one sided due to the imbalance in

19 Essential Energy submission to the consultation paper, p.4.

20 This submission was provided under the title “Energy Startup”. The organisation seeks to develop energy products and technology.

21 Energy Startup submission to the consultation paper, pp. 1-2.

22 Mondo submission to the consultation paper, p. 1.

23 Simply energy submission to the consultation paper, p. 2.

24 NEV power Submission to the consultation paper, p.2.

25 Ausgrid submission to the consultation paper, p. 2.

26 TasNetworks submission to the consultation paper, p. 1.

27 Essential Energy submission to the consultation paper, p. 3.

size and the pace of change in the traditional industry. Wattwatchers considered that this leads to “death by pilot” for new and innovative players.

PIAC shared its view that although policy and regulatory framework for energy is complex and can impose burden on business, it is important to consider whether the burdens imposed were proportional to the harms they intended to prevent.²⁸

Some stakeholders did not consider that the current regulatory arrangements were preventing trials from taking place. Origin shared that in its experience it hadn’t seen much evidence of NEM regulatory arrangements preventing trials from happening.²⁹ Snowy Hydro considered that the current regulatory framework provides “the sufficient flexibility required for the different institutions to support proof-of-concept trials. Snowy Hydro noted that there were a range of government grant programs available to assist companies with funding trials.³⁰ Additionally, the DNSP’s had access to incentive mechanisms for innovation under the Demand Management Innovation Allowance (DMIA) and Demand Management Incentive Scheme (DMIS).

According to the Australian Energy Council (AEC), retailers did not see the need for relaxation of rules under a regulatory sandbox and that “much can be done within the existing framework”.³¹ Specifically, AEC highlighted that the Retailers have worked with “dozens of innovators and new businesses and haven’t to date identified any specific need for such a capability”.³²

3.2 Use of AER’s enforcement discretion

The AER has a range of compliance tools and discretion in deciding whether to take enforcement action, including its power to issue “no action letters”. No action letters are generally developed and issued by the AER on a case-by-case basis in relation to a specific rule or rules and provide a statement that the AER will not take action in the circumstances listed in the letter. The stakeholders generally considered that no action letters did not offer sufficient protections against third party risk, sufficient transparency, and were not the appropriate mechanism for facilitating proof-of-concept trials.

The AER did not consider its use of enforcement discretion in the form of issuing no action letters to be suitable for supporting trials.³³ The AER suggested that no action letters are generally intended to serve a different purpose of restoring compliance with the rules, and are used under different circumstances. The AER noted that no action letters “may be appropriate where a registered participant, a regulated business, or AEMO has breached or will likely breach specific provisions in the rules, and where solutions other than an exercise of statutory enforcement powers (such as infringement notices or litigation) provide the best pathway to return to compliance.”³⁴ In the AER’s view no action letters do not alter or waive

28 PIAC submission to the consultation paper, p. 1.

29 Origin submission to the consultation paper, p. 1.

30 Snowy Hydro submission to the consultation paper, p. 1.

31 AEC submission to the consultation paper, p. 2.

32 AEC submission to the consultation paper, p. 2.

33 AER submission to the consultation paper, p. 3.

the application of the relevant rules, and do not prevent a third party action for breach of the rules. In contrast, the focus of the sandbox was not on enforcing or restoring compliance with the rules but deciding that a specific rule will not apply to a limited trial.

Furthermore, it was implied by the AER that facilitating trials through the use of no-action letter could create an expectation that a “no action” decision can be negotiated with the AER on an ad-hoc basis as a way to avoid compliance or to obtain derogation from the rules.³⁵ The AER considered that this could compromise AER’s compliance and enforcement activities. It was suggested by the AER that establishing a new mechanism that provides for trials and conduct outside of the current law or rules means that the AER doesn’t have to use its enforcement and compliance discretion on allowing trials that will never be compliant with the rules. The AER expected a regulatory sandbox to mitigate the risks that the AER and trial proponents faced under no action letters.

PIAC expressed similar views to the AER, noting that no-action letters were not a sufficient replacement for a regulatory sandbox as they are intended to serve different purpose. PIAC highlighted that no-action letters were a compliance based tool, while a well-designed regulatory sandbox could provide for change to the regulatory status quo.³⁶ In PIAC’s view, relying on no-action letters from the AER to facilitate proof-of-concept trials may leave substantial innovative potential unrealised.

