



Australian Energy Market Commission

CONSULTATION PAPER

Multiple Trading Relationships Rule 2015

Rule Proponent

AEMO

30 July 2015

**RULE
CHANGE**

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About the AEMC

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

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Summary

On 17 December 2014 the Australian Energy Market Operator (AEMO) submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission) that is designed to facilitate multiple trading relationships (MTR) at a single site.

MTR refers to arrangements where a customer engages with multiple energy providers at their premises. This could include arrangements such as a customer engaging with one retailer for general supply and another retailer for supply of energy to a specific appliance, such as an air conditioning unit or electric vehicle. AEMO argued that allowing these kinds of arrangements may foster competition in the electricity retail market and the delivery of more innovative products for consumers.¹

The assessment of AEMO's rule change will include consideration of the following key areas:

- **Services facilitated by MTR:** MTR may facilitate new energy services for consumers. This may enhance competition in retail markets and drive more efficient outcomes along the energy supply chain.
- **Enabling an MTR framework:** There may be significant costs associated with the establishment of different regulatory frameworks to enable MTR. Some of these costs may be borne by individual customers, including the costs of installing a second meter, in house wiring and charges levied by both electricians and distribution network service providers (DNSPs). Market participants may also face substantial costs related to adapting their IT, operational and billing systems to accommodate AEMO's proposed MTR framework. These costs must be considered in the context of the new services and efficiency benefits potentially provided by MTR.
- **Operation of MTR:** A number of important operational and consumer protection matters will need to be addressed to enable AEMO's proposed MTR framework. These matters will require changes to the NER and NERR and include customer classification, disconnection processes, and communication processes where life support equipment is present at a premises. Some of these issues could have significant implications for customers that adopt MTR arrangements. Addressing these various operational matters may also impose costs on participants to adapt systems and processes.
- **Implementation of MTR:** There are interactions between the implementation of MTR and other market reform projects currently being considered by the AEMC and other market institutions. Implementation of MTR may require subsequent

¹ Throughout this document, the term customer and consumer will be used interchangeably. "Customer" is a term defined under the National Electricity Retail Rules (NERR), with further subcategories; in this consultation paper, the term customer is used as appropriate when it is necessary to refer to these categories.

changes to be made by AEMO to its procedures, and by governments to jurisdictional documents such as retail codes.

This consultation paper has been prepared to facilitate public consultation on AEMO's rule change request. It provides some discussion of the issues explained above and invites stakeholders to answer a number of related questions. As the Commission continues its assessment of this rule change request, stakeholders will be given further opportunities to comment on any detailed policy proposals.

The Commission engaged KPMG and Energeia to provide some initial advice on the range of services that may be enabled by MTR and the costs associated with enabling MTR under current arrangements. These reports are intended to inform stakeholder discussion regarding AEMO's rule change request and have been published on the AEMC's website.

AEMO's rule change request has emerged from recommendations made in the AEMC's Energy Market Arrangements for Electric and Natural Gas Vehicles review (the EV review) and the Power of choice review, which were completed in 2012. The Commission notes that market conditions have changed since that time and new information regarding the potential costs and benefits of MTR have become available. AEMO's rule change request will be considered in the context of current market conditions and information. This will inform the Commission's assessment of whether to make a rule in response to AEMO's rule change request.

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1 Background

Most customers, particularly small customers, have one physical connection for their premises to the electricity network.² Under the existing NER and NERR frameworks, this point of physical connection is the same point at which the energy for the customer's premises is metered. This metered energy is then used to determine the liability of a financially responsible market participant (FRMP) for the energy consumed at the premises.³

This one-to-one relationship means that most customers engage with one FRMP at a premises.

The concept of customers engaging with more than one FRMP at a premises was examined by the AEMC in the 2012 Energy Market Arrangements for Electric and Natural Gas Vehicles review (the EV Review). The AEMC found that allowing consumers to establish multiple trading relationships (MTR) with different FRMPs at a premises could enhance choice and facilitate more efficient outcomes in retail markets.

This chapter provides further description of what comprises MTR, and provides an overview of the AEMC's and AEMO's previous work in developing MTR. A short summary of relevant current projects is also provided, with more information available in Appendix A and on the AEMC website.

1.1 What are multiple trading relationships?

A consumer may wish to enter into multiple trading relationships with different FRMPs for the provision of various energy services at a premises. These services could take many forms, including a consumer engaging:

- different FRMPs for supply of energy to different portions of the premises, such as a granny flat, a specific appliance or an electric vehicle;
- one FRMP for supply of energy to the premises, and another for purchase of energy from embedded generation such as solar PV at the same premises; or
- a community energy scheme, registered as a FRMP, which provides the bulk of a consumer's supply, with backup provided by a second FRMP such as a retailer.

Section 4.1 provides a more detailed description of some of the energy service business models that may utilise MTR.

² Customer classes are defined in the National Energy Retail Law (NERL) and NERR. All residential customers are small customers.

³ A FRMP may be a number of different types of market participant, including a retailer. For most small customers, the FRMP at its premises is a retailer. In this consultation paper the term FRMP is generally used, as MTR may enable consumers to engage with FRMPs other than retailers.

In order for a consumer to enter into multiple trading relationships at a premises, it is necessary to separately measure the energy supplied or purchased by each FRMP. This means that at least two measurement devices are needed at the premises, to measure the energy for each FRMP.⁴ These meters can be arranged in different configurations, including subtractive, net and parallel configurations. Each of these different configurations may be particularly applicable to different energy service models. For example, as discussed in section 1.2, subtractive metering configurations may be applicable to supporting an electric vehicle energy service model.

The AEMC intends to take a broad view as to what arrangements are included under the general heading of MTR. For the purposes of this consultation paper, the AEMC therefore defines MTR as any arrangement where a consumer engages with more than one FRMP at its premises.

1.2 Previous relevant projects

AEMO's rule change request follows two projects that explored the concept of MTR:

- the AEMC's Energy Market Arrangements for Electric and Natural Gas Vehicles review; and
- AEMO's High Level MTR design.

The key proposals made in AEMO's rule change request are based on the findings and recommendations made in these projects. A brief overview is provided below, with further information in Appendix A.

Market conditions have changed since these projects were completed and new information has become available about the relative costs and benefits of MTR. The Commission intends to assess AEMO's rule change request in light of these changes and new information. Stakeholders are invited to comment on whether these changed market conditions are relevant to the potential benefits and costs of MTR.

1.2.1 Energy Market Arrangements for Electric and Natural Gas Vehicles

The AEMC conducted its Energy market arrangements for electric and natural gas vehicles review (the EV review) in tandem with the Power of Choice review. These reviews explored how households, businesses and industry could be provided with more choice about the way they use electricity.

The EV review considered how metering arrangements could enhance consumer choice and facilitate efficient use of electricity, with a particular focus on electric vehicles. A key recommendation was that a consumer should be able to engage with a

⁴ These measurement devices could be separate meters, or separate measurement elements in a single meter. A more detailed description of metering arrangements and configurations is provided in Appendix B.

different FRMP at its premises for specific portions of its load, without having to establish a second connection point.

It was therefore proposed that the concept of a connection point should be separated from the point at which energy was measured for market settlement. To do so, the existing NER defined term "connection point" would refer only to the physical connection to the power system. The new NER defined term "settlement point" would refer to the point at which energy metering and financial settlement occurred. This would allow a consumer to engage with a different FRMP for different portions of its load, without having to establish a second connection point.

The EV Review also noted that different metering configurations to enable MTR might create different costs for consumers.⁵ For example, by using a subtractive metering arrangement, consumers would not have to install a second metering installation at the mains switchboard. Betterplace, an electric vehicle provider, suggested this could provide consumers with savings of between \$1,000 and \$8,000.⁶

A more detailed summary of the relevant recommendations of the EV review is provided in Appendix A. A brief summary of the various costs faced by customers seeking to enable MTR is provided in section 4.2.2.

1.2.2 AEMO's high level MTR design

Following completion of the EV Review, AEMO was requested by the Standing Council on Energy and Resources (SCER, now the COAG Energy Council) to develop a plan for the design and implementation of MTR at a site. AEMO was also directed to develop a design to improve metering and other arrangements in embedded networks.⁷

AEMO's high level MTR design identified several issues related to MTR. Two of the key issues identified are discussed below:⁸

- **Process for disconnection:** MTR may enable different FRMPs to be active at a premises. Under some metering configurations, the disconnection of a settlement point by one FRMP could result in the disconnection of another settlement point belonging to a different FRMP. AEMO's high level MTR design recommended

⁵ A more detailed explanation of potential metering configurations that could be used to enable MTR is provided in Appendix A.

⁶ The Commission did not verify these cost estimates. More information is available in Betterplace's submission to the Approach paper for the EV review, available at <http://www.aemc.gov.au/getattachment/22797ce1-ae7e-4fc6-aa26-babcadc60312/better-place.aspx>.

⁷ AEMO's final design for embedded networks is described in a separate document which has informed the Embedded Networks rule change request. For more information see: <http://www.aemc.gov.au/Rule-Changes/Embedded-Networks>

⁸ These issues, and the solutions proposed by AEMO, are relevant to the AEMC's assessment of AEMO's rule change request. A more detailed summary of the relevant recommendations of AEMO's high level MTR design is provided in Appendix A.

that all settlement points at a premises with MTR must be capable of independent disconnection, with any exceptions determined through specific processes.

- **Allocation of distribution use of system (DUOS) charges:** Currently, all DUOS charges at a premises are allocated to the FRMP for that premises. Under MTR, processes would be needed to allocate DUOS across multiple FRMPs at a premises. AEMO's high level MTR design recommended that fixed DUOS charges should apply by default to only one settlement point at a premises, unless another allocation methodology was agreed between the DNSP and the customer.

AEMO engaged Jacobs SKM to undertake a cost benefit assessment of its high level MTR design.⁹ As described in Box 1.1, Jacobs SKM's analysis found that AEMO's high level MTR design returned negative benefits under most scenarios.

Box 1.1 Jacobs SKM cost benefit analysis of AEMO's Multiple Trading Relationships High Level Design

For its assessment, Jacobs SKM considered benefits such as increased competition and the development of a more service oriented retail sector, and costs including registration and setup, metering, operational management, billing and reporting. Jacob SKM's analysis included several sensitivities, reflecting different rates of uptake and implementation costs.

Overall, Jacobs SKM found that costs were greater than benefits for MTR, under most sensitivities. This reflected high implementation costs borne upfront, with slow uptake deferring benefits for around five years after implementation. Net positive benefits were identified in only one sensitivity, with high levels of uptake and low implementation costs.

Jacobs SKM noted that its findings were highly dependent on the value of specific input assumptions, such as actual implementation costs, uptake rates and demand growth. It was also noted that combined implementation of MTR and other DSP market reforms could reduce costs for MTR. Jacobs also noted that its assessment did not consider the benefits to consumers of improved energy services, nor the costs borne by customers in adopting MTR.

A more detailed summary of Jacobs SKM's analysis is provided in Appendix A.

In June 2014, the COAG Energy Council requested AEMO to develop a rule change proposal for MTR that incorporated alternative, more cost effective options while preserving the policy intent. AEMO accordingly developed the rule change request which is summarised in Chapter 2.

⁹ Jacobs SKM, *Benefits and costs of multiple trading relationships and embedded networks*, May 2014.

Question 1 Previous projects and changed market environment

- 1. Have changes in market conditions or new information since these projects were completed affected the potential benefits and costs of MTR?**
- 2. Are there additional costs and / or benefits associated with MTR that were not identified or assessed by Jacobs SKM in its analysis?**

1.3 Current relevant AEMC projects

The AEMC is currently progressing a number of projects that may be relevant to consideration of this rule change request, including:

- the Expanding competition in metering and related services rule change;
- the Embedded networks rule change; and
- the Demand response mechanism rule change.

1.3.1 Expanding Competition in Metering and Related Services rule change

On 26 March 2015 the Commission released a draft rule determination for the *Expanding Competition in Metering and Related Services* rule change (the competition in metering rule change). The draft rule determination sets out significant proposed changes to the NER and NERR in relation to the provision of metering services to facilitate a market-led approach to the deployment of advanced meters.¹⁰

The competition in metering draft rule provides for the role and responsibilities of the existing Responsible Person to be performed by a new type of registered participant: a Metering Coordinator. Under the draft rule, any person can become a metering coordinator subject to satisfying certain registration requirements. FRMPs are required to appoint the Metering Coordinator for their retail customers, except where a large customer has appointed its own Metering Coordinator. The competition in metering draft rule also changes the minimum requirements for new and replacement meters for small customers.

The competition in metering rule change may have some implications for the Commission's assessment of AEMO's rule change request. These include:

- The draft determination for the competition in metering rule change included major changes to Chapter 7 of the NER. Some of these may be relevant to the AEMC's assessment of AEMO's rule change request, particularly the proposed Metering Coordinator role. AEMO stated that the Metering Coordinator could

¹⁰ AEMC, *Draft Rule Determination National Electricity Amendment (Expanding competition in metering and related services) Rule 2015*, March 2015, p.9.

play a role in facilitating MTR, potentially reducing implementation costs. This is discussed in more detail in section 4.3.1.

- The draft determination for the competition in metering rule change also introduced a number of changes to the NERR. Some of these changes may be relevant to the AEMCs assessment of AEMO's rule change request, including changes to processes for de-energisation and re-energisation of a premises and life-support equipment notification. This is discussed in sections 4.3.6 and 4.3.7 respectively.
- The final determination of the competition in metering rule change is currently scheduled to be published in November 2015. This timing will allow the Commission to take any final rule of the competition in metering rule change into account, in considering AEMO's rule change request.
- The expected commencement date of the competition in metering rule change is 1 December 2017. If the Commission makes a rule in response to AEMO's rule change request, it is expected that any rule would not commence earlier than 1 December 2017.

