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Australian Energy Market Commission

**CONSULTATION PAPER**

**REVIEW OF THE REGULATORY  
FRAMEWORK FOR METERING  
SERVICES**

3 DECEMBER 2020

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**REVIEW**

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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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## CONTENTS

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Reasons for the review	1
1.2	The approach of the review	5
1.3	How the consultation paper is structured	10
<b>2</b>	<b>Overview of the metering framework</b>	<b>11</b>
2.1	Types of meters	11
2.2	Roles and responsibilities	12
2.3	Installing or Replacing electricity meters	12
2.4	Planned interruptions	13
2.5	Other components of the framework	15
2.6	Recent metering rule changes	16
2.7	Jurisdictional regulations	17
<b>3</b>	<b>The current state of metering</b>	<b>18</b>
3.1	Smart meter penetration	18
3.2	Reason for new meter installation	21
3.3	Consumer experience	24
3.4	An increase in services and benefits were expected	30
<b>4</b>	<b>The future state of metering</b>	<b>32</b>
4.1	Current smart meters have the ability to provide more data and services	32
4.2	Stakeholders consider smart meters could enable additional services	35
4.3	Smart meter penetration is key to providing more services	38
<b>5</b>	<b>Are changes required to the regulatory framework?</b>	<b>40</b>
5.1	Smart meters remains a key enabler of electricity sector transformation	40
5.2	Issues and barriers to the realisation of smart meter benefits	41
	<b>Abbreviations</b>	<b>48</b>
	<b>TABLES</b>	
Table 1.1:	Key dates	10
Table 5.1:	Summary of individual installation costs of splitting a shared fuse	45
	<b>FIGURES</b>	
Figure 3.1:	Total number of smart meters by jurisdiction	18
Figure 3.2:	Smart meters as a percentage of all small customer meters in each jurisdiction	19
Figure 3.3:	Percentage of smart meters per distribution network area	20
Figure 3.4:	Reason for smart meter uptake, 2019-20	22
Figure 3.5:	Reason for smart meter installations by jurisdiction, 2019-2020	23
Figure 3.6:	Digital meter exchange complaints in New South Wales, 2019-20	25
Figure 3.7:	Residential metering complaints, 2019/2020	26
Figure 3.8:	Small business metering complaints, 2019-20	27
Figure 3.9:	Metering related complaints received by EWOSA, 2017-2020	28
Figure 4.1:	Tariffs type in the NEM as at Quarter 3 2019/2020	34
Figure 5.1:	Intellihub's chart indicating the number of meters greater than 25 years old	43
Figure 5.2:	Reasons a meter was unable to be installed for AGL from February to June 2019	44
Figure 5.3:	Reasons a meter was unable to be installed for Vector	45

# 1 INTRODUCTION

On 26 November 2015, the Australian Energy Market Commission (AEMC or Commission) made a rule to introduce a competitive framework for metering services. The *Expanding competition in metering and related services* rule (*Competition in metering*)<sup>1</sup> sought to facilitate a market-led deployment of smart meters. The rule commenced operation on 1 December 2017.

In the final determination, the Commission recommended a review of certain aspects of the rule be carried out three years after the rule's commencement. Further, since the commencement of the *Competition in metering* rule, there have been a number of implementation issues including in relation to customer experience.

The Commission has, therefore, self-initiated this review to determine whether the reforms introduced under the *Competition in metering* rule change have met expectations and whether changes are required to improve the efficiency and effectiveness of the regulatory framework for metering services. The review will also determine whether the regulatory framework for metering services supports the implementation of other electricity sector reforms where metering services will play a role.

Through the review, the Commission will develop recommendations relating to the regulatory framework for metering services which may include changes to the National Electricity Rules (NER), National Energy Retail Rules (NERR) and any other relevant regulatory instruments.

This chapter provides an introduction to the review and details:

- reasons for the review
- the Commission's approach to the review
- how the remainder of the consultation paper is structured.

## 1.1 Reasons for the review

### 1.1.1

#### **In 2015 a new regulatory framework for metering and related services was introduced**

In 2015, the *Competition in metering* rule made extensive amendments to the metering-related provisions of the NER and NERR, including transferring the metering related roles and responsibilities from the distribution network service provider (DNSP) to the newly created role of the metering coordinator (MC). This rule commenced in December 2017.

In making the *Competition in metering* rule, the Commission considered that metering services can be more effectively provided by entities that are operating competitively with each other. The rule ended the effective monopoly of DNSPs over the provision of metering services for small customers by allowing any party that meets certain registration requirements to provide those metering services. DNSPs continue to be responsible for maintaining existing accumulation (type 6) and interval (type 5) meters, however, any new or

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<sup>1</sup> Available at <https://www.aemc.gov.au/rule-changes/expanding-competition-in-metering-and-related-serv>.

replacement meters must be an advanced or smart (type 4) meter, with the retailer responsible for arranging the metering services for its small customers by engaging an MC.<sup>2</sup>

The metering reforms were expected to lead to an extensive smart meter uptake and provide consumers with:

- **Better information:** smart meters can provide more granular information and price signals to better enable consumers to make decisions about how and when to use electricity, and allow them to change their behaviour to lower costs. Consumers may be able to use a third party service such as an app or in-home display to see real-time information about their electricity usage.
- **Cost reflective pricing:** smart meters can support different tariff structures. In addition to a flat tariff structure, consumers may be able to choose from time-of-use or demand pricing structures or various forms of rebates to enable the consumers to reduce their bill by moving electricity usage to off-peak times. This could also help distributors defer expensive augmentations to the network that are otherwise necessary to accommodate peak demand.
- **New products and services:** the rule supported the development of a market for new and innovative products and services. One example is an in-house display that uses the live consumption data from the smart meter to provide consumers with detailed analytics about the appliance usage and associated costs. Another example is a load management product that enables a third party to control certain parts of the consumer's load (such as an air conditioner or pool pump) in return for an incentive.
- **Better retail service:** retailers were expected to offer more innovative pricing, product and service options for consumers. Smart meters have the capacity to enable retailers to disconnect and reconnect their consumers quickly, for example when they move house. The ability to remotely read meters was expected to also facilitate quicker consumer transfers,<sup>3</sup> as well as giving consumers more possibilities to reduce bill shock, for example through monthly or weekly billing arrangements if agreed to by the consumer.
- **Better network service:** the information provided by smart meters could give DNSPs a better picture of holistic electricity consumption patterns and enable them to make more efficient network investment decisions. Additionally, demand management and other products mentioned above, if available, may be able to help reduce peak demand and defer or avoid expensive network augmentations. This would benefit all consumers through lower network costs.

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2 Clause 7.8.3(a) of the NER. Retailers are not required to comply with this obligation in limited circumstances set out in clause 7.8.4 of the NER (where there is no existing telecommunications network or a small customer refuses the installation or continued use of an installed type 4 meter) in which case the retailer may only install a type 4A meter. A type 4A meter is a type 4 meter without activated remote communications

3 The AEMC's *Reducing customers' switching times* rule change in December 2019 provided flexibility to AEMO and industry to implement changes to enable customer to switch their energy retailer as quickly as within two days. Available at <https://www.aemc.gov.au/rule-changes/reducing-customers-switching-times-retail>.

### **1.1.2 The Commission committed to reviewing some components three years from rule commencement**

In the *Competition in metering* final determination, the Commission recommended that the ability of small customers to appoint their own MC be reviewed three years after the commencement of the new Chapter 7 of the NER under the final rule.<sup>4</sup> In addition, the Commission recommended that whether some form of access regulation to metering services and meter data is required should also be reviewed at that time.<sup>5</sup>

### **1.1.3 Additional rules were made to amend the new framework, and more are expected**

Three additional rule changes have been made to amend the framework for metering in the NER and NERR since the commencement of the *Competition in metering* rule. The Commission is also aware of a number of other rules that industry participants and market bodies would propose to amend, either to reduce barriers to smart meter installation, or to provide clarification to roles and responsibilities under the rules. The three additional rule changes are discussed in more detail in section 2. 6.

### **1.1.4 There is also significant market reform occurring where smart meters could play an enabling role**

#### **Energy Security Board - Post 2025 Market Design Initiatives**

The former Council of Australian Government Energy Council (now National Federation Reform Council) tasked the Energy Security Board (ESB) with developing advice on a long-term energy market framework to support reliability that could apply from the mid-2020's. The ESB is currently consulting on their Post-2025 Market Design Initiatives (MDIs). The Post 2025 Project is taking a holistic look at what needs to change to ensure the national electricity market (NEM) can meet the needs of consumers in a future of diverse sources of non-dispatchable generation, demand response, storage, and distributed energy participation.

The Post-2025 MDIs combined are now considering almost all aspects of how electricity is generated and dispatched, how consumers can access the services they want and how investment can occur in the most efficient way to avoid unnecessary costs.

Together, across these initiatives, the ESB and the other market bodies including the Commission, Australian Energy Regulator (AER) and Australian Energy Market Operator (AEMO) are working together with industry and consumer representatives to capture the opportunities and tackle the four challenges that need to be addressed:

- Addressing the needs of consumers whose relationship with the market is changing.
- Managing volatility and uncertainty in the market that has accompanied substantial increases in large and small scale variable renewables.

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<sup>4</sup> AEMC, *Expanding competition in metering and related services*, Final determination, 26 November 2015, p. vi.

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

- Need for capital replacement - as generation plants become commercially unviable and retire over the next 10-15 years and beyond, the replacement of the energy and essential services they provide is required.
- Recognising demand flexibility and integrating distributed energy resources (DER) - the value of demand response and load shaping must be recognised and DER needs to be effectively integrated into the system and the market.

The focus on the future-grid is particularly relevant to metering as it relies on greater access to data and demand side participation through smart meters. Two-sided markets is particularly relevant as it investigates changing the way consumers can engage with the market to a two-way transaction. Other initiatives such as Essential System Services and DER integration are likely to benefit greatly from the information provided through smart meters and the flexibility they can provide.

#### **Energy Security Board - Data strategy**

The ESB recently released their second consultation paper on the ESB Data Strategy. While the Strategy more broadly is focused on information sharing between market bodies moving towards broader data transparency the paper included a number of recommendations for metering. The ESB recommended that the review consider LV-DER visibility issues (as part of its broader scope) including: metering data access rights for networks, network connection points, voltage reporting, gross metering, DER minimum requirements and opportunities for improved uptake of competitive metering to assist low voltage (LV) visibility. This should include:

- metering data access rights for networks
- network connection points
- voltage reporting
- gross metering
- DER minimum metering requirements
- opportunities to accelerate uptake of competitive metering to assist LV visibility
- updated metering requirements, to ensure consumers are getting optimal value in terms of LV visibility and wider DER integration
- opportunities to provide the sector with more certainty on meter uptake rates.
- The paper also discusses access to metering data and minimum data requirements that the ESB recommends are further explored.

#### **Projects in Jurisdictions**

In addition to the Post-2025 MDIs, there are a number of jurisdiction specific project underway that are impacted by the rolling out of smart meters. Including but not limited to:

- South Australia Smarter Homes Policy - A new technical standard requires that prescribed generating systems connecting to the South Australian distribution network be capable of being remotely disconnected and reconnected by an agent registered with the Technical Regulator.

- remote re-energisation and de-energisation, particularly in Queensland.

Other projects that have data access implications that could benefit from smart meters include:

- Consumer Data Rights (CDR)
- LV network system security and reliability.

#### **QUESTION 1: CONSIDERATION OF OTHER MARKET REFORMS AND RELATED WORK**

1. Are there other significant market reforms that are likely to impact the metering framework that the Commission has not identified?
2. Is there additional related work that the Commission should consider in this metering review?

### **1.1.5**

#### **The review will be broader than envisaged in 2015**

As there have been a number of implementation issues, including three issues which have been the subject of rule changes (detailed in chapter 2), since the commencement of *Competition in metering*, this review will be broader than the Commission originally envisaged in 2015. As well as looking at the ability of small customers to appoint their own MC, and whether some form of access regulation is required for metering services, a more holistic review of the regulatory framework for metering services will be undertaken.

The Commission's approach to the review is discussed further below. In conducting the review, the Commission will be guided by the National Electricity Objective (NEO) and National Energy Retail Objective (NERO). Consumer outcomes and experience will be a key consideration when making recommendations in the review. The Commission will also take account of any related work underway, including work coordinated by the ESB.

## **1.2**

### **The approach of the review**

The Commission is initiating this review under section 45 of the National Electricity Law (NEL) and section 232 of the National Energy Retail Law (NERL), on the regulatory framework for metering services.<sup>6</sup>

The purpose of the review is to determine whether the reforms introduced under the *Competition in metering* rule change have met expectations, whether amendments are required to improve the efficiency and effectiveness of the regulatory framework for metering services, and whether the regulatory framework enables the implementation of other key

<sup>6</sup> Part 4 of the NEL sets out the functions and powers of the AEMC. Under Division 5 of Part 4, the AEMC has the power to conduct a review into the operation and effectiveness of the National Electricity Rules (NER). Part 9 of the NERL similarly sets out the powers and functions of the AEMC, with the AEMC having the power to conduct a review into the operation and effectiveness of the National Energy Retail Rules (NERR) under Division 5 of Part 9.



policy reforms under which metering services will play a role.<sup>7</sup> The terms of reference for this review are discussed below, and are published with this paper.

The review will be conducted in an independent manner, with reference groups and public forums and independent consultants utilised as required. For example, the Commission intends to engage an independent consultant to survey consumers on their experience and views and provide feedback to the Commission.