Several stakeholders raised concerns that the use of AER’s enforcement discretion did not provide sufficient protection for trial proponents against risk. According to AEMO, no-action letters do not help manage risk where a trial has the potential to disadvantage or reduce benefits to parties because no action letter cannot prevent other parties (specially those outside of the trial) from commencing a dispute in relation to payment matters or initiating legal proceedings on grounds that are not addressed in the no-action letters.³⁷ Essential Energy said that the approach of using no-action letters from the AER is “ad hoc, lacks flexibility and is opaque”, and creates regulatory risk for market participants resulting in a reduced use of trials.³⁸ Additionally, Essential Energy noted that there was a lack of certainty under the current process involving AER’s enforcement discretion as no-action letters are case specific requiring a large degree of interaction and coordination with the AER, exemptions provided by the AER are rigid and tend to only cover things not likely to change. Energy Consumers Australia (ECA) highlighted that no action letters are of little benefit where the AER is the entity being bound by the rules.³⁹ This was the case for the New Reg trial and VPP demonstrations where the revenue determination process and charges that can be made for small scale generators are prescribed by the rules and bound AER’s decisions.⁴⁰ Similarly, ARENA highlighted that no-action letters may not be a sufficient mechanism to facilitate

34 AER submission to the consultation paper, pp. 3-4.

35 AER submission to the consultation paper, p. 3.

36 PIAC submission to the consultation paper, p. 6.

37 AEMO submission to the consultation paper, p. 5.

38 Essential Energy submission to the consultation paper, p. 3.

39 Energy Consumers Australia submission to the consultation paper, p. 4.

40 Energy Consumers Australia submission to the consultation paper, p. 5.

complex proof-of-concept trials as they transfer too much risk to the AER and fails to protect trial proponents and market bodies from third party litigation.⁴¹

Some stakeholders highlighted concerns regarding lack of transparency surrounding no-action letters. Ausgrid considered the use of AER's enforcement discretion under no-action letters and waivers to not be the best option as these options are not as transparent or predictable and are more open to regulatory discretion.⁴² Mondo noted that regulatory sandbox arrangements have the advantage over no-action letters of promoting stakeholder confidence as the nature of the temporary exemption and its rationale will be clear and transparent.⁴³

Energy Queensland believed that no-action letters were not the right instrument to provide relaxation of the rules because they would not adequately deal with issues of intellectual property and commercial confidentiality.

3.3 Trials facing barriers

Stakeholders provided examples of a range of trials that they considered as being limited due to the current regulatory framework. They also provided a range of possible use cases of regulatory sandbox arrangements.

ARENA highlighted that it had worked with trials that have not proceeded due to regulatory barriers and where no-action letters were deemed insufficient to address legal risks such as third party litigation.⁴⁴

Energy Networks Australia considered that trialling of standalone power systems arrangements was a "highly prospective area" for the use of regulatory sandbox.

AEMO considered that trials that demonstrate new forms of customer participation, such as aggregated demand response faced barriers under the current arrangements and would require the protection of a regulatory sandbox framework or specific rule changes to proceed.⁴⁵ In collaboration with other stakeholders, AEMO has been trying to develop and facilitate an in-market trial of participation of a demand response aggregator in the energy and Frequency control ancillary services (FCAS) markets. Implementing the draft trial arrangements would require a departure from the current operation and administration of the NEM as contemplated in the NER, including by establishing a second participant in the spot market with a financial relationship at an individual connection point, and creating a different basis for settlement of that additional participant. AEMO considered that the trial's departures from "existing market rules and regulatory constructs" present barriers to the implementation of the trial that cannot be overcome under the existing regulatory framework. AEMO considered that the trial could only proceed if amendments are made to the NER authorising the necessary arrangement for the trial, or if the trial is facilitated through a regulatory

41 ARENA submission to the consultation paper, p. 1.

42 Ausgrid submission to the consultation paper, p. 5.

43 Mondo submission to the consultation paper, p. 1.

44 ARENA submission to the consultation paper, p. 4.

45 AEMO submission to the consultation paper, p. 4.

sandbox framework. In AEMO's view, the most significant barriers to in-market trials such as the demand response aggregator trial described are that:

- trials that seek to alter the financial outcomes in the wholesale market, to the detriment of a party that is entitled to the outcomes pursuant to the NER are susceptible to challenge unless all parties impacted formally agree to alternative arrangements.
- There is no clear authority for AEMO to be able to conduct an in-market trial that is inconsistent with the current NEM market arrangements.

On a similar note LO3 Energy considered that its Local Energy Market (LEM) platform that involves peer-to-peer trading and aggregation of sources to provide demand response, energy and ancillary services could not be fully tested under the current rules. It considered that limitations were imposed by restrictions on multiple trading relationships (MTR) at a connection point and the wholesale market settlement processes.⁴⁶

The Australian National University (ANU) considered the possible areas of innovation that could benefit from regulatory sandbox arrangement to include new customer representation models, novel tariffs and tiered regulations. According to the ANU, the sandbox arrangements could also provide for investigating tiered approaches to regulations such as those involving different regulatory environments for electricity retailers of different sizes.⁴⁷

Energy Consumers Australia provided the example of the New Reg process trial, where parties are attempting to trial an alternative regulatory approach to incorporating consumer preferences, to explore that the regulatory barriers can limit the scope of trials being conducted. ECA highlighted that the New Reg trial being conducted under the current rules can limit specific options under the trial such as how much evidentiary weight the AER can place on the negotiated outcomes under the trial. On this point, AusNet services noted that a future New Reg trial could benefit from a regulatory sandbox by enabling the AER to give greater weight to agreed outcomes incorporated in a Revenue Proposal.⁴⁸

ECA also highlighted that the virtual power plant demonstration project trial involving AEMO may not extend to trialling distribution charging arrangements due to regulatory limitations.