1.3.2 Embedded Networks rule change

On 21 May 2015 the consultation paper for the Embedded Networks rule change was published.

This AEMO rule change request sought to clarify the responsibilities of different parties for supporting activities within embedded networks. To address these issues, AEMO proposed the introduction of a new class of market participant - an embedded network manager - to manage embedded network customers in the national electricity market (NEM).

Issues related to embedded networks were discussed as part of AEMO's high level MTR / EN design, as there are some similarities and potential overlaps between the two concepts.

The Embedded Networks rule change may be relevant to the Commission's assessment of AEMO's rule change request. There may be similarities in the changes to IT and business operational processes to implement the proposed rules relating to both embedded networks and MTR. Depending on whether a rule is made for either of these rule change requests, this may be relevant to the costs of implementing and operating MTR. This is discussed in more detail in section 4.4.

1.3.3 Demand response mechanism rule change

On 30 March 2015, the AEMC received a rule change from the COAG Energy Council to amend the NER to facilitate a demand response mechanism and the unbundling of ancillary services from the provision of energy.

The Demand Response Mechanism rule change may be relevant to the Commission's assessment of AEMO's rule change request. As with the Embedded Networks rule change, there may be similarities in changes to IT systems and operational processes needed to implement both rule changes. This is discussed in more detail in section 4.4.

2 AEMO's rule change request

This chapter provides a brief summary of AEMO's rule change request, in order to provide context to the issues raised in Chapter 5. AEMO's rule change request included a substantial amount of discussion regarding its key proposals; some of this discussion is included in the relevant sections of Chapter 5.

Stakeholders seeking more detail regarding the specifics of AEMO's proposed changes and reasoning should consider the rule change request directly. The full rule change request, including the proposed rule, AEMO's high level MTR design, and Jacobs SKM's cost benefit report are available from the AEMC's website.

2.1 Issue identified in the rule change request

In its rule change request, AEMO identified that the current NER and NERR frameworks are designed around the concepts of:

- each consumer load having a single physical connection point to the electricity network;
- each connection point being associated with:
 - one metering installation with its own national metering identifier (NMI); and
 - one FRMP.

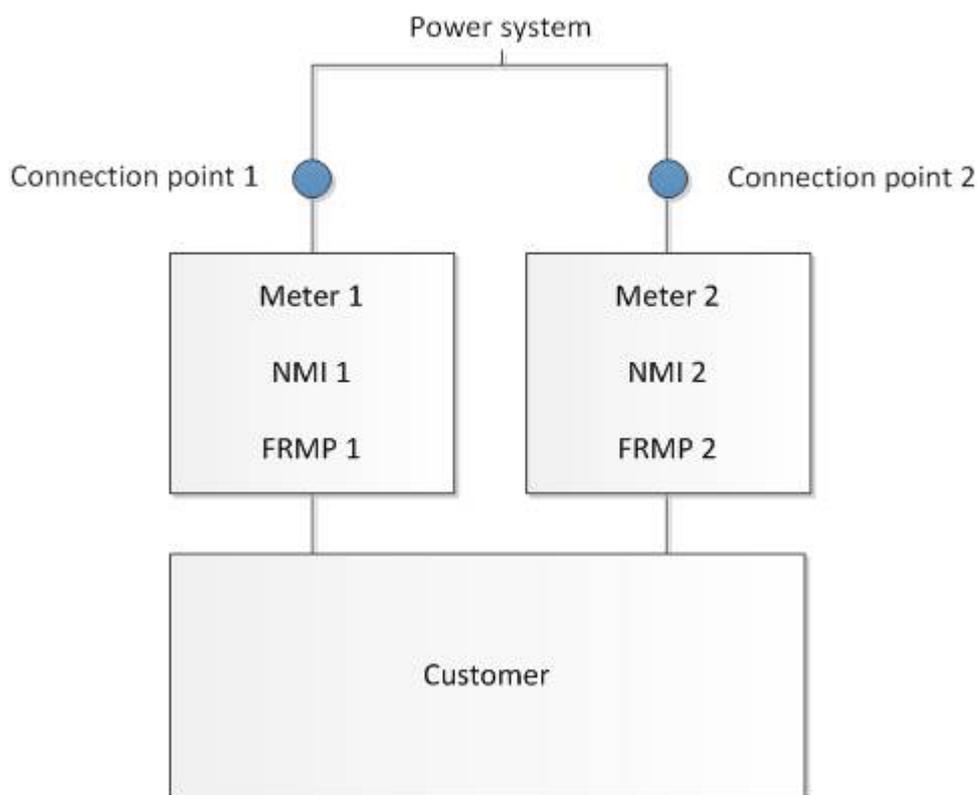
These arrangements mean there is a one-to-one relationship between the point of physical connection of a premises to the electricity network and the point at which energy is metered. This energy measured by the meter is allocated to a FRMP in market settlement. As most consumers have one connection point and one meter at their premises, the typical arrangement is for each consumer to engage with one FRMP at their premises.

Under current arrangements, the only way for a customer to engage with more than one FRMP at a premises is to establish a second connection point. However, AEMO stated that it may be costly and time consuming for customers to establish a second connection point. This may mean that in practice, establishing a second connection point may only be viable for larger customers, who may obtain larger benefits from the second connection.

AEMO also stated that there may be some degree of uncertainty as to how such multi connection point arrangements would operate in practice. For example, AEMO stated that the current NER does not describe the roles and responsibilities of a FRMP who wishes to establish a second connection point at a premises, nor for the existing FRMP or for the local network service provider (LNSP).

The current arrangement, where a consumer engages with more than one FRMP at a premises through establishing a second connection point, is illustrated in Figure 2.1. In this scenario, the relevant DNSP will allocate DUOS charges between the meters in accordance with its approved tariff structure statement (as required by the NER).

Figure 2.1 Current arrangements: one consumer, multiple connection points, meters, FRMPs and NMIs.



AEMO argued that the cost and complexity of establishing a second connection point may create barriers to new FRMPs and third parties seeking to provide new and innovative energy services to smaller customers.

2.2 Solution proposed in the rule change request

AEMO's rule change request provides a less prescriptive solution than its earlier high level MTR design. AEMO stated that its rule change request is intended to provide a general framework within which MTR can evolve and that it anticipated that matters related to "day to day operation" of MTR will be included in retail market procedures.¹¹ These procedures would be developed by AEMO following completion of the MTR rule change process.

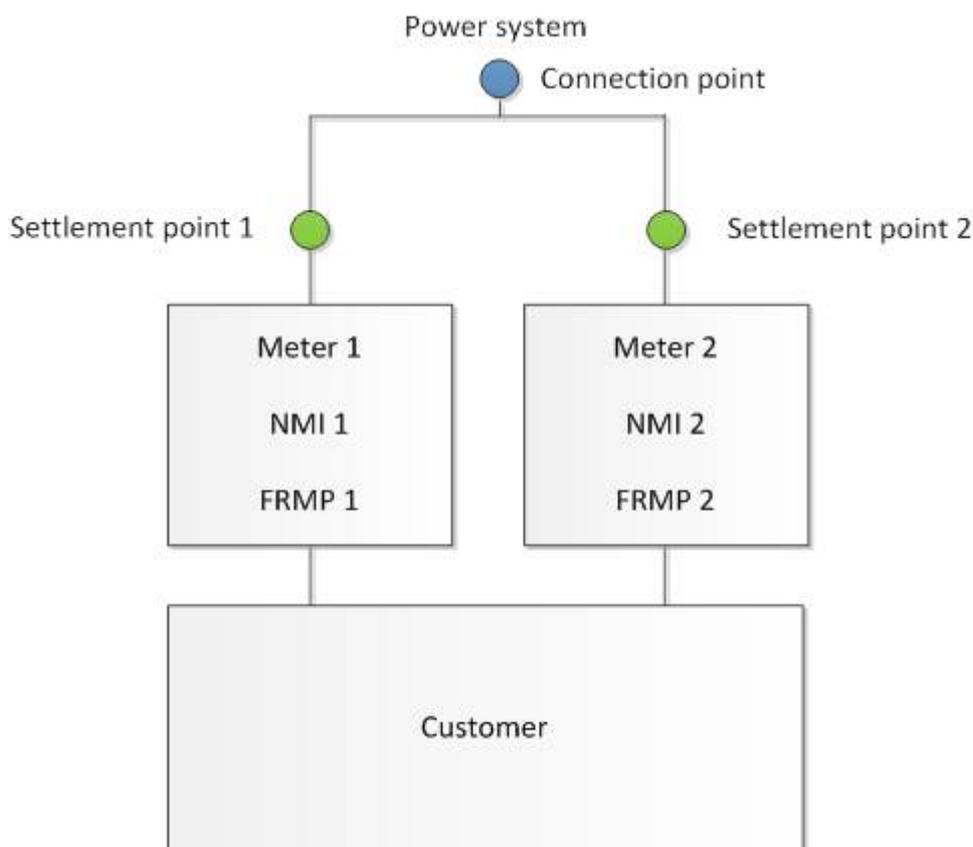
¹¹ AEMO's rule change request refers to a number of different procedures, including the metrology procedures. These procedures provide detailed technical definitions and descriptions of operational responsibilities and processes. More information is available at: <http://www.aemo.com.au/Electricity/Policies-and-Procedures/Metrology-Procedures-and-Unmetered-Loads/NEM-Metrology-Procedure>

The key NER change proposed by AEMO is to separate out the point of physical connection to the electricity network from the point at which energy measurement and financial settlement occurs, by introducing the new NER term of "settlement point". The key proposed changes included the following:

- the market settles at the settlement point, not at the connection point;
- each settlement point is associated with a metering installation;
- there can be multiple settlement points and metering installations at a premises; and
- the concept of connection point remains in the NER but refers solely to the point of physical connection to the electricity network.

One example of this arrangement is provided in Figure 2.2. In this scenario, the relevant DNSP will allocate DUOS charges between the meters in accordance with its approved tariff structure statement (as required by the NER)

Figure 2.2 AEMO proposed MTR framework: 1 connection point, 2 settlement points



While it did not contain a proposed rule, the rule change request did include some suggested drafting for a number of other changes to the NER, including amendments to:

- Chapter 10, to introduce the new term "settlement point" and related definition changes;
- Chapter 2, to amend participant classifications;
- Chapter 3, to amend various clauses related to loss factors, adjusted energy and spot market transactions; and
- Chapter 7, to amend various clauses related to metering, including obligations on market participants, shared meters, NMI creation and allocation by the local network service provider (LNSP), the location of settlement points and access to information related to a settlement point.

AEMO also highlighted some areas of the NERR that may require amendment but did not provide suggested drafting or detailed analysis of these changes. AEMO identified that the following areas of the NERR would require consideration:

- **Customer classification:** Customer classification should continue to be determined according to premises level usage and consumption, regardless of the number of settlement points at a premises. AEMO also stated that any FRMP selling energy to a customer at a settlement point at a premises should have the capability to classify or reclassify that customer's premises as a business or residential customer.
- **Shared customers:** The current NERR triangular contractual relationship between DNSPs, FRMPs and consumers should be adjusted to reflect the possibility of multiple FRMPs at a premises.
- **De-energisation:** De-energisation should occur at the level of individual settlement point, wherever possible. However, DNSPs should also be able to de-energise all settlement points at a premises, while FRMPs should be able to request de-energisation of a settlement point without any liability for subsequent de-energisation of a related settlement point.
- **Life support:** Life support should be registered at the level of the settlement point. All settlement points at a premises with life support equipment should be registered. Reciprocal notification obligations should exist between FRMPs and DNSPs at a premises with life support equipment.

AEMO also identified a number of changes to jurisdictional instruments and AEMO procedures that may need to be made following completion of any rule change to implement MTR.

2.3 How AEMO considers the proposed rule meets the NEO and NERO

AEMO stated that its proposed changes will contribute to the achievement of the national electricity objective (NEO) and the national energy retail objective (NERO) by increasing the range of competitive electricity products and services available to consumers. AEMO stated that this will enhance the ability of consumers to manage

electricity consumption and costs, increase consumer choice, encourage efficiencies, and promote innovation in energy services available to consumers.

AEMO also identified that s. 236(2)(b) of the National Electricity Retail Law requires the AEMC to satisfy itself that a rule change to the NERR is compatible with the development and application of consumer protections for small customers, including (but not limited to) protections relating to hardship customers. AEMO argued that the changes it proposed to the NERR are designed to maintain the current customer protections for small customers while delivering the benefits afforded by MTR.

3 Assessment framework

3.1 Requirements under the NEL and NERL

The Commission's assessment of this rule change request must consider whether the rule change request promotes the NEO and the NERO.

As set out under s. 7 of the National Electricity Law (NEL), the NEO is:

“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.”

As set out in s. 13 of the National Energy Retail Law (NERL), 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.””

Further to the NERO, under s. 236(2)(b) of the NERL, the AEMC must, where relevant, satisfy itself 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.”

The Commission considers that the most relevant aspects of the NEO and NERO to this rule change request are the efficient investment in, operation and use of electricity services with particular respect to the price of electricity. This includes the ability of consumers to choose, from a variety of offers, electricity services that best suit their needs. The Commission has considered both the NEO and the NERO in developing the assessment framework set out in section 4.2

3.2 Proposed assessment framework

The rule change request proposes a number of amendments to the NER and the NERR that are designed to allow multiple trading relationships at a premises. In assessing this request, the Commission will consider whether such amendments may:

- facilitate competition in the market for energy services, by encouraging new and innovative energy services and empowering consumers to make more effective decisions regarding how they use energy;

- improve the flexibility and transparency of the regulatory framework;
- are compatible with the development and application of consumer protections; and
- provide a proportional and efficient response to the issues identified.