### 1.2.1

#### Terms of reference

The review will examine the current state of metering services and examine the future requirements of metering services to identify and assess key issues and risks in the current regulatory framework for metering services and whether there are any changes required to facilitate future metering needs. The Commission will provide recommendations on potential solutions, including the key components of required regulatory changes. This may include where jurisdictional instruments may need to be reviewed and amended to ensure consistency with the recommended framework.

The Commission will examine whether the expectations of industry, market bodies and other stakeholders have been met, with particular focus on:

- The current state of the rollout of smart meters in the NEM (excluding Victoria)
- Whether the expected benefits of smart meters are being realised, and if not, why
- If there are any barriers to either the rollout of smart meters, or the expected uses of smart meters
- The significance of any differences between expectations and reality.

When looking at the future requirements for metering services the review will have regard to:

- the future services meters may be expected to deliver in the future
- the impact of other market reforms on metering frameworks
- the desired role of smart meters in the future.

Additionally, the Commission is planning to examine the current market structure in the review.

The review will not examine the regulatory framework for metering services for large customers or the regulatory framework for metering services in Victoria.<sup>8</sup>

The output of the review will be a report to the National Federation Reform Council that may include:

- initial rules drafting for recommended changes to the NER and NERR
- recommendations for any required changes to other regulatory instruments

<sup>7</sup> AEMC, Terms of references of the *Review of the regulatory frameworks for metering services*.

<sup>8</sup> The Victorian government has made significant derogations from the metering provisions in the NER, with the result that key changes that were made in the *Competition in Metering* and subsequent rule changes do not apply in Victoria and metering services continue to be provided by DNSPs as a regulated monopoly service. In addition, the NERR do not apply in Victoria, as such Victoria is not included in the scope of this review.

- advice on any recommended actions for regulators or market operators, for example, revisions to guidelines or procedures
- information on gaps, or areas in which changes could be of benefit, in jurisdictional regulatory frameworks that are identified while undertaking the review; and
- advice on implementation, including the timing and sequencing of required changes.

### **1.2.2 Consultation conducted to date**

In preparation of the review, the Commission has consulted with a broad range of stakeholders to develop an initial understanding of stakeholder expectations from the metering reforms, the current state of metering services, the metering services stakeholders would like to be provided in the future, and any concerns stakeholders have in relation to metering services.

The Commission has met with and sought feedback from groups including:

- market bodies
- jurisdictional energy departments
- consumer groups
- retailers and the Australian Energy Council
- MCs and the Competitive Metering Industry Group
- DNSPs and Energy Networks Australia
- meter manufacturers
- the Clean Energy Council
- unions.

### **1.2.3 Reference Group**

The Commission plans to establish a Reference Group as a targeted consultation mechanism for this review. The purpose of this group will be to provide targeted feedback on key issues raised in the review, and to inform and 'stress test' AEMC staff's thinking. If you are interested to be part of this Reference Group, please register your interest at [registration@aemc.gov.au](mailto:registration@aemc.gov.au) by Thursday 11 February 2021. The Commission seeks to include a broad range of stakeholders. As a condition of group membership, invitees will be asked to demonstrate respect and allow for a range of views to be expressed at meetings to support open and collegiate dialogue.

In addition to the Reference Group, the Commission welcomes any opportunities to discuss with interested stakeholders all aspects of the provision of metering services for small customers. Stakeholder interested in further discussions should contact Alisa Toomey on (02) 8296 0633 or [alisa.toomey@aemc.gov.au](mailto:alisa.toomey@aemc.gov.au).

### **1.2.4 Assessment framework for the review**

This section sets out the Commission's proposed assessment framework for this review. It first discusses the overarching objectives that guide all the Commission's work, including this

review. It then outlines the criteria that we propose to use in testing whether arrangements promote these energy objectives, including how these criteria relate to a number of objectives set out in the Terms of Reference.

### **National Energy objectives**

The review is considering potential changes under the NER and the NERR. As such, two of the national energy objectives - the NERO and NEO - are relevant to this review.

The NERO is:

to promote efficient investment in, and efficient operation and use of, energy services for the long term interests of consumers of energy with respect to price, quality, safety, reliability and security of supply of energy.<sup>9</sup>

In addition, under the NERL the Commission must, where relevant:

satisfy itself that the Rule is compatible with the development and application of consumer protections for small customers, including (but not limited to) protections relating to hardship customers.<sup>10</sup>

This is referred to as the consumer protection test.

The NEO is:<sup>11</sup>

to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) price, quality, safety, reliability and security of supply of electricity and
- (b) the reliability, safety and security of the national electricity system.

Consistent with the terms of reference for the review, the Commission considers that the relevant aspects of the NERO and NEO are the promotion of efficient operation and use of energy services, and operation of electricity services for the long term interests of consumers of electricity with respect to price, quality, safety and reliability. For example, any regulatory arrangements for smart meters may affect the prices consumers pay and the security of the services they receive. The consumer protection test is also important given the strong focus of the review on the protections that consumers should receive through metering services. For a detailed discussion on the Commission's approach to applying these overarching objectives to rule making processes and reviews, such as this one, refer to Applying the energy objectives: A guide for stakeholders.<sup>12</sup>

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<sup>9</sup> NERL, s. 13.

<sup>10</sup> NERL, s. 236(2)(b).

<sup>11</sup> Section 7 of the NEL.

<sup>12</sup> AEMC, Applying the energy objectives: A guide to stakeholders, 8 July 2019, available on the AEMC's website [www.aemc.gov.au](http://www.aemc.gov.au)

### Assessment framework criteria

The assessment framework will use the following criteria to assess whether proposed recommendations are likely to promote the NEO and NERO:

1. **Transparency and predictability:** Whether the regulatory framework promotes confidence in the market by clearly defining roles and responsibilities, and whether parties, including consumers, have sufficient information to make decisions. The framework should also result in predictable outcomes for all participants.
2. **Facilitating positive customer outcomes including consumer choice:** Whether the metering framework supports customer choices, provide services and energy products at a level or quality that consumers desire, and at a price that reflects the efficient costs of doing so. Whether the metering framework promotes safety and security of the customer's energy supply.
3. **Efficient investment and allocation of risks and costs:** the regulatory framework should encourage innovation and efficient investment in the supply of energy services. Risks should be borne by parties who are in the best position to manage them, and have the incentives to do so.
4. **Regulatory and administrative burden:** Whether the regulatory framework is as simple and practicable as possible, and without excessive regulation that might impose unnecessary complexity, risks or costs.
5. **System integrity:** Whether the regulatory framework promotes the operational objectives of the NEM, as outlined in the NEO, particularly with regard to the quality, safety, reliability and security of energy supply and the national electricity system as a whole.

#### QUESTION 2: ASSESSMENT FRAMEWORK

Do you agree with the Commission's proposed Assessment Framework for this Review? Are there any additional criteria we should consider as a part of this framework?

### 1.2.5

#### Lodging a submission and next steps

Under this review's TOR, the Commission is required to consult with the AER, the Australian Energy Market Operator, energy departments of jurisdictions, consumer groups and ombudsmen of jurisdictions.

In developing its advice, the Commission will consult with a range of stakeholders through a public consultation process following publication of the consultation paper and draft report. Public workshops and forums to gather feedback and discussion papers on particular issues raised by stakeholders may also be undertaken over the course of the review, with a reference groups planned.

In addition, the Commission will consult with:

- state, territory and commonwealth officials

- the AER and AEMO
- Energy Consumers Australia, other consumer groups and ombudsmen, and seek feedback and input from stakeholders during the consultation process

The key project milestones are highlighted in the table below.

**Table 1.1: Key dates**

<b>MILESTONE</b>	<b>DATE</b>
Submissions on consultation paper due	11 February 2021
AEMC to publish draft report	May 2021
AEMC to publish final report	October 2021

Following the close of the initial consultation period the Commission plan to host a public workshop.

#### **Lodging a submission**

Written submissions on this consultation paper must be lodged with Commission by 11 February 2021 online via the Commission’s website, [www.aemc.gov.au](http://www.aemc.gov.au), using the “lodge a submission” function and selecting the project reference code EMO0040.

The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Where practicable, submissions should be prepared in accordance with the Commission’s guidelines for making written submissions. The Commission publishes all submissions on its website, subject to a claim of confidentiality.

All enquiries on this project should be addressed to Alisa Toomey on (02) 8296 0633 or [alisa.toomey@aemc.gov.au](mailto:alisa.toomey@aemc.gov.au).

## 1.3 How the consultation paper is structured

The remainder of the consultation paper is structured as follows:

- **Chapter 2:** provides an overview of the current metering framework including roles and responsibilities, scenarios for installing or replacing meters and recent metering rule changes.
- **Chapter 3:** details the current state of metering including smart meter penetration, the reasons meters are being installed and the current customer experience
- **Chapter 4:** examines the future state of metering and includes an examination of the services smart meters can provide, what additional services stakeholders think are required and other informs which may impact the review
- **Chapter 5:** examines the barriers which may be impacting smart meter adoption including barriers to the rollout and barriers to physical installation of smart meters and in realising services provided by smart meters.

## 2 OVERVIEW OF THE METERING FRAMEWORK

The current regulatory framework for metering services encompasses Chapter 7 of the NER; parts of the NERR; associated procedures, codes and guidelines and jurisdictional instruments.

Under the national regulatory framework for metering services in the NER and NERR, any new or replacement meter must be a smart meter, the minimum specifications of which are detailed in the Chapter 7 of the NER. Chapter 7 of the NER also contains provisions relating to meter installation and maintenance, the collection and provision of metering data, the accuracy of metering installations and inspection, testing and audit requirements amongst other obligations. The planned interruptions requirements associated with the installation of smart meters and other relevant consumer protections are contained within the NERR.

AEMO is responsible for the metrology procedures which make up part of the regulatory framework for metering services, and AEMO's responsibilities also include registering MCs, MPs and MDPs. The AER was responsible for developing ring-fencing guidelines for separation of DNSPs from any metering businesses.

Along with the national framework, Governments and jurisdictional safety regulators have relevant jurisdictional frameworks with technical and safety arrangements relating to metering, which form part of the regulatory framework for metering services.

### 2.1 Types of meters

#### 2.1.1 Accumulation meters

Accumulation meters (type 6 meters) are the most common form of meter in the NEM and perform only basic metering functions. Accumulation meters record the amount of electricity used, but not the time it was used. Consumers with accumulation meters are billed based on the difference between meter reads. As a consequence, consumers are often on a flat rate for electricity, and have limited understanding of their energy usage patterns or ability to manage usage to reduce their bills.

#### 2.1.2 Interval meters

Interval meters (type 5 meters) take more detailed measurements of electricity usage (every 30 minutes) and store that data on the meter until it can be manually collected. Interval meters can support some services for consumers, such as different tariff arrangements, but do not have communications functionality to be remotely read and controlled. Therefore, there is limited ability for consumers with type 5 meters to actively manage their electricity usage as they receive the data some time after consumption.

#### 2.1.3 Smart or Advanced meters

Smart or Advanced meters (type 4 meters), and the products and services enabled by those meters, give customers greater choice and control. Following the *Competition in metering* Rule Change, from 1 December 2017, all new metering installations and replacement meters

must be a smart meter that is capable of providing a set of minimum services, although there is nothing to prevent smart meters including functionality for other services if there is demand for those services. A competitive rollout of smart meters was expected to mean that smart meters would be provided at a lower cost to consumers compared with a mandatory rollout, as smart meters would only be installed where it is cost-efficient to do so. In addition, there are type 4A meters, which is a meter that is capable of providing the services in the minimum services specification, but has its communications deactivated and therefore cannot be remotely read and/or managed.

## 2.2 Roles and responsibilities

### 2.2.1 Retailer

Under the NER, retailers are responsible for arranging metering services for small customers.<sup>13</sup> Retailers must appoint an MC for each of their small customers' connection points<sup>14</sup> and obtain a national metering identifier (NMI) for each meter.<sup>15</sup> In general, the retailer provides instructions to the MC for any metering work needed by the customer.

### 2.2.2 Metering coordinator, metering provider and metering data provider

The MC has overall responsibility for all issues related to the metering installations for which it has been appointed. The MC appoints a metering provider (MP) for each connection point<sup>16</sup> to provide, install and maintain the meter installation.<sup>17</sup> The MC also appoints a metering data provider (MDP) who is responsible for the collection and processing of metering data. Any person can perform one or more of these three metering roles provided that they are registered and accredited by AEMO. In practice, most MC businesses are also registered and accredited as MPs and MDPs.

### 2.2.3 DNSP

DNSPs are no longer responsible for providing new or replacement meters for small customers. However, as a transitional arrangement, the DNSP is the metering coordinator (and MP and MDP) for existing manually read meter installations, until the meter is replaced and the retailer appoints a new MC.<sup>18</sup>

## 2.3 Installing or Replacing electricity meters

The different scenarios for installing or replacing a meter can be broadly categorised as:

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13 This is part of their responsibility as the financially responsible market participant (FRMP).

14 Clause 7.2.1(a) of the NER. Under clause 7.6.2(a)(3), a large customer may appoint its own MC.

15 Clause 7.8.2(c) of the NER. This involves applying to the distribution network service provider (DNSP) for a NMI and providing it to the MC within five business days of receiving it.

16 Other than for a connection point with a type 7 meter installed which are used for unmetered connections, for example, streetlights.

17 Clauses 7.3.2(a) and 7.8.1(c) of the NER.

18 Clause 11.86.7 of the NER.

1. Consumer-initiated installations: These include meter installations for new connections, as well as exchanging an existing meter. Some meter exchanges require an upgrade to the consumer's connection, while others do not.<sup>19</sup>
2. Replacement of malfunctioning meters: These include:
  - a. repairing a single meter due to one-off conditions such as weather damage or a fault, or
  - b. 'family failures' that result from a type of meter showing an unacceptably high failure rate during meter testing, leading to replacement of the whole fleet of meters.
3. Retailer-led installations: Under the NER, retailers can choose to deploy a fleet of new meters (a 'new meter deployment') to its consumers, in order to benefit from the functions provided by the technology, such as remote meter reading. Consumers can opt-out of these retailer-led installations.