Drawing on its experience, TasNetworks highlighted that its proposed embedded network and microgrid project at Nubeena has not proceeded due to regulatory barriers.⁴⁹ One of the goals of the projects is to allow residents within the network to trade energy amongst each other and incorporating new network pricing arrangement. TasNetworks also shared its experience with the emPOWERING You Trial aimed at understanding how and when customers use electricity and how they respond to new network pricing arrangements, and the CONSORT Bruny Island battery trial, where the scope of these trials had to be reduced due to regulatory concerns.⁵⁰

46 LO3 Energy submission to the consultation paper, p. 2.

47 ANU submission to the consultation paper, p. 3.

48 AusNet Services submission to the consultation paper, p. 2.

49 TasNetworks submission to the consultation paper, p. 3.

50 TasNetworks submission to the consultation paper, p. 3.

Mondo listed the type of proof-of-concept trials it considered were currently being limited by the regulatory framework which included community micro-grids, community peer-to-peer trading, developing and testing of market place models, the use of batteries to provide market services and development of hydrogen products.⁵¹ Mondo considered that there were restrictions imposed by different parts of the regulatory framework, including through network pricing, market settlement arrangements and the registration and compliance requirements for aggregators.

In relation to limitations for peer-to-peer trading imposed by network pricing arrangements, Mondo and Ausnet Services highlighted that although the rules allow for a trial tariff to be included in a network's annual pricing proposal, the timing requirements for implementing trial tariffs are restrictive, as the AER needs to be notified by August and the tariffs can only apply from the following January. They considered that although many of the proposed peer-to-peer trials were unlikely to generate substantial benefit for the network in terms of reduced network expenditure, a trial located in a constrained part of the network could yield significant learning about customer behaviour in response to network tariffs.⁵²

According to Evoenergy regulatory sandbox arrangements could facilitate trials that could lead to better integration of distributed energy resources (DER) with the distribution networks. Evoenergy is trialling distribution transformer monitoring and voltage regulation devices to alleviate the impacts of increasing solar PV penetration on low voltage distribution networks. One of the devices required is designed to be implemented behind the customer's meter and is subject to AER's Ring-fencing guidelines. Evoenergy considered that a regulatory sandbox would allow Evoenergy to trial such devices in a controlled environment without the "effort and complexity of meeting ring-fencing obligations". Secondly, Evoenergy considered that it was difficult for networks to obtain funding for projects seeking to address the technical challenges associated with high penetration of DER, such as reverse power flow and voltage rise. It added that regulators were unlikely to approve investments needed to address the arising technical challenges unless economic benefits could be demonstrated. To date no distribution network was said to have sufficiently demonstrated such benefits to the satisfaction of the regulator.⁵³ Evoenergy highlighted that distribution markets which enable the realisation of DER benefits to distribution networks currently do not exist. It considered that given the innovative nature of such project, a regulatory sandbox would "set out the regulatory pathway that would facilitate distribution networks to invest in enabling higher penetration of solar PV and other DER".⁵⁴

Energy Queensland noted that there was a "gap in emerging energy storage in the sub 5 MW, grid-connected category" due to the limitations in the current market participant categories in the rules. The community scale battery storage located within the local networks was said to provide the potential for battery storage to provide network support in efficiently managing local constraints and enabling higher DER penetration. According to

51 Mondo submission to the consultation paper, p. 2.

52 Ausnet Services submission to the consultation paper, p. 2.

53 Evoenergy submission to the consultation paper, p. 4.

54 Evoenergy submission to the consultation paper, p. 4.

Energy Queensland such projects cannot test the full spectrum of potential business models without a rule change or through enforcement discretion from the AER.⁵⁵

Some stakeholders considered that there should be limitations on which trials can be carried out under the regulatory sandbox arrangement. Snowy Hydro considered that demand response mechanism and other wholesale demand response suggestions should not be trialled through the sandbox as it would not provide any evidence on its response under a realistic operating condition in the NEM or understanding of the costs involved.⁵⁶ AGL raised concerns regarding the sandbox arrangements being used to bypass established principles in the regulatory framework. AGL highlighted that network business should not seek to utilise regulatory sandbox arrangements to overcome “ring-fencing” or the principles of contestability of energy services, and should not be used by businesses to gain a foothold in the competitive markets.⁵⁷ Furthermore, AGL considered that great care needs to be taken in relaxing regulatory restrictions on network businesses that would impact the viability of emerging competitive markets.⁵⁸

Although the stakeholders provided examples of trials that they consider are being limited due to the regulatory framework, the Commission notes that some stakeholder concerns relate to avoiding the complexity and costs of compliance associated with the current regulatory framework. In most cases, the complexity of the regulatory arrangements and the costs associated with compliance are likely to reflect the harm they are trying to prevent. Conducting trials under regulatory sandbox arrangements is unlikely to be free of all regulatory burden and may not allow for some trial arrangements to proceed.