3.2.1 Facilitate competition in the market for energy services

Competition drives efficient prices and encourages the supply of new and innovative services to consumers.

The Commission will consider whether AEMO's rule change request may facilitate entry, or the potential entry, of new energy service providers. New entry, or the threat of new entry, can help maintain competitive pressure in retail markets, delivering more efficient outcomes for consumers. AEMO's rule change request will also be assessed in terms of whether it may facilitate the provision of new, specialised and innovative energy services desired by consumers. These new services may help to unlock previously untapped value, both to individual consumers as well as to other parties along the supply chain.

3.2.2 Improve the flexibility and transparency of the regulatory framework

To allow participants to make efficient investment, operational and usage decisions, regulatory frameworks should be flexible, transparent and competitively neutral.

This is particularly important given the rapidly expanding range of new energy technologies and new energy service models that are becoming available to consumers. Transparent frameworks give consumers the confidence to engage with these new energy services, allowing them to make informed choices about their energy consumption. Regulatory frameworks should not be cumbersome or difficult to comply with, as this may impede entry of new energy service providers and innovation generally.

The Commission will assess whether AEMO's proposed framework will improve the flexibility and transparency of retail market regulatory frameworks. In particular, the Commission will consider whether AEMO's rule change request will improve certainty and facilitate more efficient decision making for both the providers and consumers of new energy services.

3.2.3 Compatible with the development and application of consumer protections

An appropriate consumer protection framework supports the function of competitive retail markets. These frameworks provide consumers with the confidence necessary to effectively engage with the market. They also promote efficient supply side decisions by clearly defining the roles and responsibilities of energy service providers.

Assessment of AEMO's rule change request will consider any impacts on the effectiveness of consumer protection frameworks. This will include consideration of how hardship arrangements, which currently apply at the level of a consumer's premises, might be affected where multiple FRMPs are providing energy services at a premises.

The scope of consumer protections that the Commission proposes to be considered includes:

- consumer protections in the NERL and NERR;
- consumer protections under the general law, including the Australian Consumer Law;
- consumer protections under energy retail laws and regulations of National Energy Customer Framework (NECF) jurisdictions; and
- where relevant, consumer protections under energy laws and regulations of non-NECF jurisdictions such as Victoria.

3.2.4 Proportional response to the issues identified.

Changes to the NER and NERR may drive more efficient outcomes for consumers. However, there are also costs associated with making changes to the NER and NERR frameworks. A rule change that is complex to administer, difficult for stakeholders to understand or results in unnecessary compliance requirements may not achieve its intended purpose and is ultimately likely to impose higher costs on consumers.

Any change to the NER or NERR must therefore be proportional to the issue that it is designed to address. Expressed another way, the benefits of making the rule change should outweigh the costs to consumers, either direct or indirect, of making the rule change.

As discussed above, the benefits associated with AEMO's proposed MTR framework may include more effective competition, through new and innovative energy services facilitated by transparent and flexible regulatory frameworks.

As discussed in Chapter 5, these potential benefits may be realised through different regulatory approaches to enabling MTR. One potential approach is AEMO's proposed MTR framework, while the current NER and NERR arrangements provide an alternative approach. Each of these approaches may be more or less effective at enabling MTR. Each approach also imposes different costs on different parties, including customers, retailers, DNSPs and AEMO.

In assessing AEMO's rule change, the Commission will therefore consider the various benefits of MTR against the costs of different regulatory approaches to enabling MTR. In doing so, the Commission recognises that while each regulatory approach may impose costs on different parties, some costs are likely to be borne by consumers through higher retail prices.

Question 2 Assessment framework

- 1. Are there any other issues that should be considered in the Commission's assessment of AEMO's rule change request?**

4 Issues for consultation

Taking into consideration the proposed assessment framework, a number of issues have been identified for initial consultation. Stakeholders are encouraged to comment on these issues as well as any other aspect of the rule change request or this paper, including the proposed assessment framework.

The key issues identified to inform consultation have been grouped into the following categories:

- **Services facilitated by MTR:** MTR may facilitate new energy services for consumers. This may enhance competition in retail markets and drive more efficient outcomes along the energy supply chain.
- **Enabling an MTR framework:** There may be significant costs associated with different regulatory frameworks to enable MTR. Some of these costs may be borne by individual customers, including the costs of installing a second meter, in house wiring and charges levied by both electricians and DNSPs. Market participants may also face substantial costs related to adapting their IT, operational and billing systems to accommodate AEMO's proposed MTR framework; some of these costs will ultimately be passed on to consumers through potentially higher retail prices. These costs, and higher retail prices, must be considered in the context of the new services and efficiency benefits potentially provided by MTR.
- **Operation of MTR:** A number of important operational and consumer protection matters will need to be addressed to enable AEMO's proposed MTR framework. These matters will require changes to the NER and NERR and include customer classification, disconnection processes, and communication processes where life support equipment is present at a premises. Some of these issues could have significant implications for customers that adopt MTR arrangements. Addressing these various operational matters may also impose costs on participants to adapt systems and processes.
- **Implementation of MTR:** There are interactions between the implementation of MTR and other market reform projects currently being considered by the AEMC and other market institutions. Implementation of MTR may require subsequent changes to be made by AEMO to its procedures, and by governments to jurisdictional documents such as retail codes.

The Commission considers that MTR can be supported through current regulatory frameworks, by establishing multiple connection points at a premises. Alternatively, MTR could be supported through AEMO's proposed MTR framework, which involves establishing multiple settlement points at a premises. Each of these regulatory frameworks may be more or less effective at delivering the potential benefits associated with MTR. Equally however, each framework may also impose costs on different participants, some of which will be borne by consumers.

The Commission therefore intends to assess AEMO's proposed MTR framework against the current arrangements, in the context of these relative benefits enabled and costs imposed by each of these regulatory approaches.

While the NERR relates to both electricity and gas, AEMO's rule change request only applies to the supply of electricity. The discussion below therefore only applies to the supply of electricity.

4.1 Services facilitated by MTR

In its rule change request, AEMO suggested that its proposed MTR framework could help to increase the range of competitive electricity products available to consumers.¹² AEMO identified a number of potential new services that may be supported by MTR, including:¹³

- bundling of appliance financing with the energy supplied to that appliance;
- bundling the finance of small generators with the purchase of export from the generator; and
- provision of energy management and load control of appliances and equipment.

By facilitating the entry of new energy service providers, MTR may increase competition in retail markets and deliver new, more tailored energy products and services for consumers. This may create new value propositions for consumers and suppliers, as well as unlocking value along the supply chain generally.

The concept of MTR was originally raised in the context of electric vehicle energy services. However, MTR could facilitate a much wider range of energy services utilising different technologies and offering different value propositions.

This section summarises analysis by KPMG of the potential energy services that may be facilitated by MTR.¹⁴ While this is not an exhaustive list of new services that may emerge, it is based on current developments in international energy markets and emerging technologies.

The potential efficiency benefits described in this section should be considered in the context of the various costs of enabling an MTR framework, as discussed in section 4.2.

4.1.1 Potential new energy services

KPMG were engaged to explore the range of services that may be facilitated by MTR, considering developments in international markets and in energy technologies. To do so, KPMG considered the most basic definition of MTR; that is, where a customer is

¹² AEMO, rule change request, p.25.

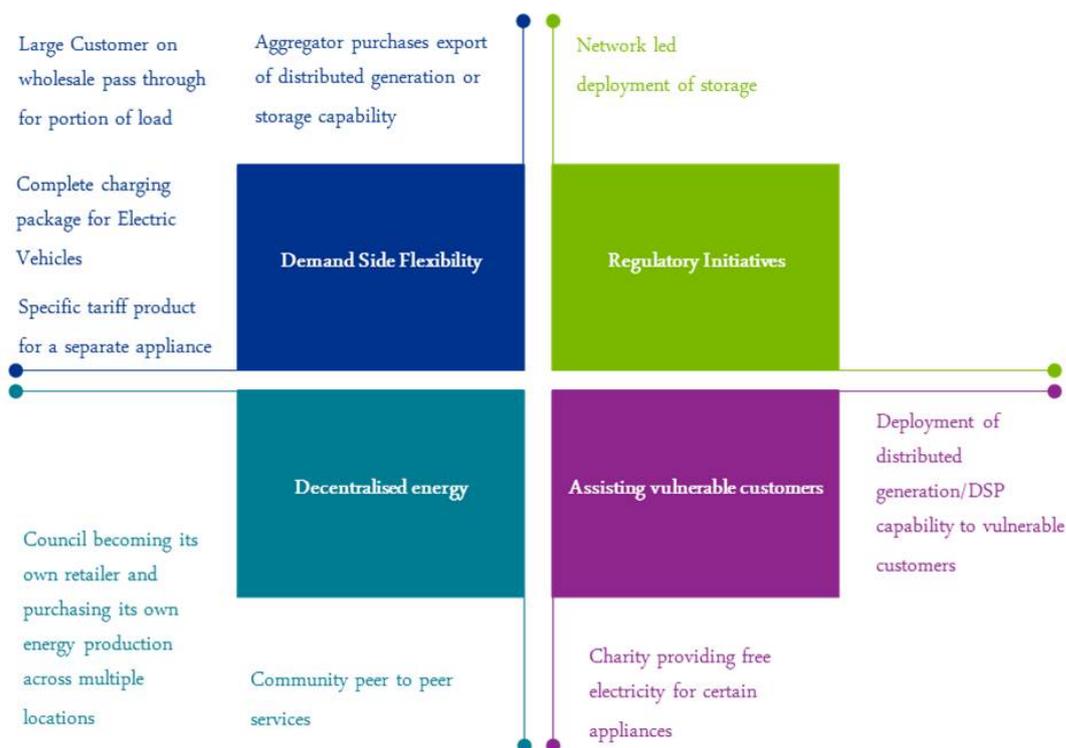
¹³ *ibid*, p.7.

¹⁴ KPMG, *New Energy Services and Multiple Trading Relationships*, July 2015.

able to engage with more than one FRMP at a premises. KPMG's analysis was not based on any specific regulatory framework for MTR, such as establishing a second connection point or AEMO's proposed MTR framework.

KPMG identified a range of potential energy services that may be facilitated by MTR. These services were grouped into the categories of decentralised energy, demand side flexibility, regulatory initiatives and assisting vulnerable customers, as set out in Figure 4.1.

Figure 4.1 New energy services facilitated by MTR



These new energy services included the following:¹⁵

Demand side flexibility:

1. *Specific tariff product for a separate appliance:* In this service model, the customer is provided with a separate tariff product for an appliance, such as an air-conditioner or pool-pump. This service is offered by a separately metered retailer. The service could be extended to also include the cost of the appliance.
2. *Complete charging package for electric vehicles:* In this service model, the customer is offered a service for charging an electric vehicle at multiple locations, including at the customer's premises.

¹⁵ See KPMG, *New Energy Services and Multiple Trading Relationships*, July 2015. Available at www.aemc.gov.au.

3. *Aggregator purchases export of distributed generation or storage capability:* Under this service model, an aggregator purchases the rights to energy exports from distributed generation (DG) or battery storage owned by the customer.
4. *Large Customer on wholesale pass through for portion of load:* An industrial or commercial customer buys a service where a portion of its controllable load is exposed to the wholesale spot market price.

Regulatory initiatives:

5. *Network led deployment of storage:* This service model involves a customer signing up with a network business to allow battery storage to be installed behind the meter at the customer's premises. The network service provider becomes the FRMP responsible for import to and export from the storage unit.

Decentralised energy:

6. *Community peer to peer services:* Community peer to peer energy projects involve a group of customers and/or local generators who buy and sell energy direct from each other. Each customer may also require backup supply from a traditional retailer at its premises.
7. *Council purchasing its own energy production:* In this service model, a local council acts as a local generator and local retailer for its own DG. A backup retailer may be needed to provide supply when the DG units are not generating.

Assisting vulnerable customers:

8. *Charity provides free electricity to vulnerable customers:* In this service model, a charity becomes a retailer and offers free electricity for certain appliances to assist vulnerable customers. A separate retailer provides all remaining supply.
9. *Deployment of DSP / DG to vulnerable customers:* In this service model, a service provider deploys DG and smart meters to assist vulnerable customers in managing energy costs. The service provider is separately metered at the premises, with a second retailer providing backup supply.

