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Management Company Ltd

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Melbourne

8 December 2006

Manager, MCE Secretariat,
Department of Industry, Tourism and Resources,
GPO Box 9839
Canberra, ACT 2601

Dear Sir

**Retail Policy Working Group
National Framework for Distribution and Retail Regulation
Working Paper 1**

Thank you for the opportunity to comment on Working Paper 1 of November 2006. NEMMCO's comments, as raised at the 30 November Stakeholder Reference Group meeting, are provided below. We don't have comments on the retailer obligations defined in Working Paper 1, but recommend that further clarification of obligations in the areas below would improve NEM (National Electricity Market) efficiency, facilitate retail competition and benefit end-use consumers.

1. Rights of access to metering data

There is a lack of clarity in current jurisdictional instruments about an end-use consumer's right of access to metering data and there is confusion about obligations in the NEM because of the use of the term *Customer* in National Electricity Rules (the Rules). The Rules require metering data to be kept confidential, and they define rights of access to the data for Registered Participants, including "any *Customer* who is registered with NEMMCO" (see Rules clause 7.7). However, the *Customer* referred to in the Rules is the retailer, not the end-use consumer (unless the consumer registers with NEMMCO, which does not normally happen). Consequently, some retailers and metering service providers advise end-use consumers that metering data is confidential and that they are not able to provide the data to the consumer except as part of the retail bill. Advice from the jurisdictions is that end-use consumers are to be provided with access to their metering installation data, subject to relevant commercial arrangements being negotiated with the retailer.

The increasing use of half-hourly interval meters may exacerbate this confusion, since it is not anticipated that consumer bills will provide half-hourly data. To remove doubt, there may be value in placing obligations on the retailer who is financially responsible for supplying electricity to an end-use consumer to facilitate access by the end-use consumer to consumption data and metering installation details associated with their point of supply (and similar obligations on the distribution network service provider may also be appropriate).

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2. Embedded Networks

It could be implied from Working Paper 1 that retailer obligations will apply at all consumer supply points, including within privately owned distribution networks "embedded" within registered distribution networks (e.g. within a retirement village; shopping centre; apartment building; etc). Embedded networks have proven to be problematic in the NEM where the private network owner has an exemption from compliance with jurisdictional licence obligations and NEM network service provider obligations. The exemptions make it difficult to obtain connection point and metering details required for consumer transfer and market settlement unless the owners of the embedded networks have obligations to provide access to these details, and retailers (and registered Distribution Network Service Providers) have obligations to facilitate the identification of the details.

The attached prepublication draft of an issues paper being developed with the assistance of NEM participants summarises embedded network issues in the NEM. The paper proposes that NEM procedures be amended to clarify that the retailer and the registered Distribution Network Service Provider (DNSP) at a connection point that feeds an embedded network are required to negotiate embedded consumer metering details where the consumer is supplied by a retailer other than their local retailer. To support these arrangements, it would be useful if Working Paper 1 included obligations requiring retailers to arrange for the identification of connection point and metering details for each of their consumer supply points, and advise relevant details to NEMMCO, in agreement with the registered DNSP, including where a consumer embedded within a privately owned network is supplied by a retailer other than their local retailer. It would also be helpful if corresponding obligations were included in DNSP obligations (Working Paper 2).

3. Consumer protection matters

By the end of December 2006, second-tier metering arrangements (where the consumer is supplied by a retailer other than the designated local retailer in their supply area) will be transferred from jurisdictional Metrology Procedures into a single NEM Metrology Procedure, with ongoing metrology being coordination by NEMMCO. First-tier metering arrangements (where the consumer is supplied by the designated local retailer in their supply area) will be transferred from 12 jurisdictional codes and rules into the single NEM Metrology Procedure during 2007. Proposals to integrate first-tier metrology arrangements in National Electricity Rules and the NEM Metrology Procedure are currently being finalised.

Consumer protection matters addressed in the jurisdictional instruments are not being transferred into the NEM Metrology Procedure. Industry representatives working with NEMMCO on the review of metrology arrangements recommend that these consumer protection matters should be harmonised across the jurisdictions. NEMMCO is collating these matters for provision to each jurisdiction with a recommendation that they consider developing a uniform set of consumer protection obligations. An option may be to address the relevant obligations in Working Paper 1. We will discuss this option with the jurisdictions by the end of December and with their support will submit the list of consumer protection matters identified from our review for consideration in Working Paper 1.

Yours sincerely,

D Mike Robson
Head of Retail Market Development
Enc.

Embedded Networks and Retail Competition

Prepared by: Retail Market Development

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PREPUBLICATION DRAFT

1. Executive Summary

This paper identifies the conditions necessary for retail competition to be available for an individual consumer within a network that is embedded within a registered distribution network, and develops principles that will guide work on the National Electricity Rules (Rules) and obligations applicable to embedded networks.

Based on the current Rules requirements and the guiding principles, the paper proposes changes to the NEM Metrology Procedure and the MSATS Procedures to ensure alignment with the Rules.