To carry out meter installations, under jurisdictional legislation, supply is generally required to be isolated prior to any electrical works being carried out.<sup>20</sup>

### 2.3.1 Business-to-business (B2B) e-hub

AEMO's B2B e-hub supports and facilitates communications between different parties involved in providing metering services. AEMO, DNSPs, retailers, market customers, MP and MDPs are required to comply with B2B procedures. The most recent reform of the B2B framework was designed to commence in alignment with the *Competition in metering* rule and provides an agreed set of communications to facilitate the provision of metering services for small customers.<sup>21</sup> It also allows parties to agree to use an alternative communication method. It is the Commission's understanding that most metering parties have chosen to utilise B2B communication to facilitate meter installations.

## 2.4 Planned interruptions

The NERR includes a number of consumer protections. These protections include requiring retailers and DNSPs to provide prior notice to customers before they conduct a planned interruption to their electricity supply.

### 2.4.1 Retailer planned interruptions

Under the NERR, retailers are able to arrange for an interruption to their customer's electricity supply without the involvement of the distributor (a 'retailer planned interruption') where the interruption:<sup>22</sup>

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19 For example, where a consumer installs a power-intensive device such as a large air conditioner and requires a three-phase electricity connection.

20 For example, in New South Wales clause 207 of the Occupational Health and Safety Regulation 2001, specifies that no work can be carried out if the circuits and apparatus of the part of the installation that is being worked on is energised. Clause 207(5) of that Regulation provides that this prohibition does not apply to electrical work carried out by a network operator under a plan that is required to be lodged under the Electricity Supply (Safety and Network Management) Regulation 2002 (NSW). Similar provisions exist in other jurisdictions.

21 AEMC, Updating the electricity B2B framework Rule Determination, 2016, pp. 144.

22 Rule 59B of the NERR.



- is for the purposes of installing, maintaining, repairing or replacing an electricity meter; and
- does not involve either the distributor effecting the supply interruption or interrupting the supply of electricity to a customer that is not a customer of the retailer arranging the interruption.<sup>23</sup>

#### **2.4.2 Distributor planned interruptions**

DNSPs are able to arrange for an interruption to a customer's electricity supply under rule 90 of the NERR (a 'distributor planned interruption') for:

- the planned maintenance, repair or augmentation of the transmission system
- the planned maintenance, repair or augmentation of the distribution system, including planned or routine maintenance of metering equipment (excluding a retailer planned interruption); or
- the installation of a new connection or a connection alteration.<sup>24</sup>

#### **2.4.3 Planned interruption notices for large and small customers**

The NERR specifies that a retailer or DNSP may only arrange a planned interruption of a consumer's electricity supply once they have provided four business days' prior notice to the consumer of the interruption or obtained the affected customer's explicit consent to the interruption occurring.

Retailers and DNSPs, with the explicit consent of the customer, can arrange for an interruption on any day within a date range of five business days, or on a specific date. If a date or date range is not agreed with a customer, a notice must be provided at least four business days before the date of the interruption.<sup>25</sup>

#### **2.4.4 Life support customers**

For life support customers, the customer can only agree to a specific date, not a date range. If a date cannot be agreed with the customer, four business days' notice is to be provided in writing and must be counted from, but not include, the date of receipt of the notice.<sup>26</sup>

#### **2.4.5 Requirement to inform the other party**

Under the NERR, a retailer must notify the relevant DNSP on the same day it obtains a consumer's explicit consent to a retailer planned interruption, or where consent is not obtained for the interruption to occur on a specific date or date range, at least four business days before the retailer planned interruption.<sup>27</sup> This is an additional consumer protection so that the distributor can address any customer queries if contacted by the customer during a planned outage.

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23 Rule 89 of the NERR.

24 Per the definition of a distributor planned interruption set-out in Rule 88 of the NERR.

25 Rules 59C and 90 of the NERR.

26 Subrules 59C(1)(c) and 124B(1) of the NERR.

27 Subrule 99A(1)(b) of the NERR.

A similar requirement exists for DNSPs to notify the relevant retailer of a distributor planned interruption.<sup>28</sup>

## 2.5 Other components of the framework

### 2.5.1 Communications

Smart meters must be connected to a telecommunications network which enables remote access to the meter.

AEMO may grant an exemption to the requirement to meet the minimum services specification where there is no existing telecommunications network which enables remote access to the meter. The effect of such an exemption is that the meter must still be capable of providing the services listed above, but it does not need to be connected to a telecommunications network.

Under the *Meter installation - advanced meter communications* rule change a consumer can choose to have the communications functions of a smart meter switched off (or back on) at any time where the consumer has indicated its refusal to have a remotely read meter. The meter then becomes a type 4A meter.

### 2.5.2 Data

The MC arranges for the installation, provision and maintenance of the metering installation, and the collection, processing and delivery of metering data. The MC appoints an MDP who is responsible for the collection, processing and delivery of metering data.

The MDP is required to establish and maintain a metering data services database associated with each metering installation under clause 7.10.1 of the NER. The MDP then provides metering data to people that are authorised to access or receive it (for example, a retailer may access NMI standing data and DNSPs may access metering data for those meters for which it has a financial interest in the energy measured by the meter). Parties that require metering data for the purpose of meeting their statutory requirements receive that metering data from the MDP in accordance with AEMO's procedures. Metering data may also be provided in connection with services contained in the minimum services specification to parties that are listed as access parties, or if the relevant customer consents to the provision of that data, as a discretionary service under a commercial arrangement. There is no regulation on the price of new services provided by the MC.

AEMO is responsible for maintaining and administering a metering database containing information for each metering installation registered with AEMO including metering data and settlements ready data. AEMO has discretion to determine the appropriate means of enabling parties to access or receive data from its metering database, for example by providing direct access to the metering database or by way of providing a set of standard reports generated in Market Settlement and Transfer Solutions (MSATS).

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<sup>28</sup> Subrule 99(1)(b) of the NER.

### 2.5.3 Minimum specifications

Under the NER, to meet the minimum services specification, all new and replacement meters that are installed for small customers must be capable of providing the following services:<sup>29</sup>

- remote disconnection service
- remote reconnection service
- remote on-demand meter read service
- remote scheduled meter read service
- meter installation inquiry service, inclusive of supply status, voltage, current, power, frequency, average voltage and current, and events that have been recorded in the meter log like information on alarms, and
- smart meter reconfiguration service.

## 2.6 Recent metering rule changes

### 2.6.1 Meter installation timeframes

In 2018, the *Metering installation timeframes* final rule saw changes made to the NER and NERR to provide customers with greater control and confidence over when their electricity meter will be installed. The rule imposed obligations on retailers to install meters within specified timeframes, and provided more flexibility for both retailers and DNSPs in arranging for planned interruptions.<sup>30</sup>

Under the rule, retailers are required to provide a meter for a new connection or perform a simple meter exchange by a date agreed with the customer. If no date can be agreed, then the retailer will need to install the meter within six business days at a new connection, or within 15 business days if the customer has requested a simple meter exchange.

For a meter exchange that requires a connection alteration to be completed by a DNSP, the retailer will be required to install the meter by a date agreed with the customer and the DNSP. If no date is agreed, the rule requires the retailer to install the meter within 15 business days and specifies that DNSPs must coordinate connection works to allow retailers to meet their timeframe obligations. The rule also includes a range of additional measures that seek to reduce meter installation delays and increase consumer confidence.

### 2.6.2 Meter installation — advanced meter communications

In 2019, the *Meter installation - advanced meter communications* rule change amended the NER to allow the communications on an installed type 4 smart meter to be switched off at any time if requested by a customer.<sup>31</sup>

<sup>29</sup> AEMC, *Expanding competition in metering and related services*, Rule Determination, 26 November 2015, pp. vii-viii.

<sup>30</sup> AEMC, *Metering installation timeframes*, Final determination, 6 December 2018. Available at: <https://www.aemc.gov.au/rule-changes/metering-installation-timeframes>. The final rule commenced on 1 February 2019.

<sup>31</sup> AEMC, *Meter installation - advanced meter communications*, final determination, 21 March 2019. Available at <https://www.aemc.gov.au/rule-changes/meter-installation-advanced-meter-communications>

### 2.6.3 Introduction of metering coordinator planned interruptions

Following the 2018 timeframes rule change, the Commission was requested to review planned interruptions timeframes, especially for situations where multiple customers share fusing. It was requested that market participants in the metering coordinator role be given ability to plan interruptions across customers, regardless of financially responsible market participant.

Under the rule, where it is discovered the installation of an electricity meter, or the rectification of a malfunctioning meter, will require interrupting the supply to other customers the following timeframes apply:<sup>32</sup>

- Retailers are required to agree an installation date with the consumer, or if no date is agreed, complete the meter installation within 30 business days of discovering the shared fusing;
- Metering coordinators are required to rectify meter malfunctions within 30 business days of discovering the shared fusing;
- Distributors are required to carry out a distributor planned interruption within 25 business days following a request by a retailer in order to allow for the retailer or metering coordinator to meet their timeframes.

The rule also:<sup>33</sup>

- clarified that a retailer is able to interrupt supply to any of its own consumers for the purpose of metering, not just the consumer receiving the new meter, subject to meeting existing notice or consent requirements;
- amended the requirements to be covered within the Metrology Procedures for retailers and metering coordinators to inform distributors when shared fusing is discovered, with distributors to then record the shared fusing information as soon as practicable.

## 2.7 Jurisdictional regulations

Jurisdictional governments and safety regulators have responsibilities over technical and safety arrangements relating to metering in jurisdictional instruments.

Several provisions of the *Competition in metering* rule provide that obligations must be performed in accordance with relevant jurisdictional electricity legislation. For example, in relation to the safety of metering devices, the safe installation of meters or the safe use of smart metering services, and remote de-energisation and re-energisation services. The regulation of electrical safety matters falls within the remit of jurisdictional departments or jurisdictional safety regulators in each state and territory.

Safety regulators in some jurisdictions have developed additional requirements with respect to safely disconnecting and reconnecting customers. Remote de-energisation and re-energisation is not allowed, or only recently allowed in some jurisdictions.

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<sup>32</sup> AEMC, *Introduction of metering coordinator planned interruptions*, final determination, 21 May 2020. Available at <https://www.aemc.gov.au/rule-changes/introduction-metering-coordinator-planned-interruptions>

<sup>33</sup> Ibid.

## 3 THE CURRENT STATE OF METERING

In this review, the Commission will examine the effectiveness of the metering framework, and whether the aims of the framework have been achieved (or are on the way to being achieved). To do this, it is important to understand what the expectations around the smart metering roll out were, and whether the current state has met those expectations. In particular, the review will consider the customer experience under the current metering framework and whether there are any barriers to the expected and desired state of metering being met.

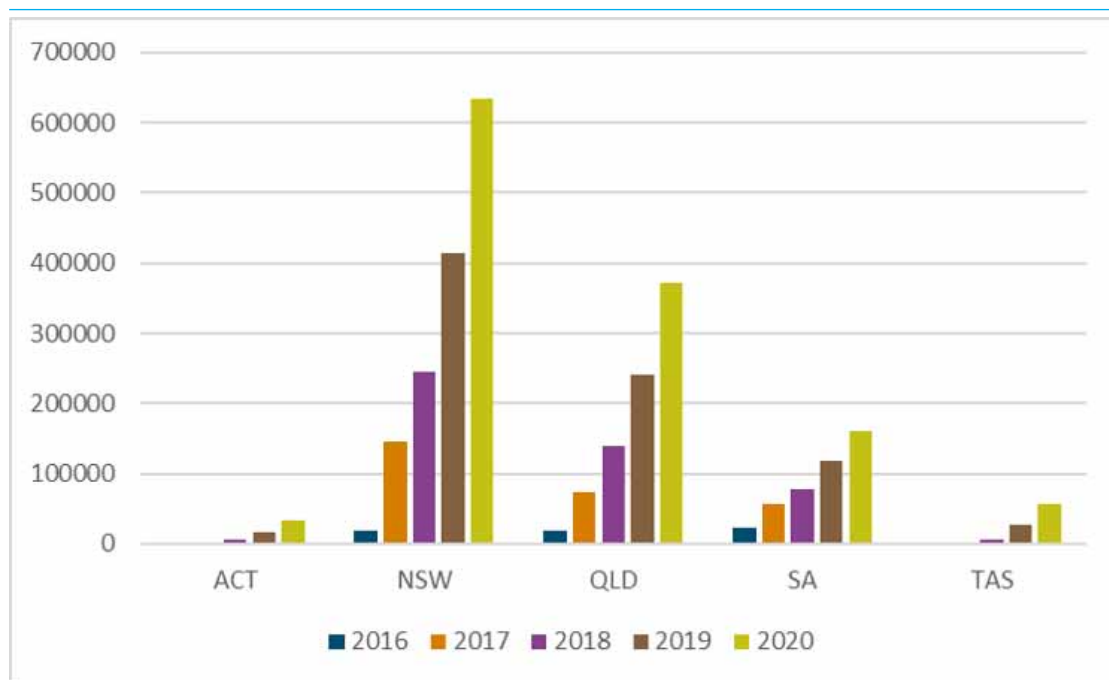
This chapter considers and seeks further feedback from stakeholders on the current and expected state of metering services. This includes both the penetration of smart meters and the services being provided by smart meters.