KPMG identified that MTR may only be a pre-requisite to enabling two of these services. These services could only be effectively provided if a second FRMP could engage with the customer at its premises. For example, the DG aggregator model (number 3 above) could only work if the aggregator was capable of engaging directly with the small customer at the premises, separately from the existing retailer.¹⁶

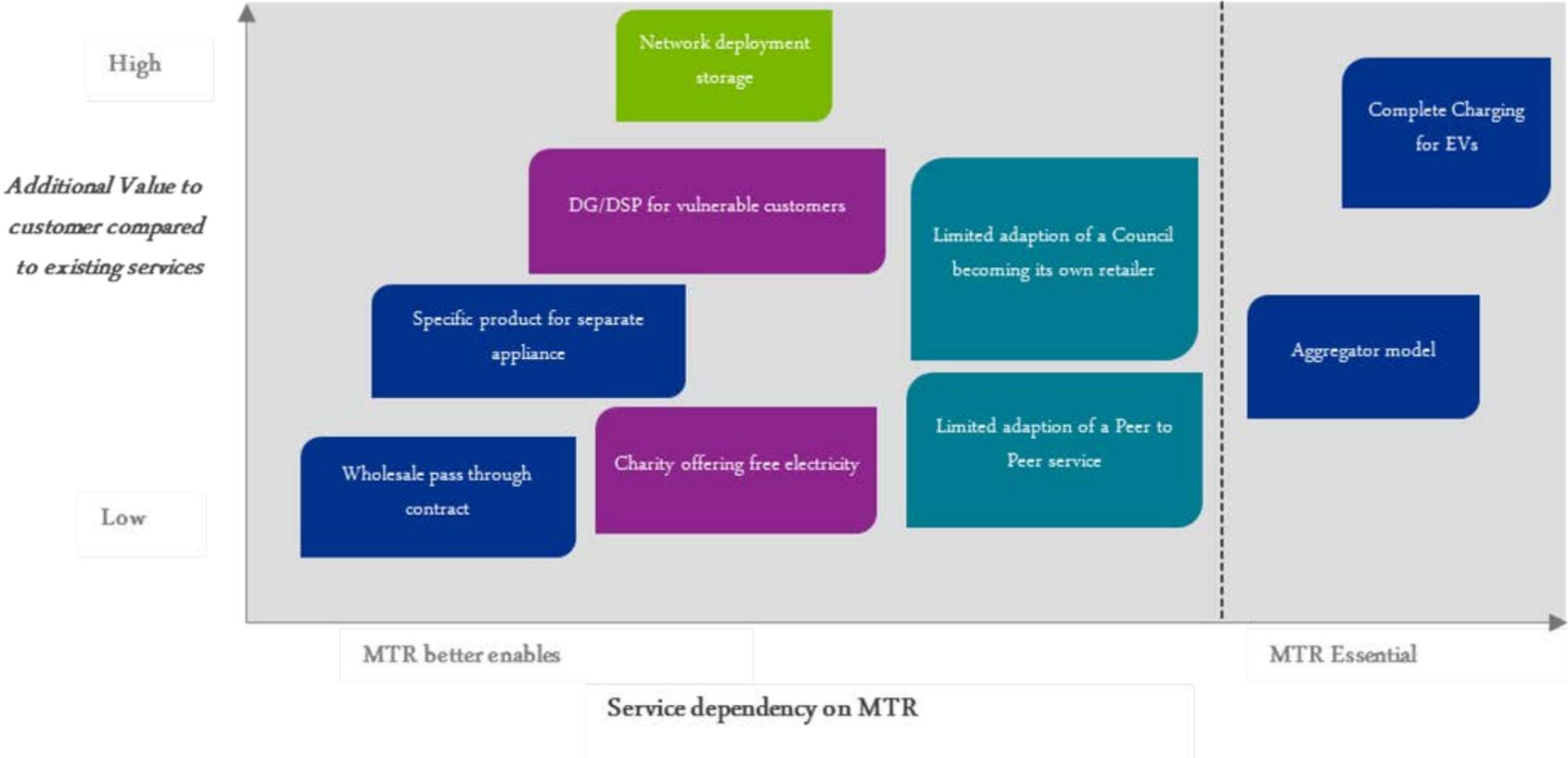
For the remaining seven services, KPMG considered that MTR was not a pre-requisite condition. However, for many of these services, MTR could facilitate efficient outcomes by helping customers to more effectively capture the relevant value proposition. For

¹⁶ *ibid.*, p.3. The Commission understands that currently, DG aggregator service models are already active at the large customer level, as these customers may find it economical to establish a second connection point for the purposes of selling DG output.

example, by allowing a customer to unbundle demand side response (such as engaging with a separate retailer for a load controlled appliance) from its energy consumption, MTR might support a wider range of potential service providers, improving choice and helping the consumer to negotiate a better price for its demand response.

The relationship of different energy services to MTR, and their additional benefits to the customer-over and above existing arrangements is illustrated in Figure 4.2

Figure 4.2 Dependency of new energy services on MTR



Note: The services listed above can provide varying levels of additional value to customers, over and above existing arrangements. The services that 'MTR better enables' are those already supported through existing arrangements, however, some services allow the customer to capture more of the benefits than others. Similarly, while the services identified as 'MTR Essential' are not supported through existing arrangements, the captured benefits to customers can also vary. KPMG note that these judgements of value may not be shared by other market participants.

KPMG were also asked to consider whether any of these new energy service models were sensitive to, or reliant upon, a particular metering configuration. While KPMG identified that different metering configurations may have cost implications for customers or participants, none of the identified energy services were found to have a specific reliance on any metering configuration.

Question 3 New services facilitated by MTR

1. **Does KPMG's analysis represent a reasonable summary of the services that may be facilitated by MTR? Are there any other services that may be facilitated by MTR?**
2. **Would these new services be more effectively enabled by AEMO's proposed MTR framework than under current arrangements which require a second connection to the distribution network? Would AEMO's proposed MTR framework better enable customers to capture the value associated with the demand response, as opposed to current arrangements?**

4.1.2 Efficiency benefits of these services

KPMG's analysis also considered how these new energy services might create and capture value along the electricity supply chain by:

- addressing wholesale price peaks through reducing consumption or exporting storage at peak times;
- avoiding network outages and deferring the need for transmission or distribution network; and
- providing network support or ancillary services, such as network support and frequency control ancillary services.

KPMG noted that the profitability of a service is partly related to its capability to capture value in one or all of these parts of the supply chain. However, this is typically difficult to achieve, given coordination and split incentive problems between different participants along the supply chain.¹⁷

Of the nine new energy services identified, KPMG found that most provided only limited opportunity to capture value along the supply chain. In some cases, such as the EV charging model and free electricity for vulnerable customers, the value proposition of the service was not related to wholesale, network or ancillary services. In other cases, such as community peer to peer services and appliance specific tariffs, the value

¹⁷ For example, while networks need to deal with peak demand at the level of feeders and transformers, retailers focus on aggregated off-peak, peak and shoulder pricing frameworks set by periods in the day, as well as management of wholesale prices. The signals faced by either party do not necessarily align and consequently, each party faces different incentives.

proposition was limited to one or two parts of the supply chain. KPMG found that only the DG aggregator service and network led deployment of storage service appeared capable of capturing all the value along the supply chain.¹⁸

Question 4 Efficiency benefits

- 1. Does KPMG's analysis effectively describe the ability of these different energy services to capture efficiency benefits along the supply chain?**
- 2. Do the current arrangements raise coordination and split incentive issues? If so, to what extent would AEMO's proposed MTR framework allow service providers to address such coordination and split incentive problems?**

4.1.3 Other factors affecting uptake of new energy services

KPMG's analysis identified that there are a number of other factors that may be relevant to the development of new energy services. Given the extent of these other factors, KPMG suggested that enabling MTR, by itself, would not guarantee increased choice and value for customers.¹⁹

These other factors included:

- **Regulatory developments:** Changes to regulatory frameworks may be relevant to the entry of new energy services. A particular issue is whether new energy services would be subject to the consumer protections requirements established through the National Energy Customer Framework (NECF).²⁰ A requirement to meet these obligations could increase costs for energy service providers and may be relevant to entry decisions.

Other relevant regulatory developments include changes to ring fencing arrangements, as these affect the ability of DNSPs to engage in the provision of services in the competitive energy market.²¹ Also relevant are potential changes to the demand management incentive scheme (DMIS) and the introduction of a demand response mechanism, both of which are subject to rule changes currently being considered by the AEMC.²²

¹⁸ KPMG, *New Energy Services and Multiple Trading Relationships*, July 2015, p.28.

¹⁹ *ibid.*

²⁰ The treatment of third party energy service providers is currently the subject the COAG Energy Council *New Products and Services in the Electricity Market* review. A consultation paper for this review was published in December 2014. More information is available at <http://www.scer.gov.au>.

²¹ The draft rule of the competition in metering rule change requires the AER to develop and publish ring fencing guidelines. These ring fencing guidelines have a broad scope of application and may be relevant to DNSP ownership and operation of distributed storage, depending on the classification of such services. See: AEMC, *National Electricity Amendment (Expanding competition in metering and related services) Rule 2015*, Draft rule determination, March 2015, p.viii.

²² See www.aemc.gov.au

KPMG identified that the pace of regulatory change may create a sense of instability for new energy service providers, creating challenges for new parties to enter the market.

- **Government subsidies:** Government subsidies may play a key role in encouraging uptake of new energy services. As an example, KPMG highlighted that those countries with high levels of EV penetration typically had a number of significant financial incentives for EV uptake.
- **Customer engagement and early adopters:** New energy services may be relatively complex and require a higher level of consumer engagement. Uptake of these new energy services may therefore be partly dependent on the existence of "early adopters" who are willing to take on the complexity of new products and services. Consumer engagement may also be dependent on the presence of software or third parties who can provide support or automation of new services to reduce transaction costs.

4.2 Enabling an MTR framework

MTR allows a customer to engage with multiple FRMPs at its premises. This may be supported by various regulatory frameworks: under current arrangements, a customer may engage with multiple FRMPs by establishing a second connection point; under AEMO's proposed MTR framework, the customer would establish multiple settlement points.

This section considers the different regulatory frameworks that may support MTR, and what kinds of costs these different frameworks may impose on customers, market participants and AEMO.

4.2.1 Current arrangements and AEMO's proposed framework

MTR can be supported under current arrangements if a consumer establishes a second connection point. Under such an arrangement, each connection point is separately metered and electrically isolated, with a different FRMP responsible for each connection point. In effect, each connection point is treated in the market systems as though it were a separate site.

In its rule change request, AEMO stated that these arrangements may not be effective, especially for small customers, as:²³

- customers would face upfront costs in establishing a second connection point, and would need to undertake time consuming negotiations with retailers and local network service providers (LNSPs) to do so; and
- there is significant uncertainty in the current frameworks as to the roles and responsibilities of each FRMP at a premises with two connection points.

²³ AEMO, rule change submission, p.7.

AEMO argued that these costs may make establishing a second connection impractical for small consumers, impeding the uptake of MTR. AEMO suggested that its proposed MTR framework, which would allow multiple settlement points at a premises with one connection point, would reduce costs for consumers and may encourage uptake of MTR arrangements.

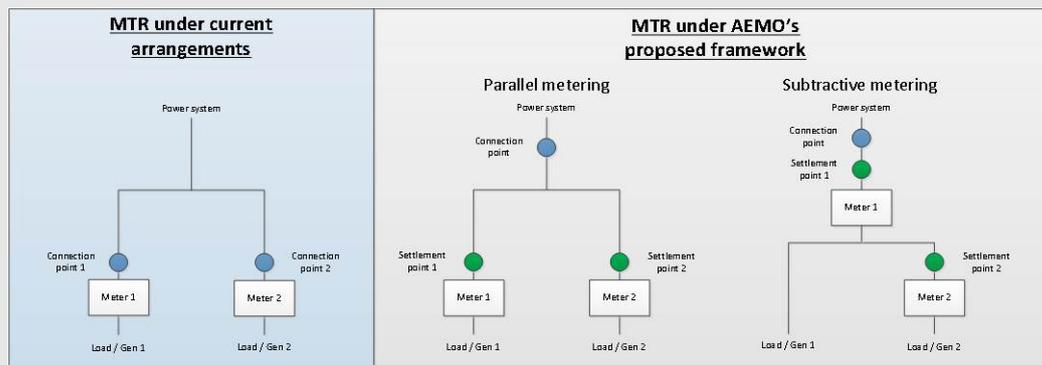
These two MTR arrangements are described in Box 4.1.

Box 4.1 MTR under current arrangements and AEMO's proposed framework

MTR can be enabled under existing frameworks by establishing a second connection point at a premises. Each connection point is associated with a different meter, NMI and FRMP. This is demonstrated on the left of Figure 4.3.

Under AEMO's proposed MTR framework, MTR could be supported through establishing multiple settlement points at a premises. Each settlement point is associated with a different meter, NMI and FRMP. These settlement points can be supported by different metering configurations, including parallel metering (centre) or subtractive metering (right).²⁴

Figure 4.3 MTR configurations



Note: the configuration for current arrangements and parallel metering are essentially the same, in terms of physical metering. While a subtractive metering arrangement has a different configuration, two separate meters are still required.

4.2.2 Impact on small and large customers of enabling MTR

As identified above, MTR can be enabled under two different regulatory frameworks: the current arrangements, or AEMO's proposed MTR approach. This section examines the costs that customers are likely to face to enable MTR under either regulatory framework.

²⁴ For simplicity, the net metering arrangement is not shown. Net metering is similar to parallel metering, except the two meters are in series, rather than parallel. More information is provided in Appendix B.

Energeia were engaged to provide advice regarding the costs and timeframes to establish a second connection point, with a particular focus on small customers. Each of the distribution network areas of the NEM were considered, to identify a range of costs.²⁵ Information was gathered directly from DNSPs, retailers and electricians.

Energeia identified a range of potential costs that would be incurred by a customer seeking to establish MTR arrangements supported by a second connection point. In many cases, all of these costs would also be incurred by a customer establishing MTR arrangements through AEMO's proposed MTR framework, where MTR is supported by multiple settlement points. However, Energeia also identified that AEMO's proposed framework could reduce costs for consumers in some specific circumstances.

Table 4.1 sets out the range of costs that may be incurred by a customer seeking to establish MTR under either regulatory framework.²⁶

²⁵ Energeia, *Advice on establishing a second connection point*, July 2015. Available at www.aemc.gov.au.