Although not essential to the primary thrust of the paper, amendment to the Rules glossary is proposed to facilitate a harmonised definition of 'embedded network', 'parent metering point', and 'child metering point' across the NEM, thereby improving clarity of obligations.

The paper does not attempt to address matters within policy areas, such as whether consumers within an embedded network should have access to retail competition, whether small scale on-selling should be licensed, or whether the Australian Energy Regulator (AER) should exempt network operators from registration.

The recommendations of this paper are based on the position that the determination of the connection point, and the subsequent determination of the Responsible Person for the connection point for contestable customers must be

established in accordance with the Rules, and the Metrology Procedure and the MSATS Procedures are unable to amend the requirements of the Rules.

Summary of recommended changes

Propose amendments to the Metrology Procedure:

- Remove reference to determination of Responsible Person in the Metrology Procedure.
- Remove the differences in approach toward the requirements for interval metering within an embedded network.
- Establish common definitions for terms used in relation to embedded networks across jurisdictions.

Propose amendments to the MSATS Procedures:

- Remove the requirement for the Retailer at the parent connection point to act as a de facto Network Service Provider (NSP) within the embedded network.

Propose amendments to the Rules:

- Introduce definitions of embedded networks, parent metering point, and child metering point into the glossary of the Rules.
- Propose a Rule requirement for a common Metering Data Provider to be appointed for all connection points within an embedded network.

2. NEM Framework to support Retail Competition

NEMMCO facilitates retail competition (choice of retailer) within the NEM through the registration of consumer loads against retailers within the Market Settlement and Transfer Solution (MSATS) system. The retail competition processes facilitated by MSATS are regulated by the National Electricity Rules (the Rules) and procedures under the Rules (e.g. MSATS Procedures and Metrology Procedures).

The resultant retail competition framework for all consumers that have competition available is predicated upon the following conditions being met:

- An agreed point of supply (the connection point) that exists between the NSP's network and the market customer's (Retailer) load.
- A network service provider, to register with NEMMCO (through MSATS) the connection point between the consumer load and the distribution network;
- A party (the "Responsible Person") responsible for engaging a service provider (Metering Provider) to install and maintain the metering installation for each connection point;
- A metering installation, installed and maintained by an accredited metering provider, for each connection point;

- A market customer, to register the consumer load with the NEM and accept financial responsibility for the energy delivered from the market to the consumer load; and
- An registered metering service provider, (the "Metering Data Provider") charged with responsibility for the collection of metering data from the metering installation.

3. Retail Competition Principles within embedded networks

To assist in the consideration of issues and analysis of individual network scenarios, NEMMCO has developed a list of principles. This section discusses these principles and the rationale behind them.

Recognition of embedded networks within the current Rules structure is only possible through a harmonisation of Metrology Procedure requirements and MSATS Procedure requirements in relation to embedded networks, to ensure that the Metrology Procedure and MSATS Procedures are consistent with the Rules.

Principle 1:

The recognition of an embedded network by the Rules and the NEM metrology framework should promote the NEM objectives.

The need for Rules or guidelines for the management of embedded networks was initially identified during the preparations for full retail competition in New South Wales and Victoria in 2000. Although NEMMCO established procedures for managing customer transfers within embedded networks, difficulties have arisen with the application of these procedures. These difficulties have highlighted that a broad range of situations found within the NEM are viewed to exist as embedded networks, however the definition of embedded network does not exist within the Rules, and the definitions contained within jurisdictional metrology procedures are not consistent. Further, the definition of embedded network is sometimes used to describe a network not operated by an NSP, or does not have an NSP. The current looseness of terminology contributes to inefficiencies in the NEM, which is contrary to the NEM objective, and hence should be addressed.

This leads to a principle which should be applied to any resolution of embedded network issues:

Principle 2:

A single structure of terminology is desirable across metrology issues, to facilitate analysis and understanding of metrology issues and the application of NEM and jurisdictional Rules; metrology glossary terms should be harmonised across the Rules, metrology procedures, and jurisdictional metrology instruments.

The MSATS procedures provide a mechanism for the settlement of energy against market customers where the consumer is supplied from within an embedded network. These procedures also provide a mechanism for the management of consumer transfers within an embedded network, to facilitate retail competition for consumers. However these procedures require regulatory

certainty to ensure their efficacy, and may or may not be supported by jurisdictional policy. The Rules and NEM metrology procedure needs to take account of these jurisdictional differences:

Principle 3:

Retail competition can be authorised for embedded networks where the framework for retail competition (section 3) is met.

Independent of the NEMMCO registration of market customers, jurisdictions have diverse licensing arrangements for retailers and authorities to resell electricity. The NEM processes to facilitate retail competition in embedded networks should not be a surrogate for regulatory management of connection arrangements nor should they impinge on the licensing or exemption processes managed by jurisdictions and the AER.

4. Background

4.1. Context

Retail Competition (choice of retailer) is the mechanism whereby much of the benefits of the NEM are transferred to the consumer. Retail competition is reliant on the registration of consumers against retailers and the accurate allocation of energy deliveries to the consumer against the relevant retailer in the settlement process.