### 3.1 Smart meter penetration

#### 3.1.1 Current penetration is around 20%, varies by jurisdiction and distributor

The percentage of smart meters in the NEM has been steadily increasing for the past five years. In October 2020, there were 1.04 million smart meters installed across the NEM (excluding Victoria), this equates to a 17.4% penetration. Figure 3.1 below shows the breakdown by jurisdiction, with New South Wales having the highest number of installed smart meters.

**Figure 3.1:** Total number of smart meters by jurisdiction

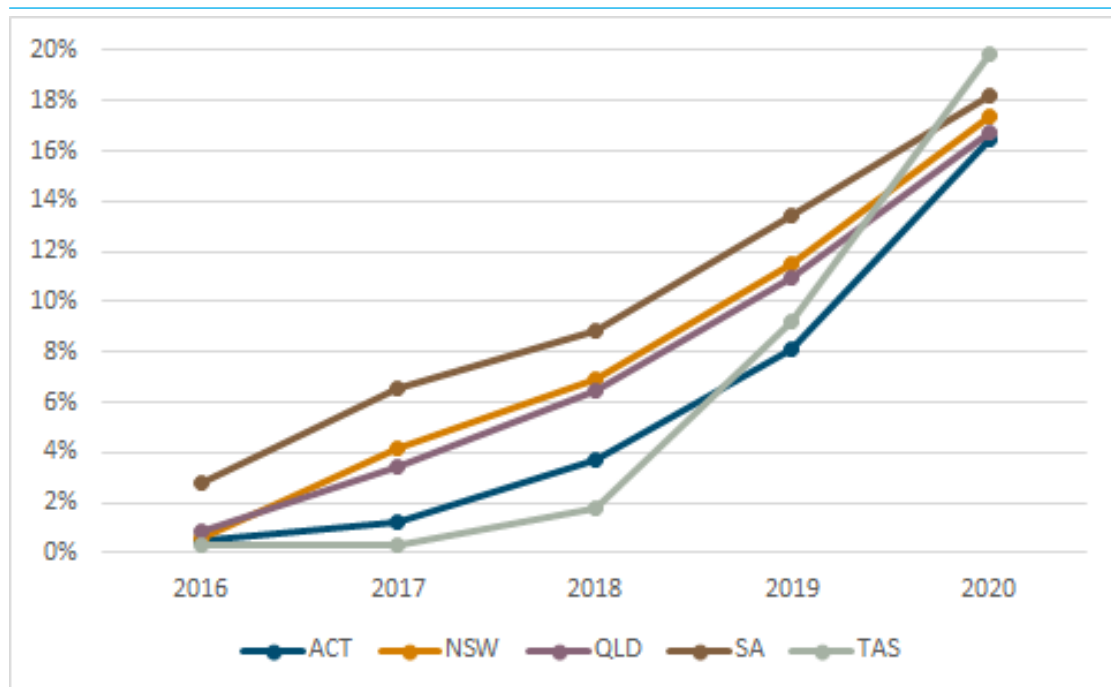


Source: AEMO (MSATS data)

Note: Data in this chart shows smart meters for small customers only.

While New South Wales has the highest number of smart meters, Tasmania has the highest penetration of 20 percent, and the Australian Capital Territory with the lowest at just over 16 percent. Figure 3.2 below shows the percentage penetration for each of the jurisdiction.

**Figure 3.2:** Smart meters as a percentage of all small customer meters in each jurisdiction

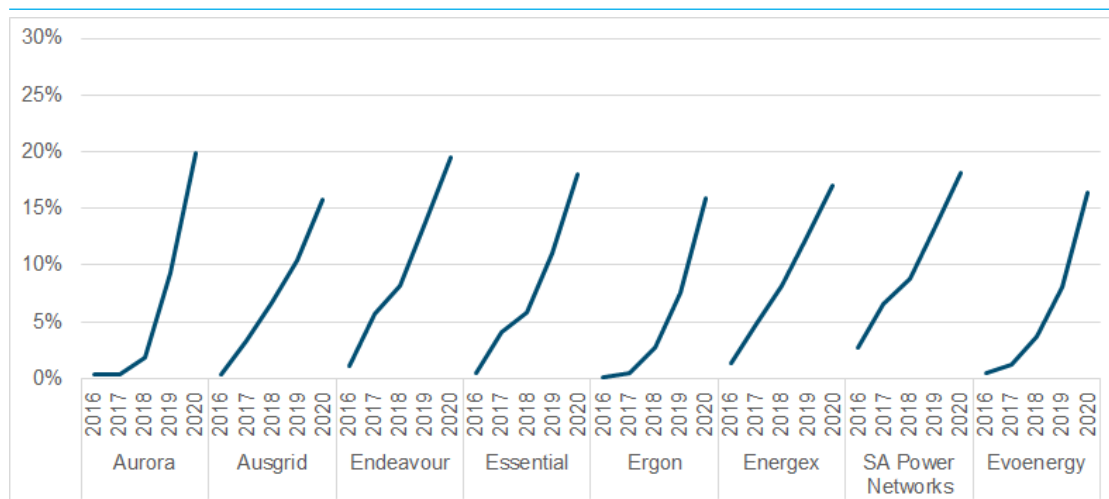


Source: AEMO (MSATS data)

Note: Data in this chart shows smart meters for small customers only.

The variation in smart meter penetration rate may reflect differences in family failure rates, customer take up of distributed energy resources such as solar PV, and differences in retailer-led rollouts. The uptake of smart meters also differ between DNSPs. Figure 3.3 below shows the rate at which smart meters, as a portion of total meters, in each distribution network area have trended since the commencement of the *Competition in metering* rule. Ausgrid and Ergon have the lowest proportion of smart meters in their network areas as compared to the other DNSPs.

**Figure 3.3: Percentage of smart meters per distribution network area**



Source: AEMO (MSATS data)

Note: Data in this chart shows smart meters for small customers only.

### 3.1.2

#### Commission and stakeholder expectations

##### Commission expectations

The Commission did not have specific expectations relating to the speed at which the rollout of smart meters would be achieved as the framework is designed to enable a consumer-led deployment of smart meters. However, the Commission expected that the competitive deployment of new meters would be more efficient than under the previous framework. Competition was expected to enable greater availability of meters for consumers or market participants to acquire, at the market determined least cost by:<sup>34</sup>

- providing innovation and choice through commercial incentives
- placing downward pressure on the price of meters plus associated products and services
- removing barriers and disincentives.

The Commission has limited visibility of the current price of meters, incorporating the costs of their installation, maintenance and other ongoing costs associated with services. In this review, the Commission is seeking to develop a greater understanding of the current costs of smart meters and associated services.

##### Stakeholder expectations

In initial discussions prior to the commencement of this review, many stakeholders, but not all, expressed the sentiment that their expectations on smart meter rollout were not met, and they expected more smart meters to have been deployed by now. The Commission is interested in further stakeholder feedback on expectations relating to the roll out of smart

<sup>34</sup> AEMC, Expanding competition in metering and related services, Rule Determination, 26 November 2015, pp. 33-34.

meters, including the number of smart meters installed, and the costs associated with those meters.

### QUESTION 3: EXPECTATIONS OF METER ROLL OUT

Although the numbers are steadily increasing, whether the rate of the roll out meets expectations and current requirements is a key question for this review.

1. How does the roll out of smart meters to date compare with your expectations?
2. Is the current pace of smart meter deployment appropriate? What should be the appropriate pace of rollout?
3. What benefits are smart meters providing consumers? Have the benefits changed or improved over time?
4. Have the prices of smart meters plus the costs of associated products and services changed from the introduction of *Competition in metering*? If so, how?

### QUESTION 4: ARE INCENTIVES IN THE RIGHT PLACE?

As well as understanding more about stakeholder expectations around the roll out of smart meters, and whether those expectations have been met, the Commission is additionally interested in stakeholder views on whether incentives are in the right place.

1. Are the incentives in relation to smart meter roll out correct? Please provide details on why/why not.
2. Is the current market structure financially viable? If not, for whom is it not financially viable?

## 3.2

### Reason for new meter installation

#### 3.2.1

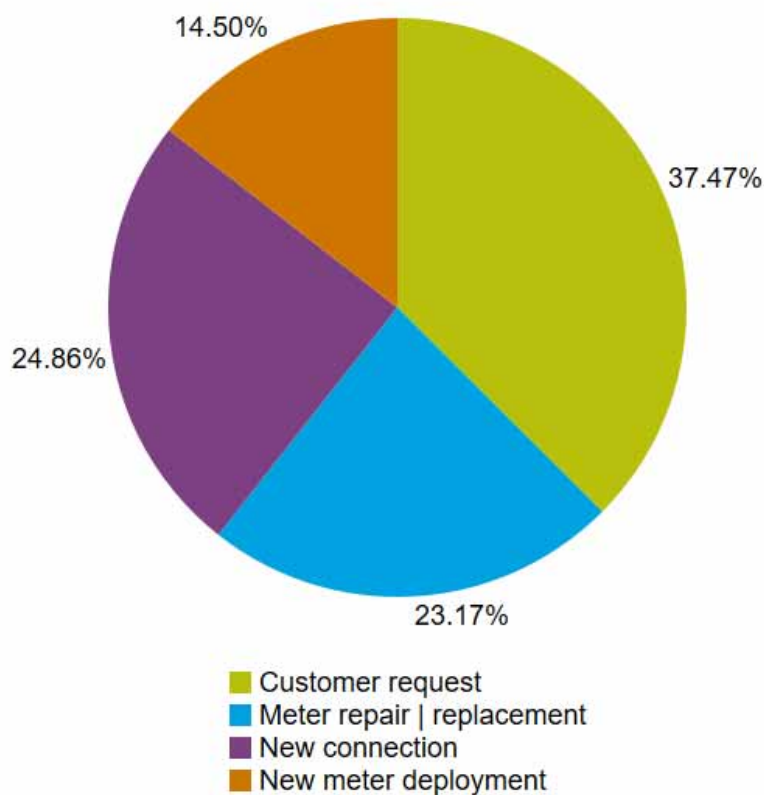
#### Smart meter installation is driven by customer requests

As discussed in Section 1.3, there are a number of scenarios where a smart meter would be installed. Before identifying potential barriers, it would be important to understand the drivers for smart meter uptake. Data from the AER's retail energy market performance update for quarter 3, 2019-2020 shows that consumer requests were the key driver of meter installations, making up over a third of meter installations.<sup>35</sup> This was followed by a new connection (also consumer driven) and then meter repair or replacement. New meter deployments, also known as retailer-led roll outs were the smallest proportion. Figure 3.4 below provides a breakdown.

<sup>35</sup> It is the Commission's understanding that the majority of consumer requests for smart meters relate to the installation of solar PV.



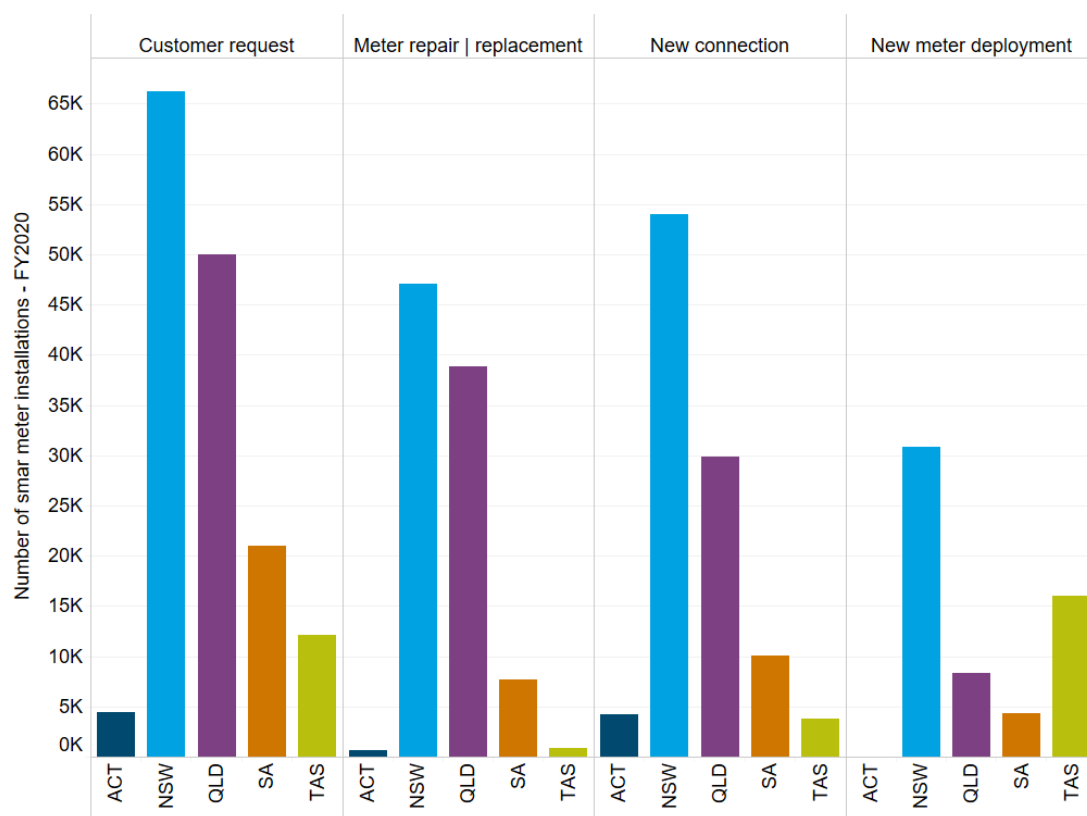
**Figure 3.4:** Reason for smart meter uptake, 2019-20



Source: AER, Retail energy market performance update for Quarter 3, 2019-2020

While there are some jurisdictional differences in the reasons for new meter installations, Figure 3.5 below shows that the number of smart meters rolled out by both retailers and due to family failures and meter replacements are generally low compared to customer-initiated requests. Tasmania is the only jurisdiction where retailer-led rollout exceeds all other categories. In all the other jurisdictions this remains the smallest category.

