

REVIEW OF INITIAL METROLOGY PROCEDURE

DRAFT REPORT

**INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES**

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Review of Initial Metrology Procedure
Independent Pricing and Regulatory Tribunal
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1 INTRODUCTION

1.1 Background and Metrology Procedure objectives

NSW Treasury, in its role as Metrology Coordinator, published the initial Metrology Procedure for small retail customers¹ prior to the commencement of full retail competition in electricity supply on 1 January 2002. The Metrology Procedure details certain rules that apply to businesses participating in the National Electricity Market. It establishes how metering data is read, delivered and used in the wholesale market settlement process for small retail customers. The Metrology Procedure only applies where a customer chooses to take their electricity supply from a second tier retailer.²

On 1 January 2002, the Tribunal became the Metrology Coordinator for NSW. This role means that the Tribunal is responsible for the administration of the NSW Metrology Procedure.³ The National Electricity Code (Code) requires each Metrology Coordinator to review the initial Metrology Procedure within six months of becoming Metrology Coordinator.

When assessing amendments to the Metrology Procedure, the Code requires the Tribunal to consider the following objectives:

- to promote an efficient market
- to avoid unreasonable discrimination between Market Participants
- to minimise barriers to entry for competing retailers
- to provide a Metrology Procedure which is technically sound and economically efficient and
- the Code consultation procedures where reasonably practicable.⁴

To the extent of any conflict between these objectives, the Tribunal may determine the manner in which they can best be reconciled or which of them should prevail.⁵

¹ For the purposes of this document, a small retail customer is one that consumes less than 160MWh per annum. This equates to an annual bill of less than approximately \$16,000 per annum.

² The Metrology Procedure only provides the rules relevant to the wholesale settlement of the market. Additional rules, which are applicable to all small retail customers, are set out in the *Market Operations Rule (NSW Rules for Electricity Metering) No. 3 of 2001*, hereinafter referred to as the “metering Market Operations Rule”.

³ NEMMCO is responsible for the Metrology Procedures for larger customers.

⁴ National Electricity Code, clause 7.3.1(bc)

⁵ Ibid.

1.2 Tribunal's process for making its draft decision

The Tribunal has sought to inform its draft decision using feedback from a number of sources. For instance, it has considered:

- Written comments provided in response to its consultation paper titled *Notice of Review of Initial Metrology Procedure*.⁶
- Discussion at a round table forum on metrology hosted by the Tribunal on 22 August 2002.
- Feedback received on specific issues in bilateral meetings with stakeholders, such as residential park residents.
- Comments from the Ministry of Energy and Utilities. The Ministry is involved in developing other regulatory instruments that apply to metering, such as the metering Market Operations Rule. Given the close relationship between the two documents, decisions should be made in a coordinated manner.
- Submissions to the Essential Services Commission's (ESC's) review of the Victorian Metrology Procedure and the ESC's draft decisions. The Tribunal believes that consistency between the Victorian and New South Wales Metrology Procedures is important because it promotes an efficient market and reduces barriers to entry.

In order to reach the draft decisions set out in this report, the Tribunal has considered the information generated by the review process in light of the Metrology Procedure objectives (set out in section 1.1 above).

1.3 Structure of this paper

Many of the issues arising in this paper are technical and complex. The Tribunal has attempted make the paper as accessible as possible. To this end, the issues are presented in an order that broadly reflects their importance as revealed by stakeholder feedback during the consultation process. The draft report is set out in the following way:

- Chapter 2 discusses certain issues associated with embedded networks
- Chapter 3 discusses the adoption of a second controlled load profile
- Chapter 4 discusses the profile start date misalignment issue and
- Chapter 5 discusses the other issues raised in the consultation paper.

The Tribunal notes that the language associated with metrology, such as 'parent' and 'child', is potentially confusing for stakeholders who were not involved in the development of the regulatory framework. The Tribunal's preference is for the Metrology Procedure to be rewritten in a way that is easier to understand. However, this is not a feasible option in the short term.