The registration of contestable loads and their orderly transfer between retailers is managed through the Market Settlement and Transfer Solution (MSATS) system. The transfer processes are documented within the MSATS Procedures while the metrology requirements are documented in the NEM Metrology Procedure. Both these documents rely on the Rules for their head of power.

The MSATS Procedures have been developed by industry participants to describe the processes to be followed by industry to facilitate consumer transfer between retailers. In contrast, the Rules were written without an anticipation of embedded networks, and the Metrology Procedure has jurisdictional differences that reflect particular local issues.

Several policy matters have an influence on competition for customers in embedded networks. Activity under the auspices of the Ministerial Council on Energy (MCE) will result in the transfer of network regulation matters from jurisdictional regulators to the AER. In addition, Government policy in Victoria will lead to the rollout of an advanced metering infrastructure, and government policy in Queensland is resulting in significant competition and ownership changes.

In this context the Embedded Networks project is contributing to the broad objectives of simplifying and harmonising metrology requirements across jurisdictions and clarifying the roles and obligations of registered participants and service providers.

As with all projects within the NEM which might ultimately require amendment to the Rules, the deliverables of this project must address the NEM objective, which is:

"The national electricity market objective is to promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system."

4.2. Scope

The primary objective of this project is to establish a framework to facilitate retail competition (choice of retailer) for consumers supplied from an embedded network within the NEM framework, and remove ambiguity from existing instruments.

There are three broad sources of uncertainty for NEM participants, network operators, service providers, and embedded network owners/operators in relation to electricity supply within embedded and exempt networks. These are:

- Retail Market issues, including the registration of connection points, allocation of NEMIs, and installation and maintenance of metering equipment;
- Connection arrangement issues, including the physical connection arrangements, the role of the network owner, and the location and housing of meter equipment; and
- Operational connection issues, including network billing, connection/disconnection, quality-of-supply, guaranteed service levels and consumer protection.

The scope of this project is focussed on addressing market issues, particularly reducing regulatory uncertainty and clarifying the roles and obligations of registered participants. At the completion of this project the application of the NEM metrology framework to embedded networks will be clarified for NEM participants, Distribution Network Service Providers and Metering Providers.

Jurisdictional policy matters are outside the project scope. This generally includes issues associated with connection arrangements, consumer matters, small scale reselling, legacy arrangements, jurisdictional licensing and exemptions. There is a significant related jurisdictional policy issue as to whether competition is available in exempt networks.

Network operational and performance issues are also outside the scope of this project.

A report on the connection issues which are beyond the scope of this project to resolve, for the purpose of informing jurisdictional regulators and policy makers of the barriers to retail competition for consumers supplied from embedded networks will be delivered in February 2007.

This will include reference to the AER network exemption process (see attachment B).

To deliver the objectives of this project it will be necessary to clarify participant obligations in relation to metrology and consumer transfers, align the requirements of the National Electricity Rules, the NEM Metrology Procedures and the CATS Procedures, and facilitate the harmonisation of jurisdictional arrangements for embedded networks in the NEM to the extent that jurisdictional policy permits retail competition within embedded networks.

4.3. Deliverables

The deliverables of this project are:

- Proposals for amendments to the Rules, to assist in the removal of inconsistencies between the Rules and the NEM Metrology Procedures;
- Proposals for amendments to the NEM Metrology Procedures to harmonise metrology procedure definitions between jurisdictions, and align obligations with Rules requirements; and
- Proposals for amendments to the MSATS Procedures that facilitate provision of choice of retailer within embedded networks and align obligations with the Rules.
- A report on the connection issues which are beyond the scope of the project to resolve, for the purpose of informing jurisdictional regulators and policy makers of the barriers to retail competition for consumers supplied from embedded networks

5. Clarification of obligations

5.1. Responsible Person obligations

The key questions which arose throughout NEMMCO's analysis of embedded networks issues revolved around ensuring responsibility for the metering installation and determining the Responsible Person. The jurisdictional Metrology Procedures in Victoria, New South Wales and South Australia had sought to make the Local Network Service Provider the Responsible Person in all cases, while the MSATS Procedures had sought to make the Financially Responsible Market Participant for the parent connection point the Responsible Person for all downstream (child) connection points.

There are strong supporting arguments for the RP role being allocated to either the NSP or the FRMP. NEMMCO's conclusion is that the determination of the Responsible Person for a connection point is established within the Rules, and it is beyond the scope of a subsidiary document such as the NEM Metrology Procedures or the MSATS Procedures to amend this process.

The Responsible Person role is a key aspect of the market design in relation to installation and maintenance of metering installations, and therefore NEMMCO has concluded that it would be inefficient to pursue a solution for embedded networks based on re-working the area of the Rules relating to determination of the Responsible Person.

The existing approach to determining the Responsible Person in an embedded network (as documented in the jurisdictional Metrology

Procedures) assumes the jurisdictional derogations regarding the Responsible Person remain in place, and is inconsistent with the recent¹ amendments to the Rules. [see recommendation 4 below]

5.2. Connection agreements

NEMMCO will accept the registration of embedded networks in those circumstances where a Distribution Network Service Provider (DNSP) is able to identify the network configuration, assign NMIs, and register the connection points for customers supplied by the embedded network into MSATS.