**Figure 3.5: Reason for smart meter installations by jurisdiction, 2019-2020**



Source: AER, Retail energy market performance update for Quarter 3, 2019-2020

### 3.2.2

#### Some stakeholders expected meter replacements to drive smart meter penetration

In initial discussions with the Commission, some stakeholders have indicated that the number of smart meters rolled out due to aged meters and family failure is smaller than they anticipated. If a faster rollout of smart meters is desired, this is an area which warrants further consideration.

In addition, although the highest proportion of smart meters are rolled out on customer request, not all customers request to install a smart meter are fulfilled. A customer can request the installation of a smart meter, however, if the customer’s existing meter remains fit for purpose and is working accurately the retailer is under no obligation to fulfil the customer’s request. Where a meter or family of meters is faulty, or where a customer has installed solar PV and the meter is required to measure both imports and exports a retailer will be obliged to install a smart meter.

#### QUESTION 5: DRIVERS OF SMART METER ROLL OUTS

1. What were your expectations regarding the drivers of smart meter roll outs?
2. Has there been any changes in the overall reasons for installing smart meters since the *Competition in metering* rule commenced?
3. Which parties should be responsible for driving the roll out of smart meters?
4. Do consumers have clear information on the benefits of smart meters and their rights relating requesting a smart meter?

## 3.3

### Consumer experience

#### 3.3.1

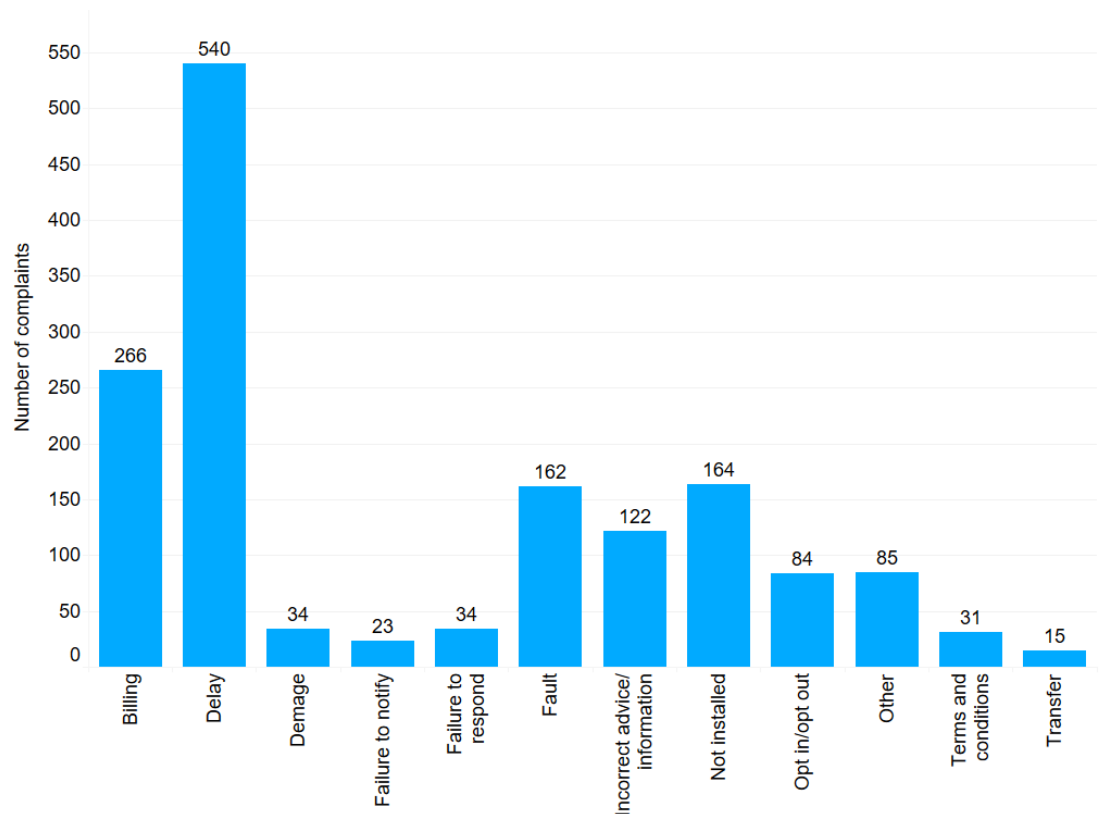
##### **Installation delays remains a key driver of customer complaints**

As part of this review, the Commission will be seeking to understand consumers' experience, both positive and negative, since the introduction of metering competition. One of the indicators of consumers' experiences are customer complaints. The Commission recognises that since the commencement of the *Competition in metering* rule on 1 December 2017, there have been a number of implementation issues in relation to customer experience. Consumers have, at times, expressed frustration with issues such as:

- meter installation process
- costs of smart meters
- tariff reassignment
- smart meter communications
- data usage.

Data obtained from jurisdiction ombudsman and the AER indicate that installation delays is the key drivers in metering complaints. Figure 3.6 below shows that the Energy and Water Ombudsman of New South Wales (EWON) received 540 complaints (around 33 percent of complaints received) in relation to delays.

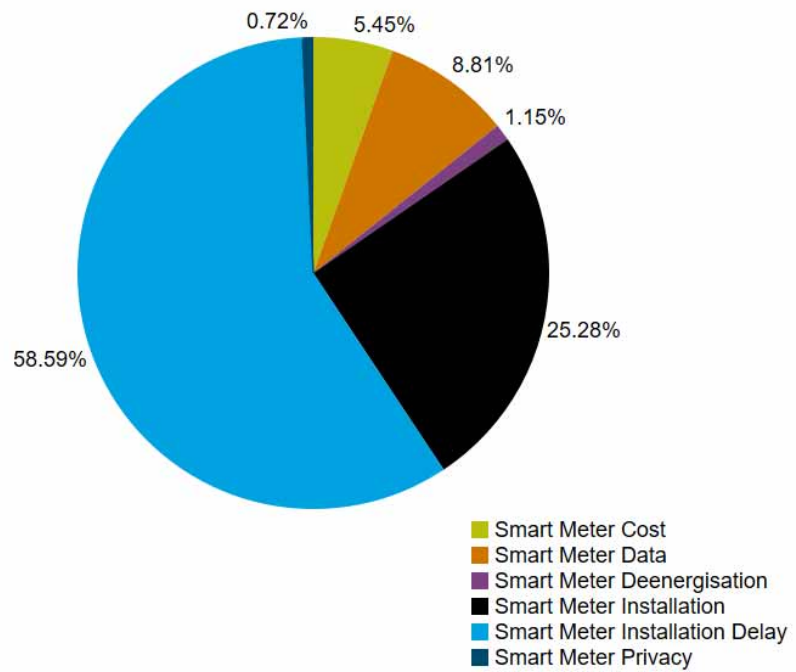
**Figure 3.6: Digital meter exchange complaints in New South Wales, 2019-20**



Source: EWON, Annual Report 2019-20.

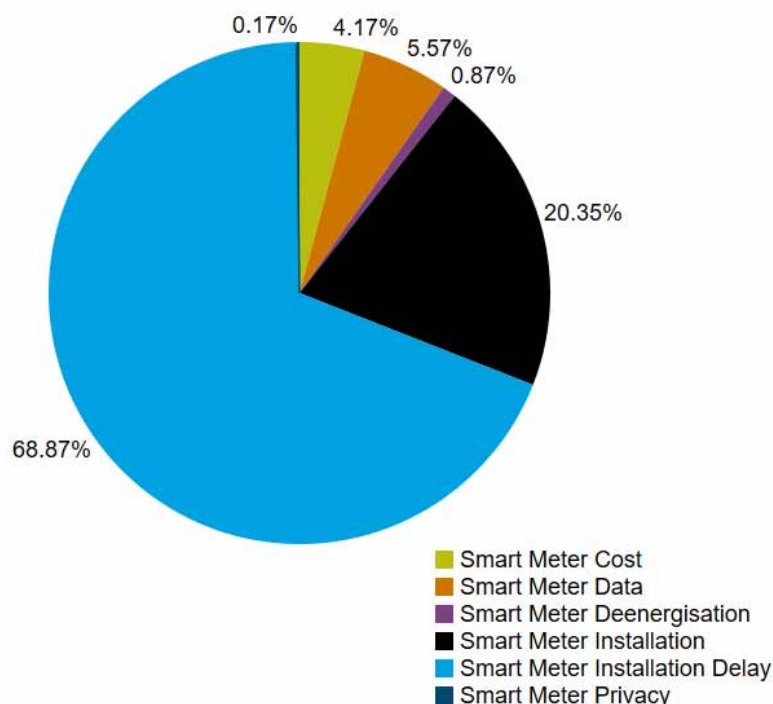
The issue of installation delay is not limited to one or two jurisdictions, with the AER also reporting that the majority of small customer metering related complaints attributed to installation delays. For residential customers, AER data shows that nearly 60 percent of the metering related complaints received were attributed to installation delays (see Figure 3.7 below), while nearly 69 percent of the complaints from small business customers were related to installation delays (see Figure 3.8 below).

**Figure 3.7:** Residential metering complaints, 2019/2020



Source: AER, Retail energy market performance update for Quarter 3, 2019-2020.

**Figure 3.8: Small business metering complaints, 2019-20**



Source: AER, Retail energy market performance update for Quarter 3, 2019-2020.

### 3.3.2

#### **There has been some improvements, but more work is needed**

In response to stakeholder concerns about implementation issues, the Commission has made three rules since the introduction of metering competition. Metering installation process was the subject of two rule change requests,<sup>36</sup> and one rule change request was submitted to address issues with metering communication.<sup>37</sup>

The Commission understands that some of the new rules have gone some way to address issues that have arisen relating to consumer experience. Ombudsmen in each jurisdiction indicated in discussions with the Commission that the overall number of complaints relating to metering have decreased, particularly since the changes introduced in the *Metering installation timeframes* rule change.

<sup>36</sup> Details of these rule change can be found on the Commission’s website under the following projects: ERC0236 - Metering installation timeframes and ERC0275 - Introduction of metering coordinator planned interruption.

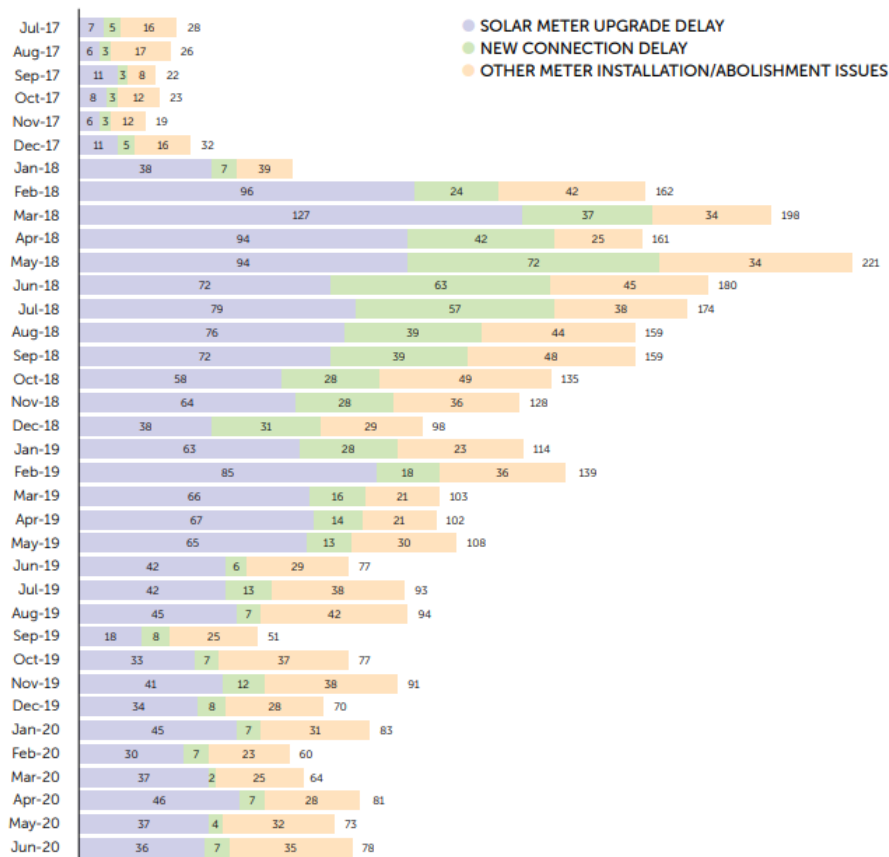
<sup>37</sup> Details of this rule change request can be found under the following project: ERC0246 - Meter installation - advanced meter communications.

In South Australia, where the issue of metering installation delay was particularly acute in 2018, the Energy and Water Ombudsman of South Australia’s (EWOSA) 2019-20 annual report noted.<sup>38</sup>

There was a large volume of cases relating to electricity metering competition from late 2017 as the new regime which introduced metering competition commenced. There has been a gradual decline in these cases since March 2018. Solar meter case levels have remained steady throughout this year, in contrast to the trend of decreases for the majority of other sub-issue cases. Solar meter upgrade delay cases were still higher in June 2020 compared to June 2017 before metering competition was introduced.

Data from EWOSA in Figure 3.9 below shows that after increasing substantially in early 2018, metering complaints has decreased significantly by June 2020.