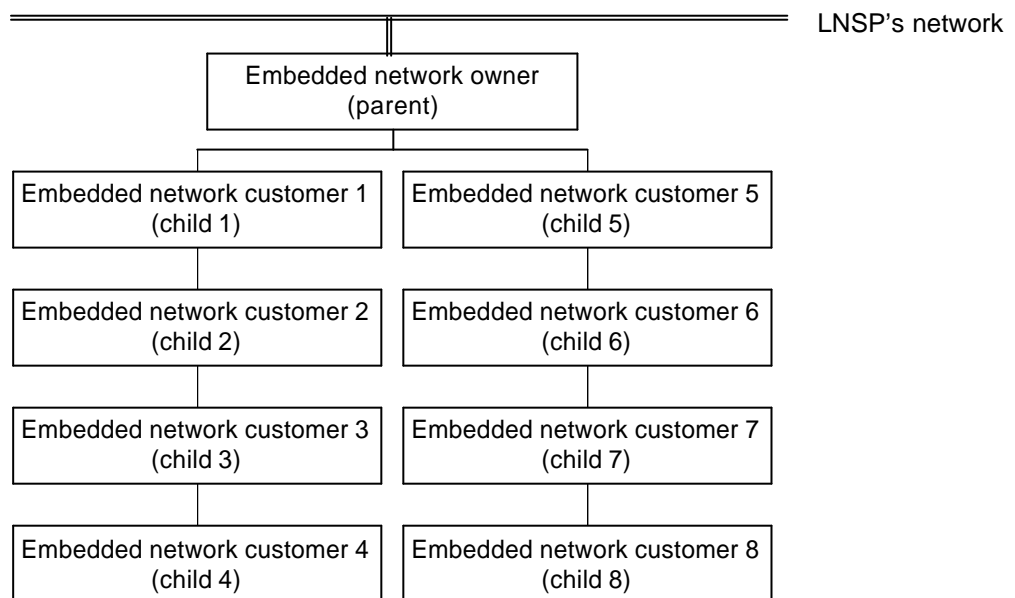
⁶ The Tribunal published the consultation paper in May 2002. EnergyAustralia, PIAC, Integral Energy, AGL, NEMMCO, the Department of Fair Trading, CitiPower and South Sydney Regional Organisation of Councils provided written comments on the paper. The consultation paper and submissions are available on the Tribunal's website at www.ipart.nsw.gov.au.

2 EMBEDDED NETWORKS

2.1 Broader policy context

An embedded network is a ‘network within a network’. It derives its power from the local electricity distributor’s network, however, most embedded networks are privately owned and operated. (For the purposes of metrology, the local electricity distributor is referred to as the Local Network Service Provider or LNSP.) Examples of embedded networks include industrial sites, shopping centres, office towers, Sydney Airport, certain rural customers and also residential parks. Figure 2.1 depicts an embedded network.

Figure 2.1 Embedded network



Historically, the arrangements for electricity supply within embedded networks has been as follows:

- the embedded network owner (known as the ‘parent customer’) is a customer of an electricity retailer, and
- the embedded network owner supplies electricity to each customer located within the embedded network (known as the ‘child customer’).

The electricity retailer charges the parent customer for the electricity consumption of the entire embedded network. Then the parent customer charges each child customer for their usage, which is measured by an electricity meter. In this case, the child customer has no relationship with either the local electricity retailer or the LNSP (since the embedded network does not form a part of the LNSP’s network).

In accordance with the Government’s policy of full retail competition, customers within an embedded network now have the opportunity (in theory) to choose their retail supplier. This means that a child customer may choose to enter into a contract with a retail supplier of their choice, rather than being supplied by the embedded network owner.

At present, however, the various market procedures and rules (including the Metrology Procedure) do not easily accommodate the complexities of extending full retail competition to customers located in embedded networks.

The consultation paper proposed that certain aspects of the Metrology Procedure be modified in order to facilitate the introduction of full retail competition to customers located within embedded networks. The Tribunal's decisions in this review will clarify how the Metrology Procedure should operate in embedded networks. However, a number of critical policy questions that are not covered by the Metrology Procedure will remain unanswered.

For instance, customers located in embedded networks do not have a connection agreement with the LNSP and do not pay network charges to the LNSP. (The embedded network owner pays network charges to the LNSP.) Customers located in embedded networks pay network charges to the embedded network owner, however the embedded network owner is not a Code participant. Consequently, it is not clear who should receive payment for network services when a customer located in an embedded network chooses to switch.