²⁶ Energeia were not asked to directly examine the costs associated with AEMO's MTR framework. However, Energeia's analysis suggests that the costs faced by a customer are likely to be similar under both approaches. See: Energeia, *Advice on Establishing a Second Connection Point*, July 2015, p.4.

Table 4.1 Costs incurred by a small customer to enable MTR under current arrangements and AEMO's proposed MTR framework

Cost	Description	Extent of Cost	Incurred under current arrangements?	Incurred under AEMO's proposed MTR framework?
Network fee - NMI establishment, meter and meter installation	This fee covers DNSP administrative costs, including NMI establishment. It also covers the cost of a second meter and meter installation. ²⁷	\$65.66 to \$937.45	Yes	Yes. A new meter would still need to be installed and a new NMI allocated by the DNSP to the new settlement point.
Electrician fee - prepare switchboard	This fee is for work to enable the switchboard to support the new meter. ²⁸	\$300 to \$500	Yes	Yes
Electrician fee - replace switchboard	This fee may be necessary if the customer's switchboard is in poor condition and requires an upgrade to be consistent with safety requirements.	\$1,000	Only in some situations	Only in some situations This depends on the condition of the switchboard at the premises and may still be incurred under either a parallel or subtractive arrangement.

²⁷ DNSPs charge in the range of \$229 to \$937 for this component, except in NSW where charges range from \$66 - \$98 because those DNSPs do not perform the meter installation-the charge is simply a processing fee.

²⁸ The extent of this work, and hence the fee for this component, will vary significantly with the consumer's requirements and application. Energeia found that the electrician's fee is typically in the range of \$300 to \$500.

Electrician fee - in premises wiring	The fee may be incurred where a new circuit needs to be installed to ensure the electrical isolation of a load.	\$2,000	Only in some situations	No. AEMO's proposed framework allows for subtractive metering, potentially avoiding the costs of installing a new circuit from a meter at the switchboard to the relevant load.
Network fee - new or upgraded service mains	This fee may be incurred where a second physical linkage to the power system is required, or where the existing linkage requires upgrading. This may be required if the customer is installing additional load that exceeds the current capacity of the service mains.	Up to \$2,000	Only in some situations	Only in some situations This cost is based solely on the size of any additional load installed and is unrelated to metering configuration.

This analysis suggests that in most cases, a small customer is likely to face similar or identical direct costs under current arrangements or under AEMO's proposed MTR framework. This reflects the fact that under either approach, a new meter will need to be installed, DNSP charges will be incurred and an electrician will need to be engaged to prepare the switchboard. Any additional costs, such as those associated with upgrading service mains or replacing switchboards, are also likely to be incurred under either regulatory framework.

However, Energeia's analysis also indicated that, in specific circumstances, AEMO's proposed MTR framework may reduce some of the direct costs faced by a small consumer. This may only occur in a small portion of cases, such as where a customer wanted to separately meter a load located some distance from the switchboard and metering installation:

- Under current arrangements, it may be necessary to install new wiring between the new meter at the switchboard and the relevant load, to ensure that the load remains electrically isolated. According to Energeia's analysis, this additional wiring could cost a consumer around \$2,000.²⁹
- Under AEMO's proposed MTR framework, a subtractive metering approach could potentially allow for a new meter to be installed "downstream" of the main metering installation and switchboard, avoiding the need to install additional wiring at the premises.

Energeia were also asked to consider any differences in costs between small and large customers for the establishment of a second connection point. Energeia found that while the overall process was the same for small and large consumers, large consumers may face higher network fees for the establishment of greater capacity on their connection. More complex metering technology may also be required. Larger customers may also face costs related to augmentation of the shared network, depending on the size of their load. Generally however, the nature of the costs faced by large customers was not markedly different to those potentially faced by small customers.

Question 5 Impacts on customers of enabling MTR

- 1. Are the costs associated with establishing a second connection point likely to deter customers, particularly small customers, from engaging with multiple FRMPs at a premises?**

²⁹ This additional wiring may not be needed if the load was already supported by an electrically isolated circuit. For example, large appliances such as air conditioners or hot water systems are frequently supported by their own designated circuits. In these instances, a new meter could be installed at the switchboard without the need for additional wiring to maintain electrical isolation.

2. **Would AEMO's proposed MTR framework significantly reduce direct costs for customers who want to engage with multiple FRMPs? Could AEMO's proposed MTR framework deliver any other direct cost savings for consumers?**
3. **Are the direct costs of engaging with multiple FRMPs at a premises markedly different for small and large customers under current arrangements? Would AEMO's proposed MTR framework have a more significant impact for small customers than for large customers?**

4.2.3 Impact on AEMO and market participants of enabling MTR

Market participants and AEMO may face different costs to support MTR under current arrangements as compared to AEMO's proposed MTR framework. This principally reflects the potential need to adapt IT, billing, metering and other operational systems to allow for MTR under AEMO's proposed MTR framework.³⁰

Market participants such as retailers and DNSPs utilise complex IT systems in the operation of their businesses. DNSPs operate systems for activities including the allocation of NMIs and management of customer information, while retailers manage large customer information databases and billing systems. AEMO also operates IT systems to manage the process of market settlement, customer transfer and other functions.

Market participants have previously advised they may face significant costs if required to adapt these systems to support AEMO's proposed MTR framework. For instance, in the AEMCs 2012 'Energy market arrangements for electric and natural gas vehicles' review, both Energy Australia and SP AusNet considered that the changes required to support an MTR framework would cause significant costs to participants, and that these costs were likely to outweigh the benefits.³¹ AEMO has previously considered the costs faced by market participants to adapt their systems to enable MTR. These costs are briefly summarised in Box 4.2

³⁰ The Commission understands that MTR can be supported under current arrangements without any significant changes to AEMO or participant IT systems. Establishment of a second connection point duplicates the establishment of the first connection point and should therefore only impose incremental costs on AEMO and participant systems.

³¹ AEMC, Energy Market Arrangements for Electric and Natural Gas Vehicles, Final advice, 11 December 2012, p.49.

Box 4.2**Jacobs SKM cost benefit analysis: costs for AEMO and participants**

AEMO engaged Jacobs SKM to undertake a cost benefit analysis of its original high level MTR design. Jacobs SKM's assessment of costs was based on information sourced by AEMO from retailers and DNSPs. The accuracy of this information was not subject to detailed analysis.

Participants identified changes to IT, billing and metering systems as a key implementation cost.³² These included fixed, upfront implementation costs, such as updating systems and training staff to use the new systems. Ongoing costs were also identified, for the management of customers with MTR. This analysis also identified costs for AEMO reflecting the design of new market arrangements, systems development, staff training and other administrative costs.³³

Jacob SKM's assessment found that, on average, individual retailers could be expected to incur a total cost of around \$13 million, and DNSPs \$10 million, to implement and operate AEMO's high level MTR design.³⁴ AEMO expected to incur a total cost of around \$6 million to implement MTR.

In conversations with stakeholders, the AEMC has been advised that these costs partly reflected the prescriptive and detailed nature of AEMO's high level MTR design. This design required participants to have systems in place that would support a number of metering configurations, and operational processes such as disconnection and notifications.

AEMO has identified that its new MTR framework is a "high level framework within which MTR can operate and evolve". In developing this high level approach, AEMO has sought not to "impose detailed prescriptive requirements" on participants. Details of the "day to day" operation of MTR will be included in retail market procedures, which AEMO intends to develop subsequent to any change to the NER and NERR frameworks.³⁵ This less prescriptive design of the proposed MTR framework may reduce the extent of adaptation costs faced by participants.

Despite this, it is likely that some adaptations to participant systems would still be needed to enable MTR under AEMO's proposed MTR framework. The extent to which these adaptations impact market participants will be affected by several factors:

- **Scale of adaptation of systems:** AEMO's proposed MTR framework may require retailers and DNSPs to adapt IT systems, particularly to support metering configurations such as subtractive metering.

³² Jacobs SKM, *Benefits and costs of multiple trading relationships and embedded networks*, May 2014, p.23. See Appendix A for a more detailed description of Jacobs SKM analysis.

³³ *ibid*, pp.24-25.

³⁴ *ibid*.

³⁵ AEMO, rule change request, p.8.

However, the extent of this impact will be influenced by whether the NER and NERR frameworks explicitly require participants to adapt their systems to allow for all MTR arrangements and metering configurations, or whether this remains a voluntary, market driven process. For example, retailers could voluntarily choose to adapt their systems to support specific kinds of MTR, where they perceived an economic benefit in doing so. MTR arrangements could also be voluntarily supported by Metering Coordinators, as discussed in section 4.3.1.

- **Speed of adaptation of systems:** Requiring an immediate adaptation of systems to allow for MTR brings any relevant costs forward. A staged adaptation process may therefore reduce costs, or at least make them more manageable for participants. Similarly, participants could choose to adapt their systems manually, to allow for each MTR arrangement on a bespoke basis.

However, it is not clear whether it is possible to stage system adaptations, or whether the costs are able to be deferred. Similarly, the cost of bespoke adaptation is likely increase as more customers choose MTR arrangements.

- **Synergies with other adaptations:** There are a number of other projects being progressed from the Power of choice review, including the Embedded Networks rule change and the Demand Response Mechanism rule change. It may be that costs can be minimised if system adaptations to allow for MTR are made at the same time as adaptations to allow for the Demand Response Mechanism. The general process for implementation of this rule change, and its relationship to other rule change processes, is discussed in section 4.4.

The system adaptations to enable MTR may be related to the various operational matters explored in section 4.3. For example, changes to the processes for customer classification and disconnection may require changes to both DNSP and retailer systems.

Question 6 Impacts on AEMO and market participants of enabling MTR

1. **What costs would retailers, DNSPs and AEMO face in adapting their systems to implement AEMO's proposed MTR framework?**
2. **Could these adaptation costs be reduced through a staged implementation process?**
3. **Could these adaptation costs be reduced by implementing at the same time as any other projects? What other projects might present opportunities for joint implementation?**

4.3 Operational matters

The NER and NERR include a number of provisions that may be relevant to the actual operation of MTR. This section explores these areas, which have been grouped under the following general headings for the purposes of this consultation paper.

National Electricity Rules:

- Metering arrangements.
- Network charges.
- Definition changes, market registration and market rules.

National Energy Retail Rules:

- Customer classification and reclassification.
- Relationship between DNSPs, customers and retailers.
- De-energisation / disconnection arrangements.
- Life support equipment.
- Standard retail contracts and deemed retail customer arrangements.

The purpose of this section is to identify some of the issues that may need to be addressed to implement AEMO's proposed MTR framework. These are likely to form the basis of the AEMO and participant implementation costs discussed in section 4.2.3, as the solutions to these issues are likely to require adaptation of AEMO and participant systems.

Stakeholders are invited to comment on these issues, and to identify whether there are any other issues that have not been identified. Specific solutions to these issues are not discussed; stakeholders are invited to propose solutions where appropriate.

4.3.1 Metering arrangements

Chapter 7 of the NER sets out the arrangements for metering in the NEM.

The Competition in metering rule change, currently being considered by the AEMC, proposes significant changes to Chapter 7 of the NER. For the purposes of this consultation paper, the Commission has based its questions for consultation on the metering arrangements set out in the Competition in metering draft rule determination, which was published in March 2015.³⁶

There are a number of matters related to metering that may be relevant to the consideration of AEMO's rule change request, including:

- the role of the Metering Coordinator;
- the role of the Financially Responsible Market Participant; and
- multi-element meters.

³⁶ Available at www.aemc.gov.au.

Role of the Metering Coordinator

The Competition in metering rule change introduced a new market participant, the Metering Coordinator. The Metering Coordinator replaces the role of the Responsible Person and is responsible for the provision of metering services at a connection point. A Metering Coordinator is appointed by the FRMP for a connection point, unless a large customer appoints its own Metering Coordinator.

There may be multiple Metering Coordinators at a premises where a consumer has engaged with multiple FRMPs. As suggested by AEMO, these different Metering Coordinators could engage with each other to provide MTR solutions as a service offering to both the consumer and to the relevant FRMPs. This may be particularly relevant in the case of an MTR arrangement supported by a subtractive metering configuration.

Metering Coordinators have the potential to improve competition in the metering market as a greater number of these providers engage with consumers and FRMPs. Under an MTR scenario where multiple FRMPs may be active, the incentives for Metering Coordinators to engage multiple FRMPs may be more complex. In particular, given that the Metering Coordinator would typically be appointed by a FRMP, their ability, or willingness, to independently engage with other Metering Coordinators (appointed by other FRMPs) to support MTR at a premises may be affected. The ability of Metering Coordinators to offer MTR solutions may also be influenced by the willingness of DNSPs to support these solutions through making changes to their own IT and operational systems.

Role of the Financially Responsible Market Participant

Under the Competition in metering draft rule, a FRMP participates in the market in respect of a connection point.³⁷ The FRMP is responsible for establishing a metering installation, appointing a Metering Coordinator and ensuring that the Metering Coordinator has obtained a NMI for that connection point.³⁸ The FRMP is the sole party who may appoint a Metering Coordinator for a small customer.³⁹

Under these arrangements, only FRMPs can engage with a customer under an MTR arrangement. Similarly, only a FRMP can arrange for a new metering installation at a premises and appoint a Metering Coordinator for that premises.

³⁷ The NER define a Market Participant as "A person who is registered by AEMO as a Market Generator, Market Customer, Market Small Generation Aggregator or Market Network Service Provider under Chapter 2." A financially responsible market participant is further defined in the NER as "In relation to any market connection point, a term which is used to describe the Market Participant which has ... classified the connection point as one of its market loads".