Recommendation 1:

NEMMCO proposes that in order to facilitate retail competition for customers supplied by an embedded network, NEMMCO will only accept the registration of embedded networks in those circumstances where a Distribution Network Service Provider (DNSP) is able to assign NMIs, and register the connection points into MSATS.

5.3. Common Metering Data Provider (MDP) for all connection points associated with an embedded network.

MSATS has the capability to perform settlement operations in an embedded network using differencing, as long as the parent and child relationships are correctly configured initially. To this end, each metering installation in the embedded network may be read by a different MDP, and MSATS will perform the correct operations. However, the issue of network billing complicates this situation. Network billing is often calculated on peak demand and energy consumption, and as each customer will have their peak demand at different times, simple energy differencing will not allow accurate determination of the network billing amount for each customer in the embedded network. In order to calculate the network billing component for the parent and each of the children, the parent MDP would need to obtain the interval data for each child. This is an operationally onerous operation, and will result in making compliance with data delivery timetables for settlement extremely difficult or unlikely. This problem can be mitigated by using a single MDP for the entire embedded network.

Recommendation 2:

NEMMCO proposes that the MDP for all the child metering points in an embedded network is the MDP for the parent metering point.

5.4. Single metering installation type

It is likely that an embedded network will have an energy consumption that requires a parent to have a type 4 metering installation. The children will require type 4 or type 5 metering installations. At present, the accreditation categories for metering data service providers are different for type 4 and type

¹ Metrology Rules determination (no. 17) published by AEMC on 9 November 2006

5 (a legacy from types 1 – 4 metering installations being covered in the Rules, and types 5 – 7 in the jurisdictional metrology procedures), and there is a limited subset of meter data providers that are accredited for both type 4 and type 5 – only 4 out of 17 MDPs are accredited for both types. This could lead to practical problems, and may mean limited competition is available for metering data services. This potential problem can be mitigated by ensuring that all metering installations (parent and children) in an embedded network are of the same type.

Recommendation 3:

NEMMCO proposes that all metering points in an embedded network have interval meters of the same type.

6. Proposed amendments to the Metrology Procedure

6.1. Remove reference to determination of RP in the Metrology Procedure.

Key questions which arose throughout NEMMCO's analysis of embedded networks issues revolved around ensuring responsibility for the metering installation and determining the Responsible Person. The jurisdictional Metrology Procedures in Victoria, New South Wales and South Australia had sought to make the Local Network Service Provider the Responsible Person in all cases, while the MSATS Procedures had sought to make the Financially Responsible Market Participant for the parent connection point the Responsible Person for all downstream (child) connection points.

As previously discussed, NEMMCO's conclusion is that the determination of the Responsible Person for a connection point is established within the Rules, and it is beyond the scope of a subsidiary document such as the NEM Metrology Procedures or the MSATS Procedures to amend this process.

The Responsible Person role is a key aspect of the market design in relation to installation and maintenance of metering installations, and therefore NEMMCO has concluded that it would be inefficient to pursue a solution for embedded networks based on re-working the area of the Rules relating to determination of the Responsible Person.

Recommendation 4:

NEMMCO proposes that clause 2.4.1 of the Metrology Procedure relating to the determination of the Responsible Person is removed from the Metrology Procedure and that the Responsible Person for the metering installation of a customer supplied by an embedded network is determined according to the Rules.

6.2. Subtractive Metering (see attachment A, scenario 2 below)

Subtractive metering is the practice where the energy supplied to the end-use customer has also been registered by a meter used to record the consumption

of another end-use customer. Subtractive metering arises from the fact that the energy usage of one end-use customer is dependent on the arithmetical difference in consumptions recorded on two meters.

The practice commonly arises following property redevelopment and a tenancy arrangement within a property leads to changed responsibilities for energy usage. However the arrangement may also be contrived to facilitate an improved bargaining position for energy purchasing negotiations, or may arise from changes to network arrangements. This situation may also arise in an arrangement where all non-market meters (tenants on a reselling rate, lighting, building services etc) are aggregated together as a single child metering point. This is illustrated in attachment A, scenario 2, below.

The Rules do not make explicit provision for subtractive metering, although Rules clause 7.2.4 implies their existence, and only has effect when some form of subtractive metering is in place.

Within the NEM customer registration and transfer system (MSATS) provisions to manage subtractive metering arrangements are described as relating to embedded networks. Subtractive metering is most commonly associated with embedded networks, and the terms have been widely used interchangeably. This confusion in nomenclature has not assisted in the discussion of these issues within industry.

In line with the discussion in this and previous sections, this paper proposes that subtractive metering be defined within the Rules glossary to distinguish it from embedded networks, and explicitly authorise the making of procedures within the MSATS Procedures for the registration and transfer of connection points where subtractive metering is employed.

Recommendation 5:

The following definition is proposed for *subtractive metering* in the *Metrology Procedure*:

Subtractive metering is the metering practice where the energy supplied to two or more connection points passes through one or more metering point(s) (the parent(s)), and the energy attributable to one of those connection points is determined by subtracting the energy recorded at the other connection point(s) (the child/children).