The issue of payment for network services is particularly important in the context of deciding who should be the Responsible Person for customers located in an embedded network — see section 2.3.

At this time, no customers located in embedded networks have switched retailer in NSW. The Tribunal believes that further policy development by Government is required to establish a workable framework for embedded networks.

This chapter considers three key issues associated with embedded networks:

- section 2.2 considers the definition of an embedded network
- section 2.3 considers who should be the Responsible Person for customers located in an embedded network and
- section 2.4 considers the circumstances in which embedded network customers should be required to install a new meter.

The consultation paper raised a number of other issues associated with embedded networks. However, they generated a relatively small amount of debate during the public consultation process. In order to maintain the focus of this report, the Tribunal has responded to these other issues in Chapter 5 (see section 5.5).

2.2 Definition of an embedded network

2.2.1 Background

At present, the Metrology Procedure defines embedded network as “a distribution network in which end use customers are connected to a distribution network that is not owned, operated or controlled by a Local Network Service Provider (LNSP)”.

A key determinant of whether an inset network is an embedded network is the need for subtractive metering. ‘Subtractive metering’ occurs where the electricity usage of a customer can only be determined by subtracting the usage of a second customer from the total usage recorded by the first customer’s meter. Where subtractive metering exists, the parent customer⁷ pays charges based on the incoming load less the child customer’s load.

For the purposes of the Metrology Procedure, subtractive metering is only taken to occur if it is required for settlements between participants in the National Electricity Market. Consequently, an inset network should only be considered to be an embedded network — and therefore subject to the provisions of the Metrology Procedure— if a child customer has chosen to be supplied by a second tier retailer. (By definition, a second tier retailer for a child customer is a retailer that is different to the parent’s retailer.⁸)

Currently, this distinction is not clear in the definitions. The existing definitions apply to all inset networks, regardless of whether there is, or is not, subtractive metering.

The consultation paper proposes that the definition be changed to:

...a distribution network to which end-use customers are connected that is not owned, operated or controlled by a LNSP, and which requires the energy data for the end-use customers which are connected to the embedded network, and which purchase electricity from a retailer other than the parent’s retailer, to be deducted to be able to settle the energy for the parent’s retailer in the wholesale market.

Comments made in submissions

- **Integral** supports the proposed amendment.
- **NEMMCO** suggests that the Tribunal adopt a broad definition of embedded networks, namely: “Embedded network means a distribution network supplied energy exclusively from another distribution network”. NEMMCO believes this would allow more forms of network (such as inset networks supplied from a neighbouring LNSP) to be dealt with under a single set of rules.
- **EnergyAustralia** does not support the proposed amendment because it has the potential to introduce inconsistent treatment for inset networks. It suggests that the proposed definition is changed slightly, namely, “...and which purchase electricity from a retailer other than the parent’s retailer ...” be replaced by “...and may purchase electricity from a retailer other than the parent’s retailer...”.

⁷ Or in wholesale market settlement terms, the parent customer’s retailer.

⁸ Under the Metrology Procedure, ‘second tier retailer’ means a retailer other than the local retailer. The local retailer for a child customer is the parent’s retailer. [This can be deduced as follows:

- The Metrology Procedure definition of a local retailer (which is identical to the Code definition) does not explicitly state who is the local retailer in the case of a child.
- However, it states where the explicit provisions of the definition are not applicable, the local retailer is “such other customer as NEMMCO may determine”.
- Section 63 of NEMMCOs *CATS Procedure Part 1 Principles and Objectives* defines an embedded network local retailer (ENLR) as “the party who is the FRMP of the parent NMI for the embedded network” — ie the local retailer for a child customer is the parent’s retailer.]

What happens in Victoria?

The ESC recently consulted on a similar change to the Victorian Metrology Procedure. In its submission, CitiPower proposed an alternative definition for an embedded network, which the ESC's draft report proposes to adopt:

Embedded network means a *distribution system* to which end-user customers are connected that is not owned, operated or controlled by a *distributor* licensed by *the Office*, and where the energy *supplied* to the end-use customers (the *children*) which are connected to the *embedded network*, has also been registered by a *meter* used to record the consumption of another end-use customer (the *parent*).