³⁸ Draft NER clause 7.2.1 from the Competition in metering draft rule. Note that under AEMO's proposed MTR framework, this responsibility would apply at the level of the settlement point, rather than connection point.

³⁹ Draft NER clause 7.6.2 from the Competition in metering draft rule allows a large customer to appoint its own Metering Coordinator.

In practice, this would mean only those energy service providers who registered as a Market Generator, Market Customer, Market Small Generation Aggregator or Market Network Service Provider under Chapter 2 of the NER could enter into a contract with a consumer and have a market facing role through an MTR arrangement.

The Commission is also interested to understand whether AEMO's proposed MTR framework may have any implications for the AER's Exempt Seller regime.⁴⁰

Multi-element meters

A multi-element meter is capable of measuring two or more flows of energy, using multiple measurement elements within the one meter. MTR could therefore be supported by a multi-element metering configuration, with each measurement element identified as a settlement point with its own NMI and allocated to a different FRMP.

AEMO's rule change request allows for multi-element meters, but requires that one Metering Provider be responsible for the relevant metering installation.

Multi-element meters could help reduce the costs of MTR, by avoiding the need to install multiple meters at a premises. However, multi-element capability is not currently part of the minimum specification included in the Competition in metering rule change.⁴¹ Multi element capability may therefore only be installed if a FRMP perceives value in doing so and instructs a Metering Coordinator accordingly. Alternatively, a Metering Coordinator could include multi element capability in a new meter and bear the costs of doing so, if it perceived value in subsequently selling this functionality to a third party.

The AEMC has been advised that enabling MTR through multi-element meters may result in substantial costs for some participants, by requiring significant changes to IT and settlement systems. If these systems are not updated or otherwise adjusted to allow for multi-element meters, this may prevent other parties, such as retailers and Metering Coordinators, from facilitating MTR through multi-element meters.

Question 7 Metering arrangements

- 1. What issues could arise for Metering Coordinators as a result of MTR? What issues arise for MTR as a result of the role of Metering Coordinators?**

⁴⁰ The AER is required to develop guidelines for those parties who may be exempt from holding a retailer authorisation under the NERL. More information is available at <http://www.aer.gov.au/retail-markets/retail-exemptions>.

⁴¹ The Competition in metering draft rule determination sets out the minimum services that a new or replacement meter installed at a small customer's premises must be capable of providing. For more information, see: AEMC, *National Electricity Amendment (Expanding competition in metering and related services) Rule 2015, Draft Determination*, March 2015.

2. **Should only financially responsible market participants be able to engage with customers through MTR arrangements? If not, what other parties should be allowed to engage through MTR and what benefits would this provide to consumers? What are the implications for the AER's exempt selling guidelines?**
3. **Could multi-element meters support MTR at a lower cost to consumers than other metering configurations? Are there limits or barriers to stop Metering Coordinators installing meters?**
4. **Can multi-element meters be supported by existing AEMO and participant IT and settlement systems? Would a requirement on AEMO and participants to support multi-element meters create costs for participants? What is the extent of these costs?**

4.3.2 Network charges and network support payments

Under current arrangements, distribution use of system charges (DUOS) are recovered on the basis of a customer's consumption at a connection point. These network charges typically include a fixed daily charge and a variable usage charge.⁴² The DNSP levies these charges on the FRMP for the connection point who then recovers them from the customer via the retail tariff.

Current DUOS charging arrangements are based on the assumption of one FRMP at each connection point. Allocation of DUOS charges may therefore be more complex under MTR:

- Under AEMO's proposed MTR framework, multiple FRMPs may be active at a connection point. This may create complexities in regards to the allocation of DUOS charges between FRMPs, particularly the allocation of any fixed component. There may also be some challenges associated with the allocation of demand or capacity based charges between FRMPs.
- Establishment of a second connection point at a premises would require a DNSP to consider how to allocate DUOS charges between two connection points

The Distribution Network Pricing Arrangements rule change, finalised in December 2014, introduced a network pricing objective and network pricing principles that DNSPs must apply when developing their network charges. The network pricing objective requires that the tariffs charged by a DNSP to a retail customer should reflect the DNSP's efficient costs of providing those services to the retail customer.⁴³ This pricing objective may be relevant to the allocation of DUOS at a premises with MTR

⁴² The Distribution Network Pricing Arrangements final rule change determination, finalised in December 2014, allows DNSPs to develop new pricing structures that may be different to the fixed/variable pricing structure described here.

⁴³ NER clause 6.18.5.

arrangements.⁴⁴ In such a situation, the DNSP may develop DUOS charges that reflect the efficient allocation of costs across the various connection points or settlement points at a premises.

Chapter 6B of the NER sets out provision for the billing of network charges to a retailer and some aspects of the process for reclassifying a customer between tariff classes. Chapter 6B also sets out the credit support process. These arrangements are based on the current assumption of one FRMP per connection point and may require amendment to allow for MTR arrangements.

Question 8 Network charges and network support payments

- 1. If a customer establishes a second connection point at a premises, will that customer face inefficient fixed DUOS charges? Will this issue be addressed by the new network pricing objective and pricing principles?**
- 2. Would the allocation of capacity or demand based charges present particular challenges where multiple FRMPs are present at a premises?**
- 3. Would MTR require changes to the frameworks for the billing of network charges and for credit support?**

4.3.3 Definition changes, market registration and market rules

AEMO have proposed a number of definition changes to be included in Chapter 10 of the NER. AEMO have also proposed changes to Chapters 2 and 3 of the NER, which set out the details of market registration and the market rules, respectively.

AEMO's changes to these chapters are mainly to replace the term "connection point" with "settlements point" in a number of clauses. The term connection point has been retained in those instances that refer to the point of physical connection to the power system.

Question 9 Definition changes, market registration and market rules

- 1. Are the changes proposed by AEMO to Chapters 2, 3 and 10 of the NER sufficient to enable AEMO's proposed MTR framework?**
- 2. Are AEMO's proposed substitutions of settlement point for connection point appropriate in each instance?**

4.3.4 Customer classification and reclassification

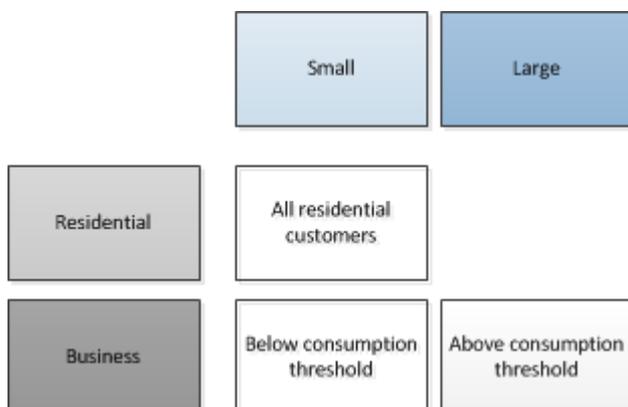
Part 1, Divisions 2 and 3 of the NERR describe the different classifications of retail customers. Customers are classified both according to how energy is used at a

⁴⁴ Noting that the rules that establish the network pricing objective will not come fully into force until 2017, with some transitional arrangements in place before then.

premises, as well as the total annual quantity of energy consumed at a premises. These classifications include:

- **Small customers:** Small customers include both residential and small business customers, who are defined as follows under the NERL:⁴⁵
 - Residential customers are defined as customers who purchase energy principally for personal, household or domestic use at a premises. All residential customers are small customers.
 - Business customers are all those customers who are not classified as residential customers. For a business customer to be classified as a small customer, it must consume an annual quantity of electricity below a specified upper consumption threshold at a premises.⁴⁶
- **Large customers:** These are business customers consuming above a specified upper consumption threshold. These customers largely fall outside of the retail framework but the NERL and NERR still imposes some obligations on and around them. Most significantly, being a large customer generally changes the nature of the relevant connection contract applicable to that customer.

Figure 4.4 Customer classification



These classifications determine how the NERR applies to each type of customer. For example, retailers are required to make standing offers available to all small customers, either residential or business, but not to large customers.⁴⁷ Similarly, customer hardship arrangements only apply to residential customers.

The NERR sets out a process for the classification and reclassification of customers. Retailers are responsible for classifying customers as either residential or business

⁴⁵ The NERL also allows for a subclassification of "small market offer customers". No participating jurisdiction in the NECF applies this subclassification.

⁴⁶ The NERL, NERR and National Energy Retail Regulations set out specific values for the upper and lower consumption thresholds. Each jurisdiction in the NEM has either adopted these values or has established its own values.

⁴⁷ The NERR refers only to retailers, who are a subset of the class of participants described as FRMPs.

customers, while DNSPs are responsible for classification of business customers as either small or large. Both parties may reclassify customers where required.

Issues related to classification may arise under an MTR arrangement where a customer engages with multiple retailers at a premises:

- **Initial classification:** In its rule change request, AEMO proposed that classification as a residential or business and small or large customer should be determined on the basis of the total energy consumed at a premises. However, this classification could also occur at the level of individual settlement points.
- **Reclassification:** In its rule change request, AEMO proposed that any retailer selling energy to a customer at a settlement point at a premises should be able to reclassify the customer as a residential or business customer, in respect of *all* the settlement points at that premises. However, this may create problems where other retailers are active at the premises and do not want the particular settlement point for which they are financially responsible to be reclassified.

Question 10 Customer classification

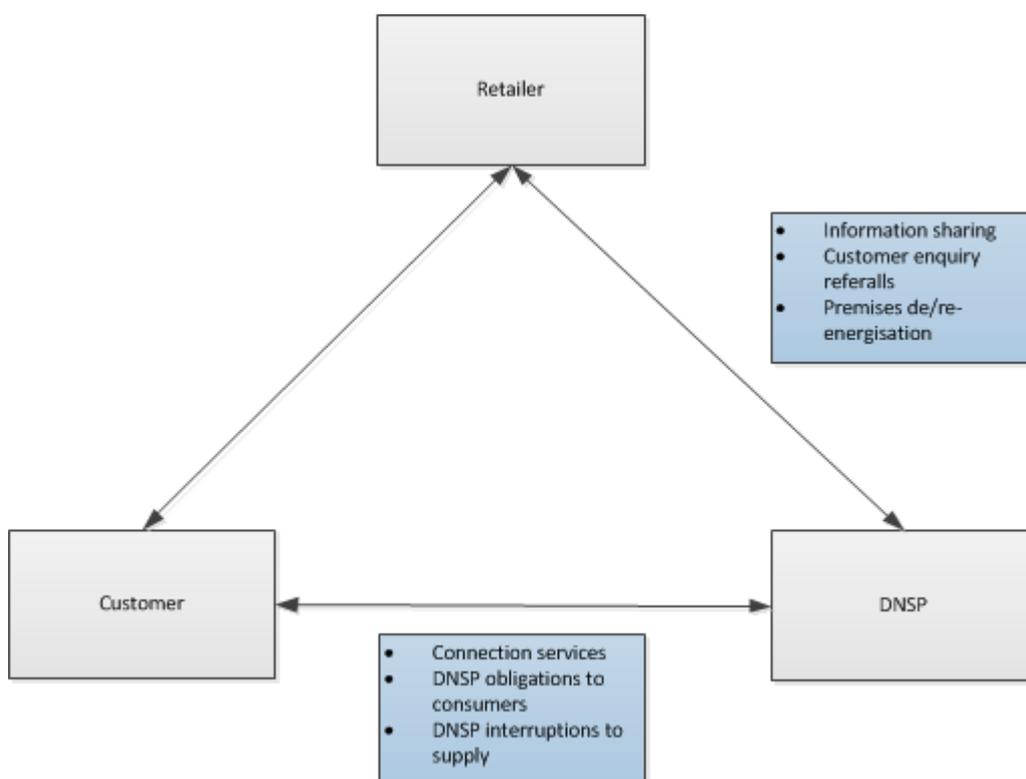
1. **Should customers be classified as large or small, residential or business, according to consumption at the level of the premises, or according to consumption at individual settlement points?**
2. **Should FRMPs have the ability to reclassify only the settlement points for which they have responsibility, or should they be able to reclassify an entire premises?**
3. **Would these issues be any different where a customer had established multiple trading relationships supported by a second connection point at its premises?**

4.3.5 Relationship between DNSPs, customers and retailers

Parts 4 and 5 of the NERR establish a tripartite relationship between a retailer, the DNSP and the customer. This entails the concept of a "shared customer" between the FRMP and DNSP. As well as establishing the various obligations and responsibilities between retailer and customer, the NERR establishes relationships between the DNSP and the customer, and between the DNSP and the retailer.

These relationships are illustrated in Figure 4.5 below.