**Figure 3.9: Metering related complaints received by EWOSA, 2017-2020**



Source: EWOSA, 2019/2020 annual report.

38 EWOSA 2019/2020 Annual report, p. 37.

Aside from data on customer complaints obtained from the AER and jurisdictional ombudsmen, the Commission is cognisant of the fact it has limited visibility of the consumer experience in relation to the rollout of smart meters. Consumer expectations and the consumer experience is a key area of focus for this review. The Commission welcomes feedback in relation to what is working well, and what is not working for consumers under the current framework, and whether the expected consumer benefits are being realised.

#### **QUESTION 6: CONSUMER EXPERIENCE**

1. What are your views on the customer experience in relation to smart meter roll out and installation?

### **3.3.3**

#### **Industry cooperation has been identified as an issue**

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) found in its 2018 review of *Retailers' metering practices in NSW* that market participants have not coordinated well to organise access, identify meter board issues and follow up with customers.<sup>39</sup>

Cooperation and coordination between industry participants in facilitating the installation of smart meters is another key area of focus for the review. There are multiple roles and multiple parties performing each of those roles under the regulatory framework. The complexity of roles and responsibilities, and whether the complexity is impacting cooperation and coordination requires consideration. The Commission will seek to understand if there are any improvements to the market structure or clarification of roles and responsibilities which could improve cooperation and coordination and improve the customer experience.

#### **QUESTION 7: INDUSTRY COOPERATION**

1. Do you have any suggestions on how industry cooperation can be improved?
2. Are changes to the market structure or roles and responsibilities needed to improve the consumer experience?

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<sup>39</sup> IPART, *Retailers' metering practices in NSW*, final report, November 2018, p. 11.



## 3.4 An increase in services and benefits were expected

### 3.4.1 A service based regulatory framework

#### Commission's policy intention

Instead of prescribing the capability that smart meters need to provide, the *Competition in metering* final rule introduced minimum services specifications. Under the framework, smart meters must be able to providing the following:<sup>40</sup>:

- remote disconnection service
- remote reconnection service
- remote on-demand meter read service
- remote scheduled meter read service
- meter installation inquiry service, inclusive of supply status, voltage, current, power, frequency, average voltage and current, and events that have been recorded in the meter log like information on alarms and
- smart meter reconfiguration service.

The framework does not preclude the negotiation of discretionary services between metering parties and other market participants. This approach was expected to minimise the cost of meter replacement, and incentivise provision of services in instances where the consumer, or market participants see the benefit for doing so.

#### Stakeholders expectations

Stakeholders shared some of their expectations from *Competition in metering* relating to metering services in initial discussions with the Commission. All stakeholders indicated that they expected services such as remote re-energisation and de-energisation and meter reading to be available to market participants at premises where smart meters have been installed. However, safety regulations have thus far limited this service being utilised.

Broadly, the Commission understands that retailers considered remote services to be a key benefit of smart meters. Other services such as demand response programs, the facilitation of virtual power plants, better integration of DER and enabling 'smart home energy products' like in home displays or mobile usage tools was also anticipated by retailers.

MCs reflected that they expected increased instances of time of use tariff offerings, more accurate monthly billing and daily data feeds, and improved quality of consumer consumption data. As well, MCs expected that smart meters would enable services such: as load and peak demand controls in real time; data delivery to network service providers (including Power Quality Data like voltage measurement and load control services); off market data provisions and meter inquiry services.

The services that DNSPs expected largely related to data that can be gathered by smart meters. For example, engineering or supply or power quality information (e.g. voltage, current, harmonics), detection of supply issues or neutral integrity/detection of broken

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<sup>40</sup> AEMC, Expanding competition in metering and related services, Rule Determination, 26 November 2015, pp. vii-viii.

neutrals. They also expected smart meters to facilitate real-time customer outage management and faster outage response, and eventually more informed tariff pricing incentives. Additionally, DNSPs expected remote services such as disconnection and reconnection, special reads, load control, and consumer data access for self-management, and services relating to DER integration.

As noted above, the Commission has limited visibility of consumer expectations, both in relation to number of smart meters to be rolled out, and of the services that smart meters would enable. Therefore, the Commission is particularly interested in understanding consumer expectations, and whether those expectations have been met.

#### **QUESTION 8: EXPECTATIONS OF METERING SERVICES**

1. What expectations did you have around the services that smart meters would provide? Were your expectations met?
2. What services are being provided by smart meters currently? Are these services widely available?
3. What services did you expect from smart meters which have not eventuated?
4. Are there any services being provided by smart meters which were not anticipated at the time of the *Competition in metering* rule change?

## 4 THE FUTURE STATE OF METERING

In making the *Competition in metering* rule, the Commission recognised that smart meters are a key enabler of energy market transformation. For the consumer, smart meters would enable the provision of better real-time information on their consumption, and greater ability to control and manage their usage and costs. Consumer bills would be more accurate, with estimated meter reads a thing of the past. Smart meters also allow consumers to efficiently respond to price signals, facilitating the move towards two-sided markets, where both demand and supply side of energy participate in the market. Further, smart meters were expected to provide indirect benefits for consumers and the industry such as improved visibility and control of the low-voltage network, improved safety visibility, reduced network congestion at peak periods and costs savings from remote services.

Currently, the uptake and roll out of smart meters has enabled a number of products, such as time of use and demand management services and the facilitation of different billing cycles. In addition to this there are some negotiated services being provided beyond the minimum service specifications. For example, data management, voltage management and off market services, controlled load management, and demand response can currently be provided through the meter. Further, developments in the NEM, such as the South Australian Smarter Homes relevant agent remote service<sup>41</sup>, is a service that can be made possible through a smart meter.

Other services beyond the minimum service specifications were expected to be negotiated between MCs, retailers, DNSPs, and other energy service providers, inclusive of in-home displays and web portals, load management, and visibility of the LV network. Many of these services are not yet widely available. The Commission considers that this may in part be due to the penetration of smart meters required to make the provision of many services economically efficient not being met.

In this chapter, the Commission is seeking to understand stakeholders needs relating to metering services as well as expectations around the future roll out of smart meters to inform its recommendations. The Commission has analysed current and expected services and held discussions with a range of stakeholders to understand initial views. The roll-out of smart meters and the services meters are providing in other jurisdictions and in other countries, and whether any features of those rolls-outs are appropriate for the NEM, will also be considered as part of this review.

### 4.1 Current smart meters have the ability to provide more data and services

As discussed in Chapter 3, smart meters are primarily being used in the NEM to provide: consumption data for billing purposes, remote meter reading, and measuring solar exports to the grid. The Commission understands that current meters have the potential to collect more data and provide more services. For instance, smart meters can provide consumers with

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<sup>41</sup> The relevant agent service is disconnecting and reconnecting solar PV systems during a State electricity security emergency.

more immediate billing and consumption information and assisting network providers through the provision of real-time information about voltage, current, frequency, consumption and exports.

#### 4.1.1

#### Smart meters could provide data required by other parties

In the Commission's 2019 *Electricity network economic regulatory framework review*, the use of smart electricity meters as a source of data for consumers and market participants was discussed. At that time it was acknowledged that many off-the-shelf smart meters could provide a lot more information than required under the NER. However, consumers and DNSPs often only see a fraction of the data, with the only data currently shared by or available through market systems settlement data, which in most cases relates solely to energy imports and exports.<sup>42</sup> Similarly, the Distributed Energy Integration Program's (DEIP) Access and Pricing Working Group also considered smart meters to be key enablers to ongoing price reform and measurement of bidirectional power flows.<sup>43</sup>

As required under the minimum services specifications in the NER, smart meters are already capable of providing a large amount of information about voltage, current, frequency, consumption and exports.<sup>44</sup>

Currently, DNSPs are allowed to access or receive metering data, settlements data, NMI standing data and data from the metering register for a metering installation without customer consent. However, in order to receive this data DNSPs need to request it from the MC. DNSPs can also request data on voltages, current, power, supply frequency and events associated with the meters of its customers, while a small customer can provide permission for a market participant to access this data for their meter. However, the metering coordinator is at liberty to charge a negotiated fee for providing these services.<sup>45</sup> The Commission understands that currently there are only a few instances where DNSPs and MCs have entered into agreements for MCs to provide data to DNSPs.

Broader collection, storage and access to metering information would also be in the long term interests of consumers through reducing energy services costs. The marginal cost of collecting, storing and making a much wider suite of data available may be small, particularly for new installations where meters can be pre-configured with broader data requirements, or where existing meters can be remotely re-programmed. However, the appropriate cost recovery and allocation for metering services requires consideration.

#### QUESTION 9: COLLECTION AND USE OF METERING DATA

1. In relation to metering data, what data should be captured by smart meters and why?

<sup>42</sup> AEMC, *Electricity network economic regulatory framework review 2019 report*, pp. xii, 33-34, 26 September 2019.

<sup>43</sup> *DEIP Access and Pricing Package: Reform Package Outcomes Report*, pp. 33-34. This report can be accessed here: <https://arena.gov.au/assets/2020/07/deip-access-pricing-reform-package-outcomes.pdf>

<sup>44</sup> Table S7.5.1.1 of the NER, item 1(e).

<sup>45</sup> Clause 7.6.1 of the NER.

2. In relation to metering data, who should be able to access metering data, and how? What protections should be in place?
3. What impact do you think the Consumer Data Rights may have on the access to, and use of, metering data?

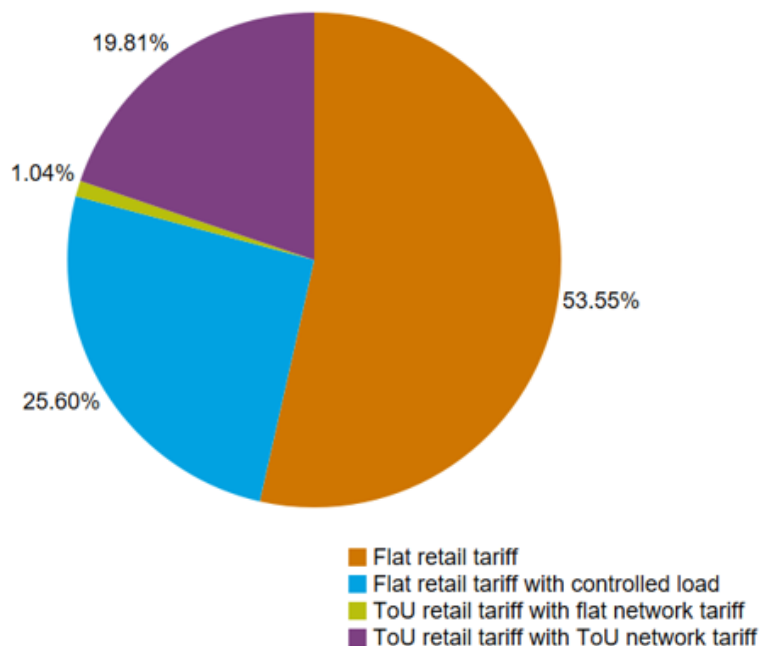
#### 4.1.2

#### Smart meters could support more flexible tariff options

Smart meters can facilitate increased flexibility of tariff options. That is, pricing that better reflects the value of electricity supplied, when it is supplied, and rewards consumers for changing their consumption helps to minimise the overall cost for the electricity system. However, the benefits of cost reflective tariffs are largely still to be realised.

The majority of customers in the NEM remain on flat tariffs, with only 20.8% of customers on a time of use or flexible retailer tariff at the end of March 2020 (including 1% of consumers without an underlying network time of use or flexible tariff).<sup>46</sup> Given approximately 42% of consumers in the NEM have smart meters,<sup>47</sup> there remains a proportion of smart meter consumers with flat tariffs.

**Figure 4.1:** Tariffs type in the NEM as at Quarter 3 2019/2020



Source: AER, Retail energy market performance update for Quarter 3, 2019-2020, schedule 2.

<sup>46</sup> AER, Retail energy market performance update for Quarter 3, 2019-10, schedule 2.

<sup>47</sup> As at 30 June 2020.

As well as providing consumers with billing and consumption information, smart meters allow consumers and market participants to see both incoming and outgoing flows of electricity. Currently, the use of online apps is still restricted, with apps with some billing and/or consumption information being offered by retailers or storage providers. The Commission considers that there is a potential for online services and applications to be coupled with smart meters to allow consumers to have greater access to their real-time electricity usage, including appliance usage and associated costs. Giving consumers more information about the electricity usage would allow them to change their usage pattern and minimise their electricity bill, if their retailer offers differential pricing. As more variable generation enters the electricity system, tariffs could also be used to signal the value for the use and export of electricity by time and increasingly locations. Smart meters is a key enabler for these new tariff arrangements.

## 4.2 Stakeholders consider smart meters could enable additional services

### 4.2.1 Stakeholder views

The Commission's ongoing discussions with stakeholders, submissions to metering related rule changes, and submissions to reforms being progressed by the Commission and other regulatory bodies indicate that only a small fraction of the potential (and current) capabilities of smart meters are being used. The general sentiment amongst stakeholders is that smart meters and smart meter data is being underutilised in the NEM.

Stakeholders suggested that smart meters could be used to facilitate the following:

- use of data for apps to provide real time visibility to consumers of their energy usage
- improved billing arrangements, including pay-as-you-go arrangements
- monitoring of safety issues such as neutrality and cross-polarity
- providing visibility of the LV network, including power quality and network and outage notification information
- system security functions
- optimisation of controlled load for hot water
- demand management
- optimisation of generation and storage from DER
- utilisation of electric vehicles for energy storage
- improved integration of renewable energy sources
- virtual power plants (VPP)
- research and market planning.