3.4 Potential benefits of regulatory sandbox arrangements

Most stakeholders considered that regulatory sandbox arrangements which included regulatory relief would serve to better facilitate proof-of-concept trials in the NEM. Some stakeholders outlined that regulatory sandbox arrangements would provide greater certainty and confidence for parties involved in the trials, and thereby promote the use of proof-of-concept trials. Formal regulatory sandbox arrangements were also considered by most stakeholders to generally promote innovation in the NEM.

The AER supported the development of a “well-defined” regulatory sandbox mechanism to provide transparent arrangements for the AER to facilitate proof-of-concept trials in collaboration with other stakeholders.⁵⁹ According to the AER effectively managed innovation in the energy market can benefit consumers by providing them more choice and access to greater competition. The sandbox is expected to support a more flexible regulatory framework that is better equipped to respond to the rapid change in the sector, and ensure customer benefits of innovation are realised. A sandbox mechanism was also considered to help reduce barriers to more efficient supply and delivery of electricity, including by new

55 EQ submission to the consultation paper, p. 3.

56 Snowy Hydro submission to the consultation paper, p. 2.

57 AGL submission to the consultation paper, p. 1.

58 AGL submission to the consultation paper, p. 2.

59 AER submission to the consultation paper, p. 1.

market entrants. AER further added that formal regulatory sandbox arrangements would improve the scope of possible trials and mechanisms for implementing them.⁶⁰

Essential Energy considered that more formal regulatory arrangements under which parameters of trials were set and agreed to from the outset would provide more certainty and confidence for market participants to conduct trials and incentivise use of trials.⁶¹ Similarly, Ausgrid noted that formal regulatory sandbox arrangements would provide predictability and certainty for trial proponents.⁶² Energy Networks Australia considered that regulatory sandbox arrangements could provide certainty to trial proponents regarding how the details of the trials will be interpreted under the rules, the likely consequences for negative customer outcomes under the trial and process for extending the trial.

Energy Consumers Australia considered that adoption of regulatory sandbox arrangements could make it easier for additional proof-of-concept trials to take place and help achieve better consumer outcomes.

A number of stakeholders considered that regulatory sandbox arrangements would provide for innovation in the energy industry and assist in market transition.⁶³ AEMO considered the regulatory sandbox framework to be a necessary and important tool to manage the energy transition in the long term interest of consumers.⁶⁴

Energy Consumers Australia highlighted that the creation of a regulatory sandbox mechanism that is supported by a formal guidance and advice function would provide for a shift in cultural change and reinforce the value of innovation in the energy system more broadly.⁶⁵ On a similar note, Essential Energy highlighted that currently market participants are undertaking trials that are not visible to the market and having a more stable and well-understood regulatory arrangements for trials may help parties share information and avoid duplication.⁶⁶

Origin suggested that there may be merit in further exploring the concept of regulatory sandbox arrangements.⁶⁷ Similarly, AGL considered that investigating the use of regulatory sandbox arrangements and facilitating proof-of-concept trials will be useful in unlocking innovation across the energy supply chain.⁶⁸

In contrast with other stakeholders, Snowy Hydro stated that there was no evidence that formal regulatory sandbox arrangements would make it easier for additional proof-of-concept trials to take place to achieve better customer outcomes.⁶⁹

60 AER submission to the consultation paper, p. 8.

61 Essential Energy submission to the consultation paper, p. 6.

62 Ausgrid submission to the consultation paper, p. 6.

63 Submissions to the consultation paper: Simply Energy, p. 2; Mondo p. 1; Evoenergy, p. 1; ANU p. 1.

64 AEMO submission to the consultation paper, p. 4.

65 Energy Consumers Australia submission to the consultation paper, p. 4.

66 Essential Energy submission to the consultation paper, p. 3.

67 Origin submission to the consultation paper, p. 1.

68 AGL submission to the consultation paper, p. 1.

69 Snowy Hydro submission to the consultation paper, p. 1.

3.5 Supporting regulatory reform

Generally, many stakeholders considered that regulatory sandbox arrangements would support reform to the regulatory framework. Stakeholders considered that regulatory sandbox arrangements could support reform through facilitating trials that can inform changes to the regulatory framework, better informing the market bodies of challenges faced by innovators and by facilitating trials of major regulatory changes on a limited scale.

AEMO saw the potential for regulatory sandbox arrangements to support regulatory reform, highlighting that carrying out in-market trials can provide essential data on market outcomes and can aid the design of permanent regulatory arrangements.⁷⁰ Similarly, Energy Networks Australia (ENA) considered that sand-boxed trials could provide for regulatory framework changes that are informed by live market conditions and learnings, rather than changes being assessed on abstract and theoretical basis.⁷¹

The AER considered that trials could help market bodies address “over the horizon reform issues”, and create a better informed and more responsive process of regulatory change. The AER noted that a sandbox mechanism would help facilitate regulatory experiments in collaboration with other stakeholders.⁷²

Energy Consumers Australia highlighted that a regulatory sandbox arrangement would provide the regulator with a “coalface” view of the issues impacting innovators and allow the regulator to work with innovators on a range of matters in a constructive and beneficial way that can bring a greater understanding of new models into the energy system.