2.2.2 Tribunal's draft decision and reasons for its decision

For the purposes of the Metrology Procedure, the Tribunal proposes to define an embedded network as follows:

Embedded network means 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*).

Note: *Italicised terms are defined in Attachment 1 of the Metrology Procedure.*

The Tribunal has adopted a modified version of the CitiPower definition because it believes that the proposed definition is technically sound and meets the objectives of the Code. The definition addresses the concerns raised in EnergyAustralia's submission.

When participants at the round table forum discussed the CitiPower definition of an embedded network, LNSP representatives expressed concern at the prospect of the definition being adopted in NSW. The Tribunal understands that the main concern was that LNSPs do not want to register National Metering Identifiers (NMIs)⁹ and NMI standing data¹⁰ for a child customer unless that child customer is transferring retailer. However, this point is addressed in NEMMCO's customer transfer procedures (known as the 'CATS procedure')¹¹, not the Metrology Procedure. This issue is discussed in section 5.5.3.

⁹ A NMI is a unique number that is used to identify each customer's meter in the National Electricity Market. The NMIs of customers that are supplied by a particular retailer will be allocated to that retailer. The financial obligations of each retailer in the wholesale settlements process are determined by reference to the measured usage of the NMIs that are allocated to it.

¹⁰ NMI standing data is information associated with the NMI, such as the address and type of meter.

¹¹ The CATS procedure sets out the processes for customers to be transferred between retailers in NEMMCO's central database. The central database is known as MSATS.

2.3 Who should be the Responsible Person for customers within an embedded network?

2.3.1 Background

Under the National Electricity Code, the Responsible Person is the person that is responsible for ensuring that metering services (such as meter reading and data entry) are provided for a customer. There is a derogation from the National Electricity Code such that the LNSP is exclusively the Responsible Person for customers who have switched retailers and consume less than 100MWh per annum.¹²

However, since embedded networks may not necessarily be part of the LNSP's network¹³ it is not clear who should be the Responsible Person for customers within an embedded network when those customers switch to a second tier retailer.¹⁴ Consequently, problems may arise if a customer located within an embedded network wishes to become second tier, because no-one is responsible for their metering services.

Consistent with this derogation, the consultation paper has proposed that LNSPs be the Responsible Person for customers within embedded networks who switch retailers and consume less than 100MWh per annum. This would mean that customers within the embedded network would be treated in the same way as customers that are directly connected to the LNSP's network.

Comments made in submissions

- **AGL** believes it is inappropriate for LNSPs to be responsible for providing metering services to embedded networks because they are not familiar with the network, and do not have the business processes required to monitor changes within an embedded network. AGL suggests that “the embedded network owner could be required to appoint a qualified party to undertake the responsibility, then that party and the owner could establish what procedures and costs (if any) that party would be paid”.
- **EnergyAustralia** argues against the proposed change on the following grounds:
 - the LNSP has no knowledge of the embedded network
 - there is no customer connection contract with a child customer and
 - there are no network charges from the LNSP to the child customer's retailer.

EnergyAustralia contends that the proposed change is at odds with the intention of the Code, which is to promote simplicity. It believes that the Responsible Person should be the child customer's retailer.

- The **Department of Fair Trading** supports changes to improve access to the fully competitive electricity market for child customers.

¹² The derogation applies until 1 July 2004. After that time, the Financially Responsible Market Participant will be the Responsible Person. (In this context, the Financially Responsible Market Participant means the customer's retailer.)

¹³ Where an embedded network is an exempt network, the embedded network is not part of the LNSP's network. However, there are embedded networks in rural areas that are part of the LNSP's network.

¹⁴ The customer becomes second tier if he or she has elected to transfer to a retailer other than the local retailer. Under the CATS procedures, the local retailer of a customer within an embedded network is the retailer of the embedded network owner.

- **Country Energy** believes that it is completely inappropriate for the LNSP to carry out the function, because it would force LNSPs to carry out an uneconomic function in order to facilitate an uneconomic switch. Country Energy contends that parent customers are likely to set their network charges at a level that removes any incentive for a child to switch.