Although some of the above services are being provided in a limited capacity, most are not widely utilised. This may in part be due to a slower than anticipated roll out of smart meters and the market for related services subsequently developing at a slower rate.

One of the key benefits anticipated from the metering reforms was remote services. Generally retailers have not been able to utilise remote re-energisation or de-energisation features of smart meters in all jurisdictions, with a prohibition on remote re-energisation and de-energisation remaining in Queensland, and only allowed in New South Wales from 1 October 2020. The Commission understands that stakeholders would like remote re-energisation and de-energisation to be allowed across the NEM, with harmonised conditions.

In relation to some of the other services DNSPs would like to access via smart meters, Energy Networks Australia (ENA) and ENEA Consulting released *Data opportunities for smarter networks* in October 2020. In the report, ENA and ENEA were of the view that data is key for improving network management and operations and increasing efficiency. They were of the view that smart meter data could be used to improve the management of LV networks, particularly as DER penetration increases. ENA and ENEA considered that this data would be most useful if it were to be able to be accessed in real-time. Further utilisation of data between DNSPs, technology developers and researchers, governments and peak bodies was seen to be key in the realisation of benefits for both DNSPs and consumers.<sup>48</sup>

#### 4.2.2 **Jurisdictional regulators have also investigated the benefits and uses of smart meters**

Along with future work being undertaken by the market bodies and energy regulators, there have been a couple of reviews of smart meters carried out since the competition in metering reforms in 2015. Both the Queensland Competition Authority (QCA) and IPART have carried out reviews into the benefits of, and barriers to, smart metering. IPART's review is discussed in more detail in Chapter 3.

In its 2019 Ministerial advice *Benefits of advanced digital metering* the Queensland Competition Authority (QCA) examined the benefits of smart meters, and how they could be better utilised in the future. The QCA considered that the benefits of smart meters could include:<sup>49</sup>

- better information to help consumers manage bills
- more tariff options for consumers
- more accurate and frequent bills
- lower network costs
- quicker retailer transfers
- remote energisation and deenergisation
- improved service delivery by networks
- reduced electricity theft and
- reduced greenhouse gas emissions.

The QCA considered that there are a number of barriers to realising the benefits from smart meters, faced by consumers and retailers. However, the QCA was of the view that the use of smart meters in more detailed data gathering would provide for greater understanding, and

<sup>48</sup> , ENA and ENEA, *Data opportunities for smarter networks*, October 2020.

<sup>49</sup> QCA, *Benefits of advanced digital metering*, August 2018.

more efficient usage of resources to lower costs. For this to be realised, the QCA considered that technologies which are able to actively respond to this data, or to other inputs would be key (for example home energy management systems), particularly if they enable automatic management of consumption without customers having to constantly monitor their demand and manually manage their services.<sup>50</sup>

### 4.2.3

#### Overseas experience

Smart meters have been rolled out in countries across Europe, in the United Kingdom, New Zealand, Canada, China and parts of the United States amongst others. The penetration of smart meters varies between and within countries, as does the uses of smart meter and smart meter data. The use of smart meters internationally may provide insights into the potential future uses in the NEM.

##### United Kingdom

In the United Kingdom (UK), smart meters are being rolled out and energy suppliers are required to aim to install a smart meter, however, consumers can refuse the installation. One of the key drivers of the smart meter roll out in the UK is to open the gas and electricity markets to new sources of flexibility and new ways in which consumers can engage with the market. The installation of a smart meter includes an in-home display which shows a customer the cost of their energy usage. With the addition of the in-home display consumers are able to see (near) real-time information which enables them to have better control over their energy usage.<sup>51</sup> Another benefit of smart meters in the UK is that consumers who have a prepaid electricity meter are able to see the remaining balance, and are able to pay in new ways compared to the old prepayment meters.<sup>52</sup>

##### New Zealand

Like in other jurisdictions, in New Zealand the roll out focuses on the benefits for consumers, particularly more accurate billing and easier forecasting of future usage. While the market has delivered a market-led roll out of smart meters, the standards, installation, testing, accuracy, reading and data security requirements of the meters are regulated by the Electricity Authority.<sup>53</sup>

##### The European Union

The European Union (EU) considers smart meter rollouts to be a necessary step in their smart grid development citing benefits to both consumers and the network more broadly. Smart meters are seen to have benefits including more increased consumer control over their energy consumption, accurate billing, a reduction in power theft and fraud, and a reduction

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50 Ibid.

51 <https://www.ofgem.gov.uk/electricity/retail-market/metering/transition-smart-meters>

52 Ibid.

53 <https://www.ea.govt.nz/consumers/what-are-electricity-meters/>



in peak demand. There is no EU-wide consensus yet on the minimum range of operations required by smart meters.<sup>54</sup>

### Canada

In Canada over 82% of electricity meters are smart meters, with smart meters are seen as a key component for investment in renewable energy, the deployment of smart grid technologies and increase in decentralised renewable energy. Digitisation is seen as necessary to enable the operation of a bidirectional electricity grid, provide advanced protection and tools which can benefit customers, with smart meters being utilised in different ways across each Province.<sup>55</sup>

#### QUESTION 10: FUTURE METERING SERVICES

1. What is your understanding of other services that smart meters can provide?
2. What future services do you expect or want metering to facilitate?
3. If additional services are to be provided by smart meters, how should the costs of providing these services be allocated?

## 4.3

### Smart meter penetration is key to providing more services

In order to provide many of the additional services that stakeholders identified above, as well as to provide the services required under key reforms, the number of smart meters likely needs to increase both to improve economies of scale for metering services, and to provide meaningful data. As noted by the Commission in the 2019 *Electricity network economic regulatory framework review*, "smart meters need to exist in order to extract value from them".<sup>56</sup>

In June 2020, the penetration of smart meters in the NEM, excluding Victoria, is around 17.4 percent. It is likely that economies for scale are not achieved for many of the possible metering services at these levels. This appears to be reflected in the bespoke nature of much of the metering and meter data services being provided outside of the minimum technical specification in the NEM currently.

The Commission understands that to provide meaningful data, it is not just the overall number or smart meters which is important, but also where those smart meters are located. For example, a dispersion of smart meters, rather than smart meters grouped locally, is important to enable smart meters to be able to provide useful data on the low voltage electricity network.

54 <https://ses.jrc.ec.europa.eu/smart-metering-deployment-european-union#:~:text=Member%20States%20are%20required%20to,in%20the%20Third%20Energy%20Package.&text=By%202020%2C%20it%20is%20expected,will%20have%20one%20for%20gas.>

55 Natural Resources Canada, *Smart grid in Canada*, April 2019, pp. 16, 53.

56 AEMC, *Electricity network economic regulatory framework review*, 26 September 2019.

International roll out strategies of smart meters, and the penetration of smart meters differs. For example, in the UK, the rollout is led by the energy suppliers who are responsible for the metering equipment and the in-home display with regulatory oversight and compliance through the Office of Gas and Electricity Markets. Around 31% of consumers in the UK have a smart meters in smart mode.<sup>57</sup> In contrast, in New Zealand as at 30 September 2020, 1,649,148 smart meters have been installed into residential homes,<sup>58</sup> which is 89% of all New Zealand residential connections. The roll out does not charge consumers with retailers instead entering into agreements with Meter Equipment Providers who charge them for the use and maintenance of the meter at the property with the retailer absorbing most of these costs.<sup>59</sup> In the EU where there has been mandatory roll outs of smart meters penetration rates are as high as over 99% in Italy and 98% in Finland.<sup>60</sup>

The review will consider whether the penetration and location of smart meters is key to the provision of metering services, and to the extent that it impacts each type of metering or meter data service.

#### **QUESTION 11: PENETRATION OF SMART METERS REQUIRED**

1. Are particular metering services only cost effective when a particular penetration is achieved? If so, what services and what penetration is required?
2. What other factors are important in determining whether the provision of particular services are efficient or effective (e.g. geographic spread)?

57 Department for Business, Energy and Industrial Standards, *Smart meter statistics in Great Britain: Quarterly report to end June 2020*, 27 August 2020.

58 [https://www.emi.ea.govt.nz/Retail/Reports/AWNGPD?MarketSegment=Res&\\_si=\\_dr\\_MarketSegment|Res,\\_dr\\_DateTo|20200930,v|4](https://www.emi.ea.govt.nz/Retail/Reports/AWNGPD?MarketSegment=Res&_si=_dr_MarketSegment|Res,_dr_DateTo|20200930,v|4)

59 [https://www.eranz.org.nz/fileadmin/user\\_upload/Smart\\_meters\\_summary\\_-\\_update\\_July\\_2017.pdf](https://www.eranz.org.nz/fileadmin/user_upload/Smart_meters_summary_-_update_July_2017.pdf)

60 <https://utilityweek.co.uk/smart-meters-italian-way/>; and <https://www.cambridgenetwork.co.uk/news/landisgyr-in-finland-excels-as-smart-metering-front-runner>

## 5 ARE CHANGES REQUIRED TO THE REGULATORY FRAMEWORK?

The *Competition in metering* rule introduced significant changes on how metering services are provided in the NEM. As discussed in previous chapters of this consultation paper, many stakeholders consider that the pace of the smart meter rollout is slower than expected. Where smart meters have been installed, the type of services that were expected to be provided are also less than expected. There had also been implementation issues, especially in relation to installation delays, as shown through ombudsmen and AER complaints data. Reviews conducted by jurisdictional regulators such as IPART have identified industry cooperation as an issue.

This chapter sets out some of the issues in relation to the regulatory framework for metering services - identified through discussions with stakeholders. The Commission also seeks feedback from stakeholder on changes to the regulatory framework that they consider are required to improve outcomes for consumers as well as the industry as a whole.

### 5.1 Smart meters remains a key enabler of electricity sector transformation

The benefits of smart meter adoption have been addressed in a number of publications by the Commission and continue to be relevant.<sup>61</sup> These include providing data to consumers in a more immediate way to allow them to actively manage their electricity usage, whether that be through smart appliances, applications or new and emerging services, more ways for consumers to actively budget for electricity, and providing regulators and network providers with more immediate and granular understanding of changes to system services.

As discussed in Chapter 3, the Commission's *2019 Economic regulatory framework review* as well as the DEIP Access and Pricing Working Group's *Outcomes Report* considered that a high penetration of smart meters are required to support energy market transition.

Smart meters are key to enabling emerging technologies and future services and innovations. As noted in Chapter 1, many of the ESB's post 2025 Market Design rely on greater smart meter deployment, especially for the two-sided market and DER integration. These projects would allow consumers to actively participate in the NEM through their smart meters.

The rapid expansion of DER, and the associated use of smart meters, at a small and large consumer level also opens up opportunities for consumers to participate in new and emerging services and innovations such as virtual power plants through collective engagements.

As well as increasing opportunities to engage in the market, smart meters open up innovative opportunities for data sharing and access. For instance, some consumers may be interested in controlling their appliances through a mobile application or hub based service to take

<sup>61</sup> Power of Choice Review 2012 and AEMC *Expanding competition in metering and related services*, Final determination, 26 November 2015.

advantage of low wholesale prices. Data could also be aggregated much faster allowing regulators to design more targeted policy.

However, the above benefits could only be realised if there are sufficiently high penetration of smart meters. Greater smart meter adoption would provide significant benefits to all parts of the electricity sector beyond the benefits contemplated initially under the *Competition in metering* rule. The Commission is interested in stakeholder feedback on the most efficient way to encourage increased smart meter uptake to support future services and innovations.

#### **QUESTION 12: ENCOURAGING THE ADOPTION OF SMART METERS AND FUTURE SERVICES**

1. Is the current regulatory framework appropriate for the current needs of metering and the market? Is it flexible enough to provide encouragement for the development of future services in metering ?
2. To encourage higher adoption of smart meters:
  - a. What changes, if any, need to be made to the current regulatory framework for future services?
  - b. What changes, if any, need to be made to other instruments? (e.g. regulatory instruments, guidelines, codes)
3. Are there other avenues of encouragement that are available that the Commission has not considered in this paper?

## **5.2 Issues and barriers to the realisation of smart meter benefits**

As discussed in previous chapters, smart meter rollout has been slower than expected following the introduction of *Competition in metering*. Through initial discussions with stakeholders, the Commission has identified barriers that related to the physical installation as well as barriers that prevent some services to be provided. This section examines these barriers.

### **5.2.1 There are barriers to smart meter rollouts**

As discussed in Chapter 2, most smart meter installations are as the result of customer request (most commonly following the installation of solar PV), or the result of a new connection. Initial discussions with stakeholders highlighted to the Commission that the rollout is generally occurring at a slower rate than anticipated. This is largely due to the smaller than expected rate of retailer-led rollouts, and meter malfunctions including family failures.

#### **Retailer led rollouts**

There was some expectation that the *Competition in metering* rule change would lead to a number of retailer-led smart meter rollout programs. Through initial consultation with retailers the Commission understands that retailers have been deterred by the customer opt-

out provisions under the Rules. Under clause 59A of the NERR, retailers are required to provide multiple notices to small customers to allow the customer to opt out of receiving a new smart meter. Retailers have suggested that a requirement to provide consumers with multiple notices, ten business days apart is onerous. Further, in situations where customers share a fuse or there are multiple meters on a meter panel in multi-occupancy situations (discussed further below), these obligations restrict a retailer's ability to conduct an efficient rollout program.

Further, then a new smart meter is installed consumers or retailers pay the up front cost for the smart meter and its installation. Once the DNSP's analogue or interval meter has been replaced by a smart meter, the ongoing capital contribution charge is payable to the DNSP. The issue of cost allocation and continued cost recovery is an area that the Commission intends to examine in the review.