According to ARENA, important foreseeable reform initiatives such as the wholesale demand response mechanism and the creation of distribution-level markets for energy and related services may involve step changes in NEM market design, which could be tested through trials. The realisation of benefits from such reforms may depend on in-market trials that inform the business case for change, and regulatory design options, over the coming years. ARENA argued that in the absence of regulatory exemption framework, decisions for reform would be more reliant to desktop analysis without benefiting from real-world trial outcomes.⁷³ On a similar note, Energy Queensland suggested that regulatory sandboxes arrangements could assist in carrying out regulatory reform, specifically by outlining possible implementation pathways and outcomes, identifying opportunities for reform and enabling sharing of experience and outcomes.⁷⁴

Meanwhile, Snowy Hydro considered that a regulatory sandbox should not become a means to change regulation on a permanent basis. Specifically, it was highlighted that permanent changes to the rules should be made by the Commission under the established rule change process involving full consultations leading up to industry wide changes which are available to

70 AEMO submission to the consultation paper, p. 3.

71 Energy Networks Australia submission to the consultation paper, p. 4.

72 AER submission to the consultation paper, p. 1.

73 ARENA submission to the consultation paper, p. 4.

74 EQ submission to the consultation paper, p. 8.

all parties. Snowy Hydro considered that trials can be misleading when they are conducted in a small environment and under unrealistic operating conditions.⁷⁵

3.6 The need for regulatory guidance

Most stakeholders generally considered that there was a need for further regulatory guidance to be provided to assist newer and smaller businesses in navigating the regulatory framework. Stakeholders were generally of the view that established businesses had the resources and experience to be able to successfully navigate the regulatory framework. Market bodies highlighted that they already provided informal advice and guidance to a range of parties including new and innovating businesses.

Energy Consumers Australia strongly supported provision of access to guidance as part of regulatory sandbox arrangements.⁷⁶ It suggested that there are a number of current barriers that can be overcome with a guidance service analogous to OFGEM's "fast, frank feedback service". ECA further commented that the need for guidance is often raised in their discussions with innovators.

Simply Energy considered it was important that parties trying to introduce innovative technologies were supported in understanding the relevant regulatory requirements. It was suggested that the guidance should help innovators design their products and services in line with the relevant regulatory obligations. Simply Energy highlighted that guidance could be particularly useful for smaller operators who may not have the legal resources to fully evaluate and understand the complex energy regulatory regime.⁷⁷

TasNetworks highlighted that in its experience, the larger new entrants such as new transmission connection applicants tend to be better resourced and have a deep understanding of the regulatory obligations, and these parties require lesser guidance. Meanwhile, PIAC considered that quick and accessible guidance from a market body would be useful for new entrants to the energy market, including those with a business model that involves an innovative energy-only service, or where the provision of those energy services is a secondary consequence of a non-energy related service being offered.⁷⁸

Mondo also considered that access to detailed guidance for new market entrants was warranted particularly in the areas of registration, licensing, metering, settlement processes and prudential obligations.⁷⁹ Similarly, Energy Queensland believed there may be lack of guidance for innovative new entrants on navigating the regulatory framework. The current processes and arrangements result in a number of potential touchpoints for new entrants.

75 Snowy Hydro submission to the consultation paper, p. 1.

76 Energy Consumers Australia submission to the consultation paper, p. 4.

77 Simply Energy submission to the consultation paper, p. 2.

78 PIAC submission to the consultation paper, p. 2.

79 Mondo submission to the consultation paper, p. 2.

Craig Burton (private individual) shared that in his experience in navigating the regulatory framework it was difficult to know which organisations to approach and acquiring legal advice from the market seems to involve large costs.⁸⁰ Similarly, Promis network considered that for new entrants it is difficult to find the right starting point for guidance, as they might not know what to ask. Energy Startup also considered that guidance on navigating the regulatory framework would be of value.