A new glossary term in the *Metrology Procedure* for *subtractive metering installation* is proposed:

A subtractive metering installation comprises the metering installations associated with the parent metering point(s) and the child metering point(s) which are used to determine energy volumes for a connection point which does not have a single dedicated metering point of its own.

Recommendation:

Choice of retailer is made available to all NMIs in a subtractive metering arrangement.

7. Proposed amendments to the MSATS Procedures

Remove the requirement within the MSATS Procedures for the Retailer at the parent connection point to act as a de facto NSP within the embedded network. The result of this change is that the Responsible Person obligations in the MSATS Procedures will be aligned with the Rules.

Recommendation 6:

That the role requirements for the Responsible Person in the MSATS Procedures are aligned with those in the Rules.

8. Proposed amendments to the Rules

The changes to the Rules which have been identified are not pre-requisite to adopting the proposed approach. This is because the documented approach under the current Rules will continue to perform satisfactorily. It is therefore proposed that the Rules change is incorporated within the Rules change submission for the Integrate First Tier Metrology project in March 2007.

8.1. Introduce definition of embedded networks, parent, and child into the glossary.

8.1.1. Embedded Networks

The term Embedded Network is not used in the Rules, and appears in the metrology procedures for Victoria, New South Wales, South Australia, and Australian Capital Territory as follows:

- The metrology procedures for New South Wales and South Australia define an embedded Network to be “a distribution network to which an end-use customer is connected and where the energy supplied to the end-use customer (being a child) has also been registered by a meter used to record the consumption of another end-use customer (being a parent)”.
- In the Australian Capital Territory an embedded network is defined as “a distribution network in which end-use customers are connected to a distribution network that is not owned, operated or controlled by a licensed Network Service Provider”.
- In Victoria an embedded Network is defined as “a distribution system to which end-use customers are connected that is not owned, operated or controlled by a Distribution System Operator licensed by the Commission and in which the energy supplied to the end-use customers (being children) has also been recorded by a meter used to record the consumption of another end-use customer (being the parent)”.

These definitions link the following characteristics to an *embedded network*:

- An embedded network is part of a distribution network/system;

- End-use customers are connected to the embedded network;
- In two jurisdictions the embedded network is not owned, operated or controlled by a licensed party; and
- In three jurisdictions the energy supplied to the end-use customer has previously been metered by another customer's meter.

This approach in the jurisdictional instruments provides a narrow definition for embedded networks, and does not provide guidance on the requirements that should apply to a network that fails to meet the complete definition. It is difficult to extract a common position for a harmonised definition and process.

The approach proposed by this paper is to separately address these characteristics as follows:

- By defining an embedded network as a distribution network supplied from another distribution network, the opportunity is created to isolate the issues relevant to distribution networks that are not supplied from a transmission network away from the issues relating to network operator and metering;
- By treating networks as "registered" or "exempt", that is whether they are operated by a registered Network Service Provider (NSP) or are exempt from registration, creates an opportunity to deal with the registration issues independently of issues related to how the network is configured and metered; and
- By separating the metering issues from the registration and configuration issues, it is possible to make provisions for "subtractive metering" within the NEM market systems independently of the operator and supply arrangements.

The definitions of *distribution system* and *distribution network* used in the metrology procedures are those from the Rules.

The Rules glossary defines a *distribution network* to be a sub-set of a *network* and a *network* is used for the conveyance of electricity to customers. In the NEM a market customer (Financially Responsible Market Participant or FRMP) is responsible for the energy delivered into the *distribution network*, and other FRMPs are responsible for energy removed from the network. The FRMP of the entry connection into a distribution network is responsible for the differences in energy between the entry and exit points. For national electricity market purposes, it is not necessary to specify whether an unmetered end-use customer is connected to the network, or whether the customers are end-use or market customers. Provided an alternative mechanism is available to denote whether the owner and operator of the network is licensed, then the term embedded network can be restricted to a description of the network configuration.

The definition of embedded network used in the metrology procedure for Victoria is based on the Rules definition of *distribution system*. The definition of a *distribution system* includes both a *distribution network* and the *connection assets* used to service a customer or group of customers at a single connection point. NEMMCO is of the view that the distinction is

not necessary and that *distribution network* be accepted as part of a harmonised definition. This paper further discusses *connection assets* in a later section.

Recommendation 7:

NEMMCO proposes that the following simplified definition of embedded network be adopted for the Rules and the NEM Metrology Procedure:

An embedded network is a distribution network which has a connection point to another distribution network and does not have a connection point to a transmission network.

8.1.2. Parent and Child

In situations where subtractive metering applies there is a need to describe the relationship between the respective connection points or metering points. The industry has tended to use parent and child to describe this relationship. For example, the MSATS Procedures define *child metering point* and *parent metering point* in the following manner:

A child metering point is a metering point downstream of a parent metering point at a connection point with an end-use consumer; energy recorded at the child metering point will be simultaneously recorded at both the parent and child metering points.