Figure 4.5 Shared customer relationship - current arrangements



The relevant matters set out in the NERR include:

Relationship between DNSP and customer:

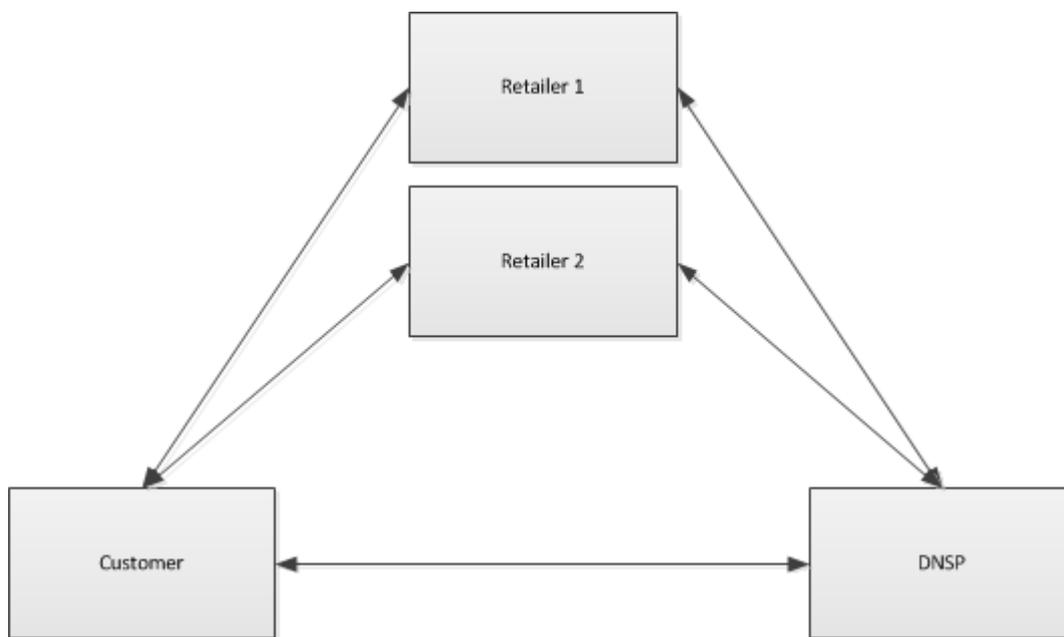
- Obligations and responsibilities of the DNSP to connect a customer, including the information a DNSP must provide to customers.
- A requirement for DNSPs to establish a dispute resolution processes for negotiated connection contracts.
- Other obligations on DNSPs including a requirement to comply with applicable service standards, maintaining a fault reporting and correction facility and interpreter services.
- Interruption to supply obligations.

Relationship between DNSP and retailer:

- Requirements for DNSPs and retailers to cooperate and assist one another as needed.
- Information sharing processes.
- Customer enquiry referral processes.
- Notification of de/re-energisation of a premises and liability for ongoing charges.

AEMO's proposed framework would change the nature of the tripartite relationship between customer, retailer and DNSP. Under AEMO's framework, each customer may have a relationship with multiple retailers, and each of those retailers would have a relationship with the DNSP. This is illustrated in Figure 4.6.

Figure 4.6 Shared customer relationship - AEMO's proposed MTR framework



AEMO's proposed MTR framework may create a number of issues related to the tripartite relationship between DNSPs, customers and retailers. Generally, it may be necessary to amend the existing arrangements in the NERR to account for the presence of multiple retailers at a premises with one connection point. For example, new arrangements may be needed in terms of notifications, information sharing and customer enquiry referrals between multiple retailers and the DNSP at a premises. It may also be necessary to reconsider the nature of the relationship between customer and DNSP, if multiple retailers are present at a premises.

These issues may not arise if the customer enables MTR through establishing a second connection point, as the customer will have multiple contractual relationships with its retailers, while maintaining its existing relationship with its DNSP.

Billing cycles

Section 24 of the NERR establishes requirements for the frequency of billing cycles for retailers offering standard contracts, with a requirement for bills to be issued at least once every three months. However, retailers are free to agree with customers for billing cycles with different periods.

Issues related to the coordination and relationship of billing cycles may arise under certain metering configurations. In particular, under a subtractive metering configuration, some coordination may be required between the billing cycle of the upstream and downstream meters, as each bill will depend on information from both

meters. This coordination may create issues, particularly if different FRMPs cannot agree on a common billing cycle between meters in a subtractive metering arrangement.

Question 11 Relationship between DNSPs, customers and retailers

- 1. Will the current tripartite arrangements require adjustment to allow for multiple trading relationships?**
- 2. Does this issue only arise under AEMO's proposed MTR framework, or also where a customer has established MTR supported by two connection points?**
- 3. Are there any issues related to the coordination of billing cycles between multiple FRMPs at a premises that would need to be addressed in the NERR?**

4.3.6 De-energisation and disconnection arrangements

Requirements and obligations related to the de-energisation and re-energisation of a premises are set out in Part 6 of the NERR. These include:

- requirements for retailers to provide bill payment reminder notices and disconnection warning notices to customers;
- processes for retailers to request DNSP de-energisation of a premises, including restrictions;
- processes for DNSP de-energisation of a premises, including restrictions; and
- processes for re-energisation of a premises.

Disconnection may be more complex where a consumer has established multiple trading relationships with different retailers, particularly where this is supported by a subtractive metering arrangement. Under subtractive metering, energy supply to a "downstream" meter is dependent on supply to the "upstream" meter.⁴⁸ Issues may arise where one retailer is responsible for supply at the upstream meter and a different retailer is responsible for the downstream meter; if the first retailer requests de-energisation of its upstream meter, the down stream meter of the second retailer will also be de-energised.

In its rule change request, AEMO suggested that, where possible, settlement points should be capable of independent disconnection. However, it also noted this may not be possible where MTR is supported by subtractive metering. AEMO therefore proposed that a DNSP should be allowed to de-energise both settlement points at a premises, even where the grounds for disconnection stem from circumstances affecting

⁴⁸ More information on different metering configurations is provided in Appendix B.

only one of the settlement points. AEMO also argued that the retailer requesting de-energisation should be able to do so without any liability for the de-energisation of any other settlement points.⁴⁹

The Competition in metering rule change introduces the ability for retailers to arrange remote de-energisation of a premises directly, through the Metering Coordinator, and requires the retailer to notify the relevant DNSP when this occurs. Under an MTR arrangement, a retailer's ability to arrange de-energisation may be restricted to the specific settlement point or connection point for which it is financially responsible. However, the same issues related to subsequent de-energisation under a subtractive metering configuration would remain.

Issues related to disconnection may not arise where MTR is supported by a second connection point, as long as each connection point is electrically isolated and capable of independent disconnection.

There are a number of issues related to de-energisation and re-energisation that the Commission may consider in its assessment of AEMO's rule change request. These include:

- **Impact on viability of different energy services:** The prospect of being de-energised by a third party may affect the viability of new energy services. This may impact on the extent to which MTR may support competition and the provision of new and innovative services to consumers.
- **Impact on customers:** Similarly, customers may face substantial impacts if disconnection at one settlement point resulted in a loss of supply to another settlement point.
- **Relevance of metering configurations:** As discussed above, issues related to disconnection may be particularly relevant where a subtractive metering configuration has been used to enable MTR. These issues may not arise where a parallel metering configuration is adopted, as long as each meter at each settlement point is capable of independent disconnection.

Question 12 De-energisation and disconnection arrangements

- 1. Should DNSPs and FRMPs be able to de-energise a settlement point if this results in the subsequent de-energisation of a "downstream" settlement point?**
- 2. How is the metering configuration adopted by a consumer relevant to disconnection issues? Do these issues arise only where a subtractive metering configuration is adopted?**

⁴⁹ AEMO's rule change request was submitted to the AEMC prior to the publication of the Competition in metering rule change and therefore did not address the prospect of a FRMP arranging disconnection directly with a Metering Coordinator.

- 3. Would the prospect of disconnection of a downstream settlement point deter potential new energy service providers from entering the market? Are additional safeguard mechanisms needed to deal with third party disconnection?**

4.3.7 Life support equipment

Requirements and obligations related to the de-energisation and re-energisation of a premises with life support equipment are set out in Part 7 of the NERR. These include:

- a requirement for a retailer to register and advise the relevant DNSP of a premises with life support equipment;
- a requirement for a DNSP to register a premises with life support equipment and to provide the customer with information to assist in managing supply interruptions; and
- restrictions on the de-energisation of a premises with life support equipment by both retailers and DNSPs.

The Competition in metering draft rule change determination addresses a number of changes to the life support notification arrangements, including a requirement for DNSPs to advise the relevant retailer where life support equipment is installed at a premises. The Commission considered that requiring both DNSPs and retailers to maintain a register and to advise each other of life support equipment at a premises would help address the risk of disconnection of life support equipment.

New arrangements may be necessary to manage these risks under MTR arrangements. In its rule change request, AEMO proposed that registration of life support equipment should occur at the level of individual settlement points, rather than at the level of the premises as under current arrangements. AEMO also recommended that all settlement points at such a premises should be registered as having life support equipment, to avoid the risk of inadvertent disconnection due to subtractive or other metering configuration. AEMO also proposed mutual notification requirements between each retailer at a premises and the relevant DNSP.

The risk of disconnection of life support equipment may be reduced where MTR is supported by a second connection point, as long as each connection point is electrically isolated and capable of independent disconnection.

The Commission is required to consider whether any changes to the NERR are compatible with the development and application of consumer protections for small customers. This includes addressing the risk of disconnection of life support equipment.

Question 13 Life support equipment

- 1. How should the risk of disconnection of life support equipment be managed where an MTR arrangement is in place? Are the new requirements proposed by AEMO sufficient to manage this risk?**
- 2. Are the risks of disconnection of life support equipment affected by the specific metering configuration used by a consumer to enable MTR? Would the risks of disconnection of life support equipment be any different where MTR was supported by a second connection point?**

4.3.8 Standing offer and deemed customer arrangements

The NERL determines a specific retailer as the *designated retailer* for a premises. Part 2 of the NERR then requires the designated retailer to make its standing offer available to the customer at a premises, unless the customer is a small market offer customer.⁵⁰

The NERL also establishes deemed customer retail arrangements between the retailer for a premises and a move in or carry over customer.⁵¹ Part 2 of the NERR then sets out responsibilities for the retailer at a premises once a customer begins consuming energy under a deemed customer retail arrangement.

Under an MTR arrangement, multiple retailers may be active at a premises. Issues may arise as to which of these retailers should be required to make a standing offer available to the customer, or whether deemed customer arrangements should apply to all the retailers active at a premises.

Question 14 Standing offer and deemed customer arrangements

- 1. If multiple retailers are active at a premises with MTR, should all of these retailers be required to make the standing offer available? If not, which retailer should have this responsibility?**
- 2. Would this issue arise where MTR was supported by a second connection point?**

4.4 Implementation

There are a number of matters that may be relevant to the potential implementation of AEMO's proposed MTR framework, including several related AEMC projects. The implementation of AEMO's proposed MTR framework could also require subsequent

⁵⁰ The Commission notes that the NERR clauses that establish the small market offer class of customer have not been activated in any NECF jurisdiction.

⁵¹ A carry over customer refers to a customer whose previously current retail contract expires. Move in customer refers to a customer who starts consuming energy without a contract.

changes to be made to AEMO procedures, while jurisdictional retail codes could also need adjustment.

4.4.1 Related AEMC project implementation

AEMO did not propose a detailed timeframe for implementation of its proposed MTR framework. However, it noted in its rule change request that there may be potential synergies in the timing of the proposed changes with other recommendations arising out of the Power of choice review, particularly as these may be relevant to the costs of adapting software systems.⁵²

The Commission, AEMO and the AER have been working together to develop an implementation work plan for the Power of choice recommendations. This work plan has grouped relevant projects into two stages for implementation. Stage 1 includes the following projects for coordinated implementation to the extent possible:

- Expanding Competition in Metering and Related Services rule change.
- Embedded Networks rule change.
- Implementation advice on Shared Market Protocol.

Stage 2 of implementation of the Power of Choice initiatives is expected to include AEMO's MTR rule change and the Demand Response Mechanism rule change, if a rule change is made by the Commission in response to these two rule change requests. These two rule changes will be considered subsequently to the above projects.

4.4.2 Changes to AEMO procedures, jurisdictional matters and the NERL

AEMO has identified that if the Commission makes a rule in response to AEMO's rule change request, changes may be needed to the following:

- MSATS procedures;
- metrology procedures;
- business to business (B2B) procedures;
- NMI procedures;
- NMI standing data document; and
- service level procedures.

If the Commission makes a NERR change in response to AEMO's rule change request, this will apply to all jurisdictions who have adopted the NECF. In Victoria, retail market arrangements are instead subject to the Victorian Retail Code, administered by

⁵² AEMO, rule change request, p.26.

the Essential Services Commission of Victoria (ESC). It is the decision of the ESC as to whether it reviews the Victorian Retail Code, if the Commission makes a rule in response to AEMO's rule change request.

AEMO's rule change request states that its proposed MTR framework would not have any implications for the retailer of last resort (RoLR) mechanism. However, the RoLR arrangements are currently established in the NERL and refer explicitly to the appointment of a RoLR to a connection point. Implementation of AEMO's proposed MTR framework would therefore require subsequent changes to be made to the NERL.

Question 15 Implementation

- 1. Are there potential synergies available from implementing any rule made in response to AEMO's rule change request in co-ordination with any rule made in response to the Demand Response Mechanism rule change? If so, to what extent?**
- 2. What are the potential timeframes for implementing AEMO's proposed MTR framework? Do stakeholders have any specific suggestions to transitional implementation timeframes?**
- 3. Are there any other subsequent changes to AEMO procedures or jurisdictional codes that will need to be made following any rule made in response to AEMO's rule change request?**
- 4. What changes may be needed to the RoLR arrangements to allow for AEMO's proposed MTR framework?**

5 Lodging a submission

The Commission invites written submission on this rule change proposal.⁵³ Submissions are to be lodged online or by mail by 10 September 2015 in accordance with the following requirements.

Where practicable, submissions should be prepared in accordance with the Commission's Guidelines for making written submissions on rule change requests⁵⁴ The Commission publishes all submissions on its website subject to a claim of confidentiality.

All enquiries on this project should be addressed to Christiaan Zuur on (02) 8296 7800.

5.1 Lodging a submission electronically

Electronic submissions must be lodged online via the Commission's website, www.aemc.gov.au, using the "lodge a submission" function and selecting the project reference code ["ERC0181"]. The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Upon receipt of the electronic submission, the Commission will issue a confirmation email. If this confirmation email is not received within three business days, it is the submitter's responsibility to ensure the submission has been delivered successfully.