The AER highlighted that it currently provided “fast, frank feedback” to registered participants, new entrants, NSPs and other parties interacting with different parts of the regulatory framework including new and innovating players. As an example, the AER highlighted that it often engaged informally with DNSPs on trials of new technologies and service delivery models in the context of ring-fencing. However, the AER considered that the complexity of the regulatory framework can pose barriers to new entrants seeking to trial innovative technologies and services. As such, the AER was open to a more explicitly defined advice and feedback component of the sandbox (whether provided by the AER or another agency). AEMO highlighted that one of the functions of its centre for innovation was outreach, similar to that performed by OFGEM’s innovation framework. AEMO considered that it’s experience though running the innovation centre aligned with OFGEM’s, in that “innovators commonly need advice” and that “innovators are focused on launching businesses, not trials”.⁸¹ AEMO anticipates that if a regulatory sandbox involving regulatory relief was pursued, third parties would require significant support in scoping and developing sandbox trial proposals.⁸²

AGL did not consider there to be the need for a specific guidance service for innovating businesses, instead it considered that some guidance generally should be provided by relevant market bodies as part of their everyday business and information that is regularly sought by existing and prospective market participants should be developed and made publicly available to avoid similar regular enquiries by new entrants.⁸³

80 Craig Burton submission to the consultation paper, p. 6.

81 AEMO submission to the consultation paper, p. 5.

82 AEMO submission to the consultation paper, p. 6.

83 AGL submission to the consultation paper, p. 4.

4 STAKEHOLDER FEEDBACK – THE DESIGN OF REGULATORY SANDBOX ARRANGEMENTS

Stakeholders that supported a sandbox initiative were asked for preliminary views on design. This chapter provides an overview of stakeholders' views on the high level design of regulatory relief and guidance components of regulatory sandbox arrangements.

4.1 Objective of regulatory sandbox arrangements

Stakeholders expressed varied views regarding the objective of a regulatory sandbox, but generally considered the need for the sandbox framework to have a broader objective. Several stakeholders considered that the objective the regulatory sandbox arrangements should be promoting innovation in the NEM generally. According to some stakeholders the sandbox arrangements should be able to facilitate trials of different nature, to test not only technology but to also allow for testing of different business models and market arrangements.

Essential Energy highlighted that regulatory sandbox arrangements adopted by OFGEM and ASIC were suited to cover only a subset of proof-of-concept trials, mainly those focused on testing innovative technologies. It considered that further consideration is needed to design sandbox arrangements that may be suitable to test new business model and changes to market design or the regulatory framework. It suggested trials for business models and market design tend to be different in nature to technology trials. Testing of new business models were said to be focused on how established technologies can be delivered to customers in a manner that maximises benefits and may require testing a number of different supply models, involving a range of stakeholders and comparing the results. Essential Energy also noted that testing of changes to market design or to the broader regulatory framework is likely to be led by market bodies rather than industry.⁸⁴

Similarly, AEMO considered that the objective of the sandbox "to facilitate further proof-of-concept trials in the NEM" risks being limited to trials that are technical in nature. AEMO highlighted that trials of new forms of market participation are less focused on proving the feasibility of a concept but are primarily focused on collecting data on consumer behaviour and market outcomes.⁸⁵

Several stakeholders considered that the objective of the regulatory sandbox arrangements should be promoting innovation in the NEM generally. Ausgrid considered that the overall objective of the sandbox arrangement was to encourage innovation, thereby improving dynamic efficiency and delivering better outcomes to customers.⁸⁶ TasNetworks suggested that objective of the sandbox arrangements should be to explore how innovation and efficiency in the NEM could be enhanced without undue risk to customers, infrastructure, market and NEM participants.⁸⁷ Essential Energy considered that the objective of regulatory

⁸⁴ Essential Energy submission to the consultation paper, p. 2.

⁸⁵ AEMO submission to the consultation paper, p. 7.

⁸⁶ Ausgrid submission to the consultation paper, p. 6.

sandbox arrangements should be to encourage innovation in the NEM. It raised concern that having an objective that is focussed on increasing the number of trials being conducted may lead to a framework that does not provide value for money for consumers. Energy Startup noted that the objective of the formal regulatory arrangements should be to support innovations and organisations that would not otherwise perform the trial.⁸⁸

ARENA suggested that a best practice approach to implementing a regulatory sandbox would recognise the complex regulatory, information, cultural and commercial barriers to developing and marketing new services in the energy sector and address these in an integrated way.⁸⁹

Mondo outlined that the objective of the sandbox should be to facilitate proof-of-concept trials where the concept being tested has potential to result in substantial customer benefit.⁹⁰ Mondo considered that the scope of application of the regulatory sandbox should be very broad.

PIAC considered the primary objective of the sandbox to be guiding reform, suggesting that the regulatory sandbox should serve to help inform the need for, and direction of reforms to the existing regulatory and policy framework, to help ensure that they remain for purpose. According to PIAC proof-of-concept trials are a means to an end and not the end in and of itself.⁹¹

Stakeholders also provided comments regarding the design of regulatory relief and design of the arrangements for providing of guidance. The following sections provide an overview of this feedback.

4.2 Design of regulatory relief

Stakeholders provided high level feedback on the approach to design of the regulatory relief as part of the regulatory sandbox arrangements. Generally, stakeholders expressed the need for the regulatory sandbox arrangements that are flexible and adaptable, provide for a testing environment that is limited in impact and time and don't impose undue administrative burden on the trial proponents.