A parent metering point is a metering point upstream of a child metering point, at a connection point between an NSP and an embedded network.

An alternative approach is proposed which removes the circular nature of the above definitions, and is consistent with the proposed embedded network definition:

Recommendation 8:

The following glossary terms are adopted in the Rules, for application through the NEM Metrology Procedure and the MSATS Procedures:

A parent metering point is a metering point through which the energy measured is supplied to more than one connection point.

A child metering point is a metering point which has a relationship to a parent metering point such that the arithmetical difference between the energy measured at the parent metering point and the child metering point represents the energy consumption for one or more other connection points.

8.2. Exempt Networks

Although the jurisdictional metrology procedures for the Australian Capital Territory and Victoria include non-licensed network operators in the definition of embedded network, and many networks are both supplied from another distribution network and owned or operated by a party with an exemption from

registration, this introduces additional layers of complexity into the embedded network issues. The management of networks operated by parties who are not registered with NEMMCO is properly the responsibility of regulators and government rather than NEMMCO. Network licensing by jurisdictions (as opposed to registration of NSPs by NEMMCO) and the management of exemptions for the need to register as an NSP by the Australian Energy Regulator are policy and regulatory matters, and hence this paper only addresses these issues incidentally and in the context of NEMMCO's role.

Many NEM procedures require a registered Network Service Provider (NSP) to carry out roles in the customer transfer process. However, when a network operator has been exempted from registration an NSP is not available, and the transfer process will not complete.

NEMMCO can facilitate retail competition for customers supplied by an exempt network if the principles outlined in section 2 are upheld, i.e. there must be:

- An agreed point of supply (the connection point) exists between the NSP's network and the market customer's load.
- A network service provider to register the connection point between the consumer load and the distribution network with NEMMCO (through MSATS);
- A party (the "Responsible Person") responsible for engaging a service provider (Metering Provider) to install and maintain the metering installation for each connection point;
- A metering installation, installed and maintained by an accredited metering provider, for each connection point;
- A market customer (e.g. a Retailer), to register the consumer load into the NEM and accept financial responsibility for the energy delivered from the market to the consumer load; and
- An accredited service provider, (the "Metering Data Provider") charged with responsibility for the collection of metering data from the metering installation.

Recommendations 1 to 8 (above) seek to group the different issues which have been historically collected under the umbrella of embedded networks in a manner that will better facilitate their resolution.

9. Implications of embedded networks project

The logical implications of the above recommendations are:

Rules and metrology procedure are concerned with where competition applies in embedded networks – whether competition is made available is currently a jurisdictional policy decision

Expect a greater role for NSPs where competition is enabled, noting that this would require the embedded network operator to be a registered NSP if they were to perform this role

There is an implication is that if there is not a registered NSP associated with the connection point there cannot be competition in the embedded network

In the case (see attachment A, scenario 3) where competition is made available in an exempt network, the allocation of costs for use of the exempt/embedded network is a policy issue for the Regulators

A registered NSP, by definition, means that the network is not exempt – noting that exemptions have made competition difficult

The Responsible person for metering installations in an embedded network has the potential to be the embedded network operator if registered as an NSP

There is potential for a greater role for the licensed distributors as the relevant NSP for the embedded network, subject to the operation of the connection and other agreements

It may be necessary to manage legacy jurisdictional standing exemptions but aim is ideally that there should be alignment across jurisdictions

There is likely to be a range of retail market and customers protection issues

10. Recommended Way Forward

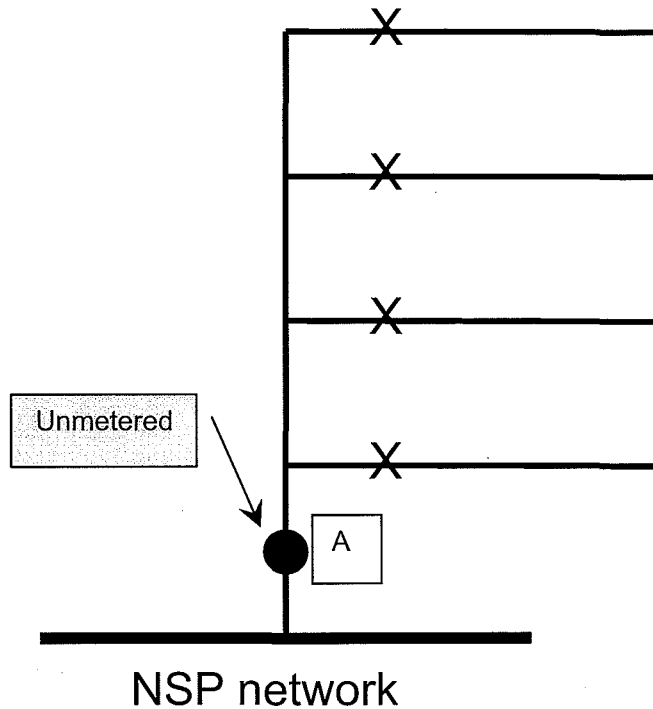
Subject to the endorsement of the Retail Market Executive Committee of the proposed changes to the Metrology Procedure and MSATS Procedures, NEMMCO will undertake the necessary consultations to effect these amendments.