5.2 Lodging a submission by mail or fax

The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated. The submission should be sent by mail to:

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

The envelope must be clearly marked with the project reference code: ERC0181.

Alternatively, the submission may be sent by fax to (02) 8296 7899.

Except in circumstances where the submission has been received electronically, upon receipt of the hardcopy submission the Commission will issue a confirmation letter.

If this confirmation letter is not received within three business days, it is the submitter's responsibility to ensure successful delivery of the submission has occurred.

⁵³ The Commission published a notice under s. 95 of the NEL and s. 251 of the NERL to commence this rule change request.

⁵⁴ This guideline is available on the Commission's website.

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
Commission	See AEMC
DG	Distributed generation
DMIS	Demand management incentive scheme
DNSP	Distribution network service providers
FRMP	Financially responsible market participant
LNSP	Local network service provider
NECF	National Energy Customer Framework
NEL	National Electricity Law
NEM	National electricity market
NEO	National Electricity Objective
NER	National Electricity Rules
NERL	National Energy Retail Law
NERO	National Energy Retail Objective
NERR	National Electricity Retail Rules
NMI	National metering identifier

A Previous relevant projects

A number of historical projects will be relevant to the Commission's assessment of this rule change request. These projects are summarised below.

A.1 Energy Market Arrangements for Electric and Natural Gas Vehicles

In 2012, the AEMC completed its *Energy Market Arrangements for Electric and Natural Gas Vehicles* review (the EV Review). The EV review was conducted in tandem with the Power of choice review, which set out a substantial reform package for the NEM. Both of these reviews explored ways in which households, businesses and industry could be provided with more choice about the way they use and how much they spend on electricity.

The particular focus of the EV review was on the market arrangements necessary for the economically efficient uptake of electric and natural gas vehicles in the NEM. This included consideration of how NEM metering arrangements could enhance consumer choice and facilitate efficient charging of electric vehicles. A key recommendation of the review was that a consumer should be able to engage with a different FRMP at its premises for different loads, such as an electric vehicle.

To achieve this, it was proposed that the concept of "connection point" should be separated from "settlement point". The new definition of settlement point would allow a consumer to establish a second metering installation at a premises, without having to establish a second connection point. This would allow a consumer to use multiple meters to measure the consumption of parts of its load, potentially engaging with a different FRMP for each part of its load.

The EV review made a number of other recommendations related to allowing consumers to engage with multiple FRMPs at a single premises, including:

- requiring each settlement point to be capable of independent disconnection, except where a subtractive metering arrangement exists;
- apportioning variable distribution use of system (DUOS) network charges to different participants in a manner that is proportional to their impact on total DUOS, with all fixed DUOS charges allocated to a "primary" FRMP and any demand based charges allocated in proportion to each FRMP's coincident contribution to peak demand; and
- defined processes for switching FRMPs, changes to metering installations, move-ins and billing enquiries.

The EV review also recommended that consumers should be able to utilise subtractive metering arrangements at a premises. It was argued this may reduce costs to consumers, by removing the need for the establishment of a second metering

installation at the mains switchboard. Betterplace, an electric vehicle provider, suggested this could provide savings of between \$1000 and \$8000.⁵⁵

Finally, it was also recommended that, in the long-term, individual measurement elements in a multi-element meter should be regarded as a separate metering installations. This would allow individual measurement elements to be assigned to different FRMPs. It was also recommended that only one responsible person / metering co-ordinator be allowed where a multiple element meters has been installed.

A.2 Multiple Trading Relationships High Level Design

Following completion of the EV Review, AEMO was requested by the Standing Council on Energy and Resources (SCER, now the COAG Energy Council) to develop a plan for the design and implementation of multiple trading relationships at a site.⁵⁶

AEMO's high level MTR design was developed by AEMO in conjunction with an industry working group.⁵⁷ It contained a number of specific recommendations for the design of a framework to facilitate MTR. Key aspects of this design included:

- MTR would only one apply at a premises with one customer and one connection point;
- Participation in MTR would be voluntary;
- There could be multiple settlement points at a connection point, with each settlement point associated with a metering element and a NMI;
- All settlement points would be capable of independent disconnection, with any exceptions determined through specific processes;
- An MSATS discovery query would allow for the identification of all national metering identifiers (NMIs), and hence settlement points, at a premises;
- Where parallel metering arrangements are in place, each metering installation could have a different responsible person and metering service providers. New arrangements would be needed for monitoring to reduce the risk of lost energy;
- Where subtractive metering arrangements are in place, or where multiple settlement points existed within one meter (multi element meters) each metering installation would have only one responsible person, with metering service providers determined by that responsible person;

⁵⁵ The Commission did not verify these cost estimates. More information is available in Betterplace's submission to the Approach paper for the EV review.

⁵⁶ AEMO was also directed to develop a design to improve metering and other arrangements in embedded networks.

⁵⁷ AEMO's high level design was not published.

- Fixed DUOS charges would by default apply to only one settlements point at a customer's premises, unless another allocation methodology was agreed between the network service provider and the customer;
- A new connection at a "greenfield site" will need to register with a single settlements point, with MTR applied only once a settlement point for the customer's premises is in place;
- Retailer of Last Resort (RoLR) provisions will be extended to settlements points, with settlements points transferring to the RoLR for the connection point in such events;
- The Local FRMP for a connection point should continue to have an obligation to supply the customer at that connection point;
- MTR would be available at the parent connection point and at NEM Customer connection points within Embedded Networks;⁵⁸

AEMO intended that this high level design would form the starting point for the development of a more detailed design, which would in turn form the basis of a rule change request. Prior to submitting a rule change, however, AEMO engaged Jacobs SKM to undertake a cost benefit assessment of its proposed high level design.

A.3 Cost benefit analysis of AEMO's high level MTR design

AEMO requested Jacobs SKM to undertake a cost benefit analysis of the MTR high level design described above, as well as embedded networks. Jacobs considered various "rollout" scenarios, which included the separate and the combined implementation of MTR and embedded networks. A copy of Jacobs cost benefit assessment of AEMO's high level design of provided ⁵⁹

Jacobs considered the various benefits potentially provided by MTR, such as changes in levels of competition in the wholesale and retail markets and the development of a more service oriented retail sector.

Costs were determined through a survey of FRMPs and DNSPs and included costs associated with registration and setup, metering, operational management, billing and reporting.

Jacobs also undertook various sensitivities, reflecting different uptake scenarios of MTR, as well as different cost scenarios.

Overall, Jacobs found overall costs for MTR under most scenarios.⁶⁰ Jacobs advised that this reflects the fact that the rate of adoption of MTR is assumed to be slow, with

⁵⁸ The Commission understands that this refers to a an "on market" customer that purchases its energy through the NEM, not the embedded network reseller.

⁵⁹ Jacobs SKM, *Benefits and Costs of Multiple Trading Relationships and Embedded Networks*, May 2014.

⁶⁰ Positive benefits were identified in the embedded network only scenarios, albeit after 2035.

benefits deferred until 5 years after implementation, while implementation costs are borne upfront. Net positive benefits for MTR were only identified in one sensitivity, where high levels of uptake and low costs of implementation were assumed.

Jacobs identified some caveats regarding its findings:

- Results were highly dependent on assumptions about demand growth, as network benefits associated with MTR are related to deferred network augmentation. If peak demand growth is flatter than AEMO's then medium growth peak demand scenario, the modelled benefits of MTR were reduced.
- Similarly, assumptions about uptake rates were identified as relatively uncertain, as there are very few prior real world examples on which to base uptake rates. The assumed uptake rates used by Jacobs were accordingly conservative; more aggressive uptake would bring forward the benefits of MTR and affected the final result of the analysis.
- The costs used by Jacobs in its analysis were sourced from retailers, network businesses and AEMO and were not subject to any independent analysis. Jacobs noted that the costs provided by retailers and networks were likely to be conservative due to a lack of detail or of understanding of the changes involved. With better information and more consideration of implementation processes, Jacobs argued that these costs could most likely be reduced.
- Delaying implementation would likely increase the extent of benefits, by deferring network augmentation.
- Jacobs also observed that there are likely to be synergies between implementation of MTR and other DSP market reforms, which may help to reduce costs.

B Metering arrangements

AEMO's proposed MTR framework may allow for MTR supported through a number of different metering configurations. A description of these metering configurations is provided below.

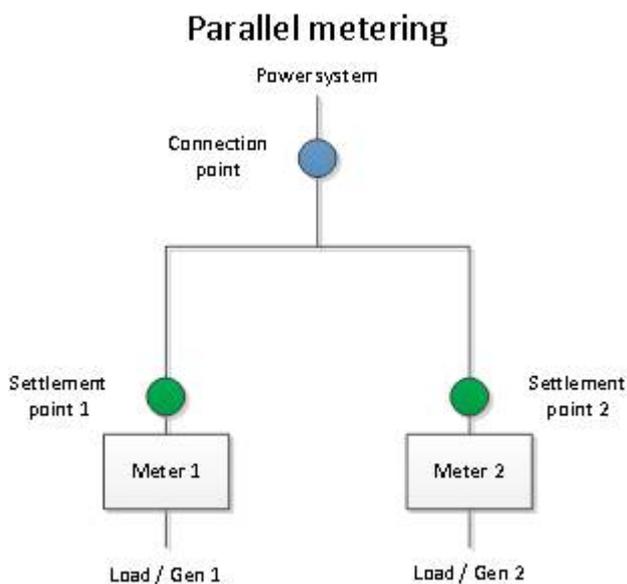
B.1 Parallel metering

Under a parallel metering arrangement a single service line connects the distribution network to the site. The connection point is the agreed point of supply to the site and is likely to be at or near the point at which the service line enters the property.

The settlement points are the points at which electricity is measured. Each settlement point can have its own retailer/FRMP.

Parallel metering broadly reflects the metering arrangements that would exist where two connection points were established at a site. Each of the electrical installations downstream of each meter is electrically isolated.

Figure B.1 Parallel metering configuration



A

B.2 Net metering

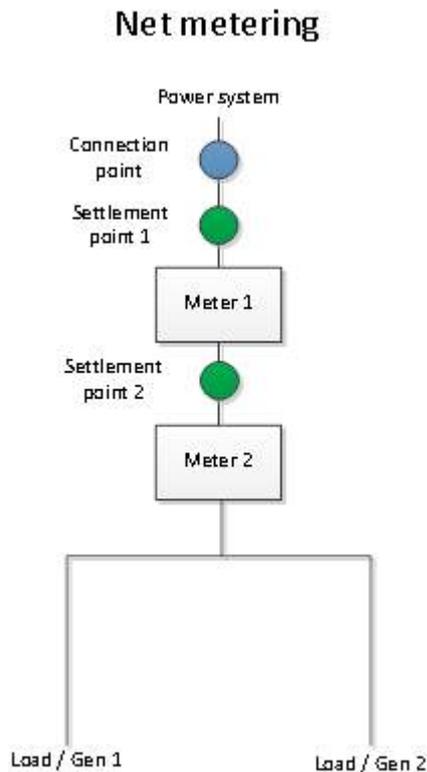
Net metering is essentially a subset of parallel metering, where two meters (or measurement elements) are placed in series, rather than parallel.

Under this arrangement, one settlement point could be associated with one FRMP who is financially responsible for the import of energy to the premises. The second settlement point could be associated with the FRMP who is financially responsible for

the export of energy from DG at the premises. The electrical installations downstream of the two meters are linked and are not electrically isolated.

Metering locations under a net-metering configuration will be similar to the parallel metering configuration. However, net metering configurations are only likely to be suitable for energy services that include distributed generation or storage being exported back into the grid.

Figure B.2 Net metering configuration

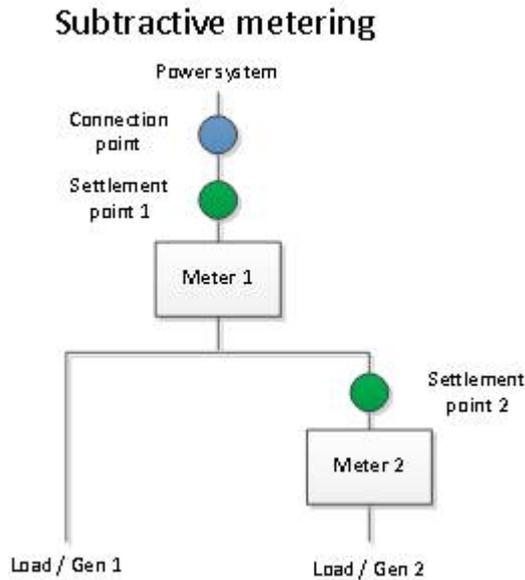


B.3 Subtractive metering

This metering arrangement features a metered settlement point that measures electricity flows from the grid across the boundary of the site (an upstream meter). There is a second settlement point located "downstream" of this meter which can be used to meter a specific load or generation (a downstream meter). There is a direct electrical relationship between the upstream and downstream meter. This means that both meters, and their related electrical installations, are electrically linked to each other and are not isolated. The energisation status of the upstream meter will therefore impact on the downstream meter.

Each of the meters in the subtractive configuration may be located some distance from each other, with the upstream typically located at or near the connection point, and the downstream meter located near the relevant load/generation.

Figure B.3 Subtractive metering configuration



B.4 Multi element metering

Multi element meters contain more than one measurement element within the same meter. Each of these measurement elements may have its own NMI, be considered a settlement point and be allocated to a different FRMP. Each of the electrical installations downstream of each element are electrically isolated.

Figure B.4 Multi element metering configuration