### **Meter malfunctions**

The Commission understands that the number of meters which are failing testing or malfunctioning, particularly in relation to family failure is lower than many stakeholders anticipated. Some MCs have indicated that they anticipated a greater volume of meter replacement due to family failure. For example, in its submission to the ESB's Post 2025 Market Design consultation paper, Vector indicated that, based on the asset life of the existing meter base, they would have expected the replacement of around 200,000 meters per annum due to meter malfunction and family failure. However, Vector indicated that this expectation had not been met, with only approximately one third of that number being replaced due to failure.<sup>62</sup>

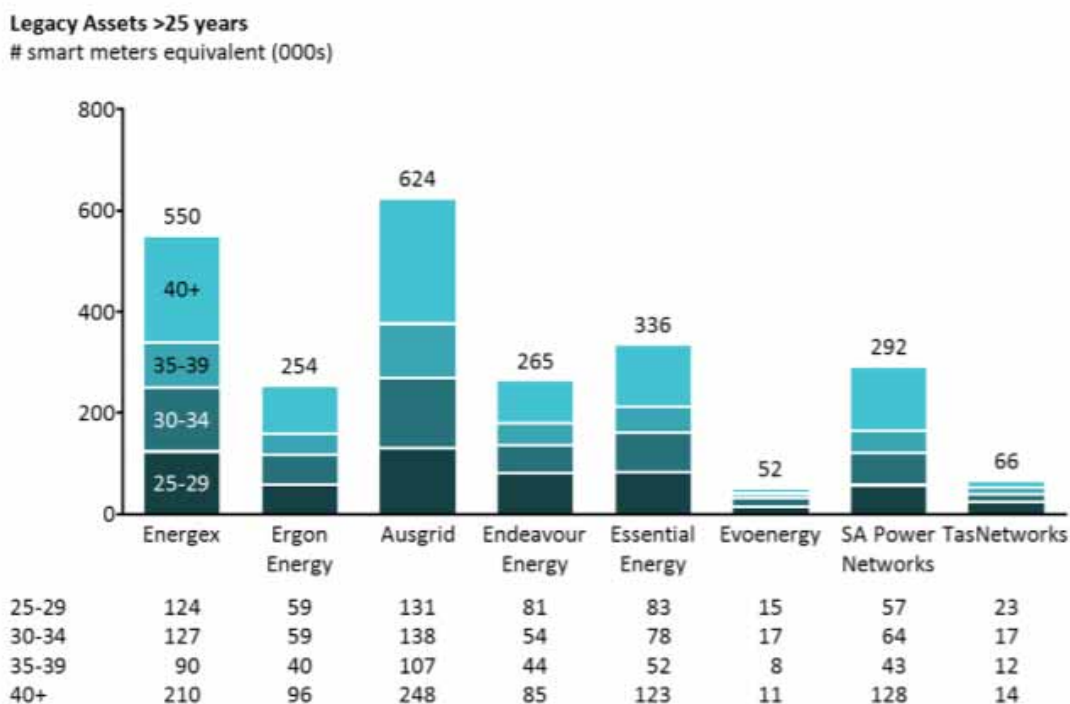
Similarly, in its submission to the South Australian consultation on regulatory changes for smarter homes, Intellihub was of the view that analogue meters are being retained well beyond their asset lives, and that intervention is required to help realise the full benefits of smart meters. In its submission, Intellihub included the below table indicating the approximate numbers of smart meters in each jurisdiction which are over 25 years old. The source of this information was not provided.<sup>63</sup>

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<sup>62</sup> Vector, submission to the ESB's Post 2025 Market Design Consultation Paper, 9 October 2020, paragraph 18.

<sup>63</sup> Intellihub, submission to South Australia's Consultation on regulatory changes for smarter homes, p. 7.

**Figure 5.1:** Intellihub’s chart indicating the number of meters greater than 25 years old



Source: Intellihub, submission to South Australia’s Consultation on regulatory changes for smarter homes, p. 7.

### 5.2.2 There are physical barriers to meter installation

During the *Introduction of metering coordinator planned interruptions* rule change, the Commission received feedback from a number of stakeholders regarding the physical barriers they were facing when installing metering. Stakeholders expressed concerns with the number of instances in which installation barriers were encountered, and their inability to resolve many of the underlying issues. These barriers could affect both the rate of rollout and consumer experiences with metering.

The most cited issues include:

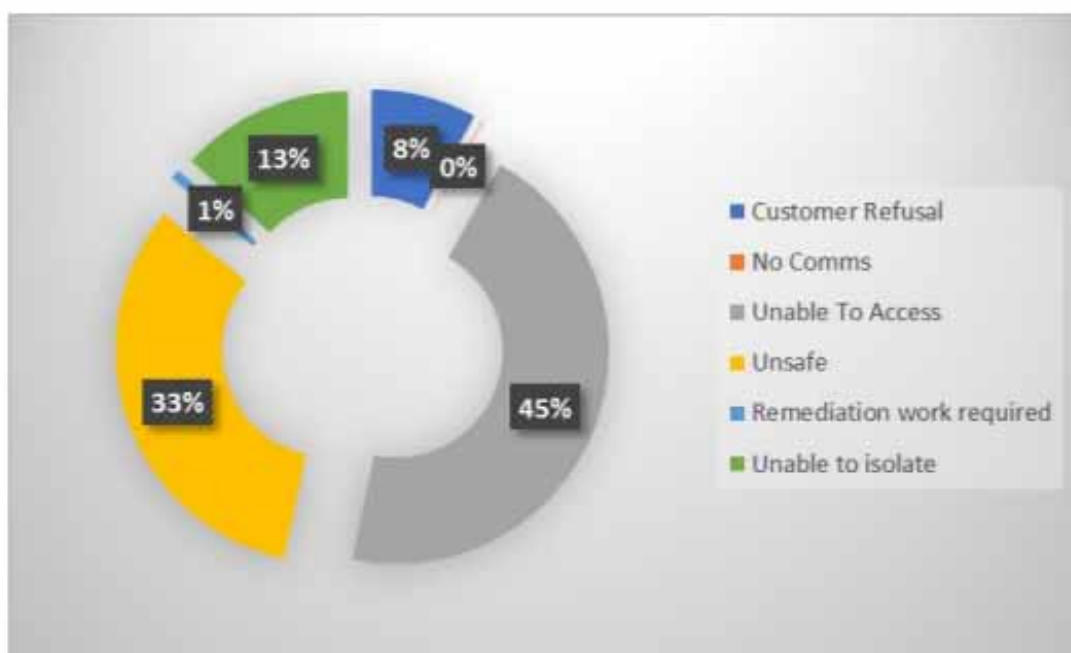
- shared fusing arrangements
- inability to operate the supply isolation
- inability to access the site (e.g. locked gates or dogs)
- asbestos on the meter board
- insufficient space on meter board
- other meter board defects which require additional work
- coordination of site visits where multiple parties are required
- consumer refusal.

In its submission, AGL cited the most common reasons it found for installation failures was an inability to access the site, followed by safety and isolation issues.<sup>64</sup> Similarly, Vector noted isolation issues as one of the key causes of meter installation failures, followed by customer side defects.<sup>65</sup> Simply Energy, noted that there are issues with meter installation process for multi-occupancies, where meter panel replacement is required to accommodate the installation of smart meters.

Simply Energy considered that the installation of smart meters at a multi-occupancy should be done at the one time, and the cost of the meter panel replacement addressed at that time. Currently, a number of smart meters may be able to be installed on the meter panel, only for the space to be inadequate for the installation of further meters, at which time the panel must be replaced and existing meters reinstalled.<sup>66</sup>

Additionally, there are more simple issues that have been cited included locked electricity rooms or metering boxes which can sometimes require consumers to engage with their distribution service to obtain.

**Figure 5.2:** Reasons a meter was unable to be installed for AGL from February to June 2019



Source: AGL, *Aresponse to project reference code ERC0275*, 10 October 2019, p. 3.

<sup>64</sup> AGL, *AGL response to project reference code ERC0275*, 10 October 2019, p. 3.

<sup>65</sup> Vector, *submission on the Introduction of metering coordinator planned interruptions*, 19 October 2019, p. 7.

<sup>66</sup> Simply Energy, *Introduction of metering coordinator planned interruptions rule change proposal submission*, 10 October 2019, p. 2.

Figure 5.3: Reasons a meter was unable to be installed for Vector

% Row Labels	Column Labels		
	NSW	QLD	SA
Successful Installation	78.18%	95.45%	83.92%
UnSuccessful	21.82%	4.55%	16.08%
Customer Side Defect	8.31%	2.28%	5.53%
Isolation Issue	13.51%	2.27%	10.55%
ASP/DB isolation required	2.79%	0.01%	
No operable isolation point available	5.68%	0.77%	5.33%
Shared Fuse	5.04%	1.49%	5.22%
Shared Fuse (< 9 other meters)	1.68%	0.67%	3.48%
Shared Fuse (> 9 other meters)	1.12%	0.61%	1.37%
Shared Fuse with 1 other site	2.24%	0.21%	0.38%
<b>Grand Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

Source: Vector, *Submission on the introduction of metering coordinator planned interruptions*, 19 October 2019, p.7.

Physical barriers like those cited by the stakeholders above can lead to complex arrangements between retailers, metering coordinators and consumers, illustrated in the cost breakdown below.

#### BOX 1: COSTS OF INSTALLING SMART METERS IN COMPLEX SCENARIOS

Table 5.1: Summary of individual installation costs of splitting a shared fuse

LINE ITEM	FEE (EX GST)
Typical installation — good condition board that requires installation of isolators only	\$450 — \$1600
Basic remedial works — basic rewiring, meter remounting, and/or small modifications	\$220 — \$440 on top of a typical installation
Complete board replacement — new switchboard of varying size and number of meters	\$1800 — \$12,000 depending on size and complexity

Source: ARUP, *Report for the AEMC meter coordinator planned interruptions rule change request advice review of proposal for DNSPs to install isolation devices for shared fuse metering*, 1 June 2020, p.22.



### 5.2.3

#### There are barriers to the provision of metering services

##### Access to data

Currently, access to the data provided through the smart meters is not readily available to all stakeholders. This could be seen as a particular barrier to meeting consumer expectations as well as improvements in to system services.

The Commission notes that there are other data specific projects that will also give consumers greater control over their data such as the Consumer Data Rights, however this will not necessarily realise the benefit of better real-time information, and access to information, to consumption to allow consumers to control and manage their consumption expected from *Competition in metering*. Further, greater access to data could lead to greater incentives on consumers and other stakeholders to adopt future energy services.

##### Overlapping jurisdictional regulations

Stakeholders have informed the Commission that in addition to the NER there are a number of other governance bodies and jurisdictional regulators that have overlapping or related regulations that affect metering. The regulation generally addresses safety issues, specifically remote metering services such as re-energisation and de-energisation or properties.

Some of the regulatory arrangements that have been cited include:

- **Jurisdictional moratoriums or prohibitions on remote re-energisation and de-energisation** — Until recently a number of states had prohibited remote services to take place through a metering services due to safety concerns including Queensland.<sup>67</sup> While a number of jurisdictions have updated their legislation to allow re-energisation and de-energisation, it is not consistent NEM wide and impacts the incentives for market participants to install smart meters. As part of the Queensland Competition Authority, Ministerial advice on benefits of advanced digital metering report, retailers noted that they were able to provide a higher level of service to consumers in jurisdictions that allowed remote energisation.<sup>68</sup>
- **NSW ASP scheme** — the IPART review of Retailer's metering practices in NSW identified that some aspects of the current ASP scheme in NSW limit the MP role in that jurisdiction can lead to delays in installations.<sup>69</sup> The review found "[t]he Workplace Health and Safety Regulation 2017 and Code for safe installation of direct-connected whole current electricity metering in NSW restrict non-ASP metering technicians from performing all metering-related work that may be required to install a customer's meter, which is inefficient and causes delays."<sup>70</sup>

67 s220, Electrical Safety Regulation 2013 (QLD).

68 Queensland Competition Authority, *Ministerial advice - benefits of advanced digital metering*, September 2019, p.v

69 IPART, *Retailer's metering practices in NSW final report*, November 2018, p.7

70 Ibid, p.21

**QUESTION 13: BARRIERS TO REALISING THE BENEFITS OF SMART METERS**

1. Are there other barriers that were not identified by the Commission that you have found to prevent the realisation of benefits of smart meters and/or slowed the rollout of smart meters in the NEM?
2. What changes, if any, need to be made to the current regulatory framework for current arrangements to improve deployment?
3. Are there other tools outside of the regulatory framework that may address some of the current barriers to realising the benefits of smart meters and/or the slower rollout of smart meters in the NEM?

## ABBREVIATIONS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Commission	See AEMC
DIEP	Distributed Energy Integration Program
DER	Distributed energy resources
DNSP	Distribution network service provider
ENA	Energy Networks Australia
ESB	Energy Security Board
EU	European Union
EWON	Energy and Water Ombudsman of New South Wales
EWOSA	Energy and Water Ombudsman of South Australia
IPART	Independent Planning and Regulatory Tribunal
LV	Low voltage
MC	Metering coordinator
MDIs	Market Design Initiatives
MDP	Metering data provider
MP	Metering provider
MSATS	Market Settlement and Transfer Solutions
NEL	National Electricity Law
NEM	National electricity market
NEO	National electricity objective
NERL	National Energy Retail Law
NERO	National energy retail objective
NER	National electricity rules
NERR	National energy retail rules
NMI	National meter identifier
NSW	New South Wales
PV	Photovoltaic
QCA	Queensland Competition Authority
UK	United Kingdom
VPP	Virtual power plant