The proposals to amend the Rules will be appended to the Rules change proposal for the Integrate First Tier Metrology project, and will be submitted to the AEMC.

ATTACHMENT A: SCENARIOS

This section describes the implications of the above approach for various types of network scenarios and examines the way they may be managed/implemented under the proposals outlined in this paper.

Scenario 1 – Private network with no parent meter



- Connection Point (to NSP)
- X Metering Point

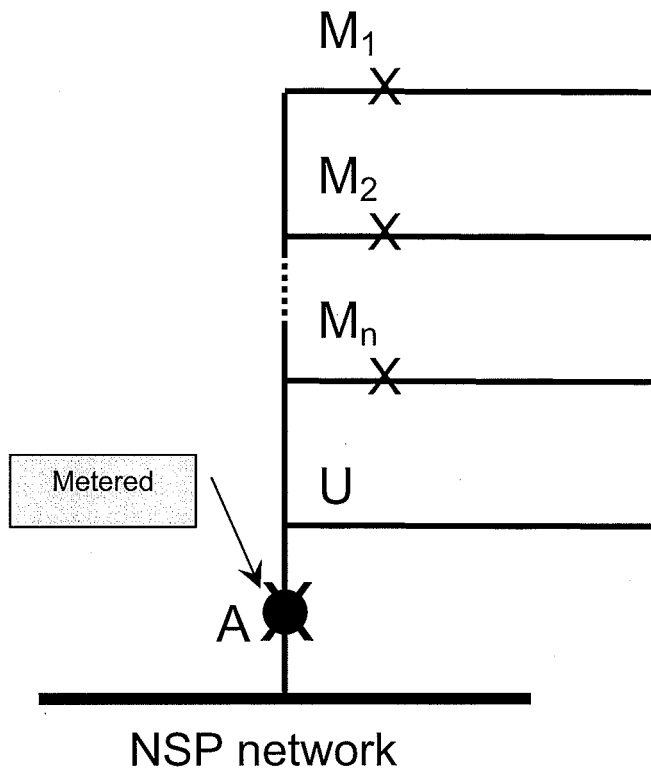
Examples of scenario 1 are:

- High rise building with individual metering for each tenancy;
- Shopping centre with individual metering for each tenancy;
- Group of residential units;
- Group of factory units

In this scenario:

- An agreed point of supply exists between the NSP's network and each of the market loads – at "A". (It can't be at the meter because this isn't a connection to the NSP)
- NSP has registered a NMI for each market load in MSATS.
- An RP is in place for each market load in accordance with Rules.
- A metering installation exists for each NMI, and is installed and maintained by an accredited metering provider to NEM technical standards.
- For each NMI, a market customer has registered the market load into the NEM through MSATS, and a Metering Data provider is collecting the metering data.
- An MDP is engaged to collect metering data for each metering installation
- Each consumer has choice of retailer.
- The metering installation type is determined independently based on energy volume through the metering point for each customer.
- Each metering point is as close as practicable to the connection point.
- Normally there is no adjustment to energy values despite the metering point and connection point not being co-located.
- The assets between the metering point and the connection point are either a "distribution network" or "connection assets".

Scenario 2 – Private network with parent meter



● Connection Point (to NSP)

X Metering Point

Examples of scenario 2 are:

- High rise building with parent and individual metering for each tenancy;
- Shopping centre with parent and individual metering for each tenancy;
- Caravan park;

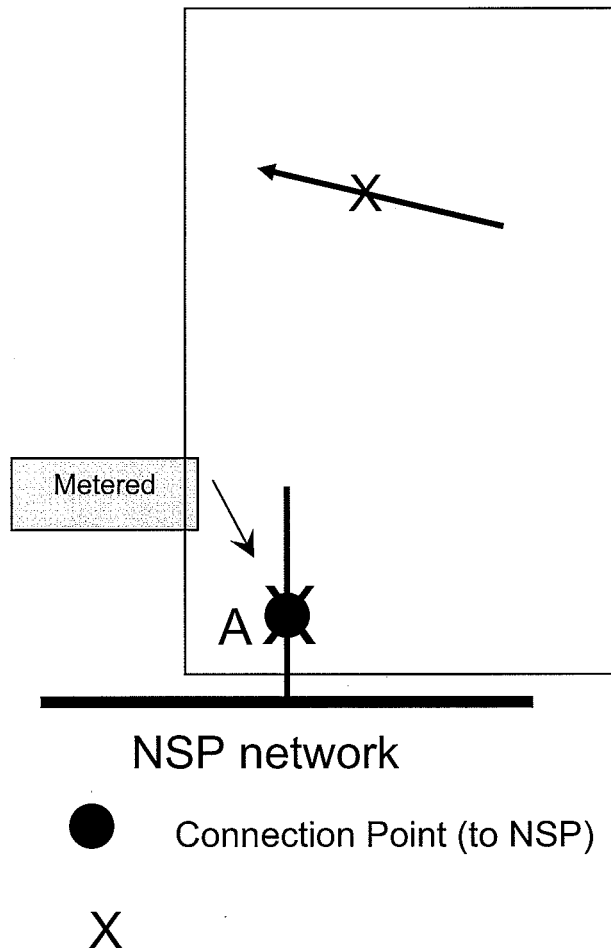
In this scenario:

- An agreed point of supply exists between the NSP's network and each of the market loads (M1, M2,..Mn and U) – at "A". (It can't be at the meter because this isn't a connection to the NSP)
- NSP has registered a NMI for each market load in MSATS, and an embedded network code.
- RP determined for each market load in accordance with Rules. If the NSP is not the Responsible Person for all the metering installations, then the

FRMPs must agree a single Responsible Person for all the NMIs, and notify NEMMCO (Rule 7.2.4(b)).

- A metering installation exists for each NMI, and is installed and maintained by an accredited metering provider to NEM technical standards.
- A single MDP is engaged to collect/calculate energy data for all metering points.
- One market load (U) metered by differencing: $U = A - \Sigma M$.
- For each NMI, a market customer has registered the market load into the NEM through MSATS, and a Metering Data provider is collecting the metering data.
- Each consumer has choice of retailer.
- The Type for each metering installation is determined independently based on energy volume through the metering point.
- Each metering point is as close as practicable to the connection point.
- Normally there is no adjustment to energy values despite the metering point and connection point not being co-located.
- The assets between the metering point and the connection point are either a "distribution network" or "connection assets".

Scenario 3 – Competition available to customer supplied by exempt network



- NSP registers metered NMIs in MSATS for connection point A and links these NMIs in MSATS using an embedded network Code (ENC).
- RP determined in accordance with Rules. If NSP is not the Responsible Person for metering installations, then the FRMPs must agree a single Responsible Person for all the NMIs, and notify NEMMCO (Rule 7.2.4(b)).
- Metering installation to NEM standards and installed and maintained by a metering provider.
- Connection point for the NMI is at the interface between the NSP and the private network.
- An MDP is engaged to collect energy data from connection points. MDP provides net energy at connection point A for the consumer's retailer in the embedded network. All metering installations relating to NEM must be interval (type 1, 2, 3, 4, or 5).
- Normally there is no adjustment to energy values because the metering point and connection point are deemed to be co-located.

Embedded Networks and Retail Competition

- The assets between the metering point and the connection point are not the NSP's network; they are transparent to the NEM, and are an embedded network and the network owner/operator may be "registered" or "exempt".
- The NSP does not require access to individual consumers' point of supply to connect/disconnect individual consumers because a NEM Retailer is taking financial responsibility at metering point A.
- If there is no Registered NSP, information regarding network topography will not be available
- The allocation of costs for use of the exempt/embedded network is a policy issue for the Regulators

ATTACHMENT B

AUSTRALIAN ENERGY REGULATOR: GENERAL EXEMPTIONS FROM THE REQUIREMENT TO REGISTER AS A NETWORK SERVICE OPERATOR



General exemptions from the requirement to register as a network service provider

NECA has granted the following general exemptions from the requirement to register as a network service provider. Organisations that fall within one of these general exemptions do not need to make an application for a specific exemption.

Class of network owner or operator	Description	Conditions
Caravan parks	Mobile home parks, caravan parks, Areas where space is rented for a mobile or semi mobile dwelling, where the provision of power is part of the contract of rental.	A mechanism establishing the maximum price for on-selling of energy must be in place.
Office buildings	Large complexes where floors or individual offices are rented or leased on a short or long term basis, and electricity is supplied as part of the building infrastructure and either separately metered or charged on a basis agreed at the time of the lease.	A mechanism establishing the maximum price for on-selling of energy must be in place.
Flats/apartments	Groups of individual dwellings sharing common walls where electricity is reticulated as part of the building infrastructure.	Where the network is supplied at no cost or a nominal fee and either: 1. access to retailers is available to occupiers; or 2. electricity is made available on terms negotiated as part of the purchase or hiring arrangement and a mechanism exists for setting the maximum price.

Embedded Networks and Retail Competition

Class of network owner or operator	Description	Conditions
Units	Groups of individual dwellings on a common or shared title.	<p>Where the network is supplied at no cost or a nominal fee and either:</p> <ol style="list-style-type: none"> 1. access to retailers is available to occupiers; or 2. electricity is made available on terms negotiated as part of the purchase or hiring arrangement and a mechanism exists for setting the maximum price.
Industrial parks	Large areas where land and buildings are leased.	<p>Where:</p> <ol style="list-style-type: none"> 1. the network is supplied at no cost or a nominal fee and access to retailers is available to tenants; and 2. standards for the network are agreed with the local network service provider
Shopping centres	Groups of shops and offices owned by a single entity or sharing a title where electricity is reticulated as part of the building infrastructure	<p>Where the network is supplied at no cost or a nominal fee and either:</p> <ol style="list-style-type: none"> 1. access to retailers is available to tenants; or 2. electricity is made available on terms negotiated as part of the hiring arrangement and a mechanism exists for setting the maximum price.