The AER favoured the establishment of broad power for the AER to waive parts of the rules to support proof-of-concept trials. The AER suggested that detailed requirements for the mechanism can be consulted on, developed and provided through a sandbox guideline.⁹² The AER considered that specifying details of the sandbox arrangements through the guideline had two main benefits including:⁹³

- allowing the mechanism to be readily updated when required, through a transparent and consultative process with the market bodies and other stakeholders

87 TasNetworks submission to the consultation paper, p. 5.

88 Energy Start-up submission to the consultation paper, p. 4

89 ARENA submission to the consultation paper, p. 1.

90 Mondo submission to the consultation paper, p. 2.

91 PIAC submission to the consultation paper, p. 7.

92 AER submission to the consultation paper, p. 2.

93 AER submission to the consultation paper, p. 3.

- providing AER the ability to respond to the lessons learnt along the way in a timely and iterative manner, and to the changes taking place in a dynamic market.

ARENA highlighted that one of the challenges in facilitating innovation is that it is not always obvious when and where new innovations will arise, and where a regulatory exemption may be beneficial. ARENA suggested a “more flexible framework for granting regulatory exemptions, based on sound governance principles, which provides more substantial scope for regulatory discretion while ensuring consumer and business interests are suitably protected.” ARENA also noted that in some circumstances, a broader regulatory exemption, could increase the scope of trials in the market and accelerate reforms. Transgrid also called for a regulatory sandbox process that was “adaptable and agile”. According to Transgrid, the regulatory sandbox arrangement should take into account the governance structure of the NEM and bring together relevant stakeholders.⁹⁴

Essential Energy provided an overview of the key high level features that they considered were required in regulatory sandbox arrangements. These included:

- advice at an early stage to identify regulatory issues associated with the trial
- clear and documented criteria for eligibility for sandbox
- a well understood process for use of the provisions
- clear responsibility for decision making regarding the sandbox.

AEMO considered that as well as providing scope for exemptions from requirements in the rules, the sandbox framework would also need to have scope to accommodate new concepts.⁹⁵ AEMO highlighted that the establishment and authorisation of new concepts in the rules may be required for some trials to proceed. As an example, AEMO noted that for its demand response aggregate trial to proceed a number of new things would need to be created for which there is currently no provision in the rules including, the calculation of baseline energy, settlement of aggregated demand response in relation to the baseline and a demand response interval. According to AEMO, the arrangements for sandboxes should establish a framework (or “building code”) for regulatory sandboxes, with each trial undertaken in its own regulatory sandbox (i.e., containing the related specific exemptions and parameters). AEMO suggested that tailored sandboxes should be limited in both time and scale to manage the risks associated when new approaches are being tested “in-market” and to ensure the trials’ framework is not used to make enduring change to the regulatory framework. The need to assess regulatory sandbox proposals against a publicly available criteria and the reasons for the decisions to published was also expressed.

Some stakeholders highlighted the need to ensure that the regulatory sandbox arrangements do not impose undue regulatory burden on trial participants. Mondo suggested that in considering the design of the regulatory sandbox, it was important to balance the need for a robust and transparent assessment process with the need to support prompt decision-making and flexibility to accommodate the nature of innovative projects. Mondo stressed that the framework should not add undue administrative complexity. Similarly, Simply Energy

⁹⁴ Transgrid submission to the consultation paper, p. 2.

⁹⁵ AEMO submission to the consultation paper, p. 7.

considered that the sandbox testing environment should be developed in a manner that does not impose undue administrative burden on relevant participants.

The ANU considered that sandbox arrangements should be designed for simplicity, speed and be accessible to all innovators. It said that inclusivity and diversity of idea from outside of the industry (for example from universities, community groups and non-profits) should be accommodated by the arrangements.⁹⁶

Stakeholders stressed the requirements for the sandbox arrangement to provide protections to consumers and other impacted parties. The AER highlighted that where a trial impacts on customers, those customers should in principle, retain the same rights as they have under the NEL/NER and NERL/NERR. If the trials seeks to limits customer's rights the AER would need to consider whether there is a need for the affected customer to provide explicit informed consent. The AER noted that it was important to demonstrate how the customers will have their rights returned to them at the conclusion of the trial. According the AER, trial proponents under a regulatory sandbox should demonstrate that their trial will not have a negative impact on the competitiveness of retail and wholesale markets, or on other market participants.⁹⁷ Similarly, Ausgrid noted that it was very important that consumers are adequately protected for the duration of any trial, particularly if regulations involving consumer protections are relaxed. As some safeguards, Ausgrid recommended that participation in a trial must be voluntary, consumers must not be worse off by participating in the trial and at the end of the trial consumers must be able to fall back to their pre-existing consumer protections.

There was also general support amongst the stakeholders that trial proponents making use of the sandbox arrangements should have to share their learnings from the trial with the wider industry. Essential Energy noted that it seemed reasonable that "market participants that avail of the regulatory sandbox arrangements should be subject to some requirements to share the learnings from the trial with industry".⁹⁸ Essential Energy noted that these requirements should not be overly onerous or require sharing of commercially sensitive information. Ausgrid also considered that trial proponents using sandbox arrangements should be required to provide a publicly available report at the end of their trial that outlines the success or failures of the trial and key findings.⁹⁹

AGL highlighted that it was supportive of "developing a process to allow regulatory sandbox arrangements", but only specific types of trials that meet defined criteria. It highlighted that sandboxes should be used to provide innovative concepts that are "inhibited by regulatory failures or barriers in transforming markets".¹⁰⁰ Furthermore, AGL considered that great care needs to be taken in relaxing regulatory restrictions on network businesses that would impact the viability of emerging competitive markets.¹⁰¹

96 ANU submission to the consultation paper, p. 2.

97 AER submission to the consultation paper, p. 6.

98 Essential Energy submission to the consultation paper, p. 7.

99 Ausgrid submission to the consultation paper, p. 8.

100 AGL submission to the consultation paper, p. 1.

101 AGL submission to the consultation paper, p. 2.

Some stakeholders provided feedback on what they should be the high level criteria for accessing the regulatory sandbox arrangements. Stakeholder views varied on proposed criteria for access reported varied between the stakeholders, although there were some commonly reported criteria such as the need for the trial to be aligned with the NEO or the objective of regulatory sandboxes, the existence of regulatory barriers preventing the trial from occurring and a pathway to transition the project out of the trial environment.¹⁰²

4.3 Design of guidance

Stakeholders that considered there to be a need to provide guidance on navigating the energy regulatory framework generally suggested provision of tailored advice to new entrants and small players that is coordinated by one organisation with broad expertise under a shop front with the input of other organisations.

Several stakeholders considered that advice should be provided under a “shop-front” as a single point of contact for new entrants. ARENA suggested “an innovation shop front service, provided under an appropriate institutional framework, could offer ‘fast and frank’ regulatory advice to new market entrants”.¹⁰³ Energy Queensland also suggested advice to new entrants should be provided under a single stop shop which has broad experience and expertise across all segments of the market and disciplines. It was also suggested that the body providing advice should also have expertise in jurisdictional regulations.¹⁰⁴ Essential Energy highlighted that guidance should be provided by one body in consultation with all relevant parties, to avoid the need for business to engage with multiples parties.¹⁰⁵ According to Essential Energy the advice should focus on elements of the proposed trial that are inconsistent with the current regulatory framework. The AER highlighted that it is open to providing informal feedback as part of the sandbox and under a more explicitly defined advice and feedback as part of the sandbox.¹⁰⁶

Stakeholders generally did not consider there to be a need for the AER to provide binding advice. The AER did not support providing binding or formal advice because it would compromise their ability to provide fast, frank feedback due to additional risk the AER would take on and would not be the best way to reduce project risk.¹⁰⁷ Ausgrid noted that it did not see the need for binding advice from market bodies and considered that such an approach would increase costs and likely lead to more risk averse approach by market bodies.¹⁰⁸ PIAC noted that there would be a stronger case for the market bodies providing fast advice than providing binding advice.¹⁰⁹ Simply Energy also highlighted that advice in relation to

102 Submission to the consultation paper: Ausgrid p.7.; Transgrid, p.2.; TasNetworks, p. 5.

103 ARENA submission to the consultation paper, p. 3.

104 Energy Queensland submission to the consultation paper, p. 3.

105 Essential Energy submission to the consultation paper, p. 5.

106 AER submission to the consultation paper, p. 6.

107 AER submission to the consultation paper, p. 5.

108 Ausgrid submission to the consultation paper, p. 5.

109 PIAC submission to the consultation paper, p. 5.

innovative service models and products does not need to be binding.¹¹⁰ In contrast, some stakeholders noted there may be a role for binding advice to be applied.¹¹¹

Stakeholders provided varied feedback regarding how the potential guidance service should be funded. Essential Energy considered that funding arrangements and body providing the advice may need to depend on the type of trial.¹¹² Some stakeholders considered that costs of providing service could be recovered from the parties using the service with TasNetworks noting that the costs of providing guidance could be recovered on a user pays basis. Mondo also considered that provision of guidance to new entrants should be funded by the party seeking and benefiting from the guidance. AGL stated that provision of guidance was unlikely to be a significant overhead for organisations the size and expertise of the market bodies. PIAC noted that although there would definitely be need for binding advice for any innovative new offering, it wasn't convinced that this would need to be provided by the market bodies. It may be more appropriate for innovating businesses to procure this advice themselves, potentially with the support of external funding if needed.¹¹³

110 Simply Energy submission to the consultation paper, p. 2.

111 Submissions to the consultation paper: TasNetworks, p. 4.; Craig Burton, p. 7.

112 Essential Energy submission to the consultation paper, p. 5.

113 PIAC submission to the consultation paper, p. 5.

ABBREVIATIONS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Commission	See AEMC
MCE	Ministerial Council on Energy
NEL	National Electricity Law
NEO	National electricity objective
NERL	National Energy Retail Law
NERO	National energy retail objective
NGL	National Gas Law
NGO	National gas objective