What happens in Victoria?

This issue also arises in the Victorian Metrology Procedure. The ESC’s draft report proposes to make LNSPs the Responsible Person for child customers.

2.3.2 Tribunal’s draft decision and reasons for its decision

For the period of the exclusivity derogation, the LNSP should be the Responsible Person for any customers located within an embedded network that choose to switch to a second tier retailer and consume less than 100MWh per annum.

To give effect to the Tribunal’s draft decision, the Tribunal proposes to insert the following clause 1.2.5:

For the period (if any) during which the *Local Network Service Providers* are, pursuant to Chapter 9 of the *Code*, the exclusive *Responsible Persons* for Types 5, 6 and 7 *metering installations* installed at a *connection point* consuming less than 100MWh per annum, the *Responsible Person* for the parent of an *embedded network* must be the *Responsible Person* for a *child* in that *embedded network* with a Types 5, 6 or 7 *metering installation* installed at a *connection point* consuming less than 100MWh.

The consultation paper proposed that the ambiguity over the Responsible Person be removed so that the Metrology Procedure is not an obstacle to switching by child customers. The two most logical candidates for the role are either the LNSP or the child’s retailer.¹⁵ The characteristics of each option are set out in Table 2.1

Table 2.1 Who should be the Responsible Person for child customers?

	Option 1 — The LNSP is the Responsible Person	Option 2 — The child customer’s retailer is the Responsible Person
Supported by:	Consultation paper, ESC	LNSPs
Costs borne by:	The costs of providing metering services will be spread across all customers via network charges.	The retailer will incur the costs associated with the Responsible Person role, and will presumably pass these through to the child customer.
Advantages/disadvantages	This approach maximises opportunities for child customers to churn, however, it also requires LNSPs to be responsible for metering services to be provided to persons that are not located on their network and with whom they may not have a contractual relationship.	This approach does not impose costs on LNSPs. However, the additional costs associated with metering services could be sufficient to deter child customers from switching.

¹⁵ AGL’s proposal may be difficult to implement under the Code, as it imposes obligations on a person that is not a Code participant.

LNSPs have argued that they should not be the Responsible Person for child customers because otherwise they may be forced to incur costs that they have no opportunity to recover. The Tribunal recognises these concerns, and requests that LNSPs quantify the estimated costs associated with adopting the role in their submissions to the draft report. The Tribunal notes that the unresolved issues in the broader policy framework could affect the extent to which LNSPs are able to recover costs in these circumstances (see section 2.1).

The Tribunal has proposed that the LNSP be the Responsible Person because, in its view, this decision best meets the Code objectives for the Metrology Procedure. In particular, it meets the Code objectives to ‘promote an efficient market’ and to ‘minimise barriers to entry for competing retailers’. (The objectives are set out in section 1.1.)

The draft decision promotes an efficient market because LNSPs are better placed than retail suppliers to carry out the role. Metering services for small customers (other than child customers) are currently provided by the LNSP. As a result of the derogation, retailers are not responsible for metering services for Types 5, 6, & 7 metering installations and consequently they do not have the knowledge or the processes that would allow them to carry out the role.

The draft decision minimises barriers to entry for competing retailers because if the child customer’s retailer was required to be the Responsible Person, it would be very difficult for second tier retailers to offer commercially attractive packages because they would be required to charge extra for metering services.

Further, this approach avoids an unfair outcome for certain rural customers whose connection falls within the definition of an embedded network. In some parts of NSW, the meters for a number of customers located along a rural road are all linked to one meter at the beginning of the road. This technique (historically referred to as ‘master/slave’ metering) was adopted by LNSPs because it was more convenient for them. In all other respects such customers are treated exactly the same as other LNSP customers. Consequently, the Tribunal believes that these customers should not be required to pay extra for metering services.

2.4 Requirement to install a new meter

2.4.1 Background

The parent of an embedded network is charged for all electricity supplied to their embedded network (less the electricity supplied to child customers that have elected to transfer to a different retailer). The parent customer then charges each child customer that has not transferred to a different retailer.

Windfall gains/losses could occur if the parent customer and the child customer have different types of meters. The relevant meter types in these circumstances are:

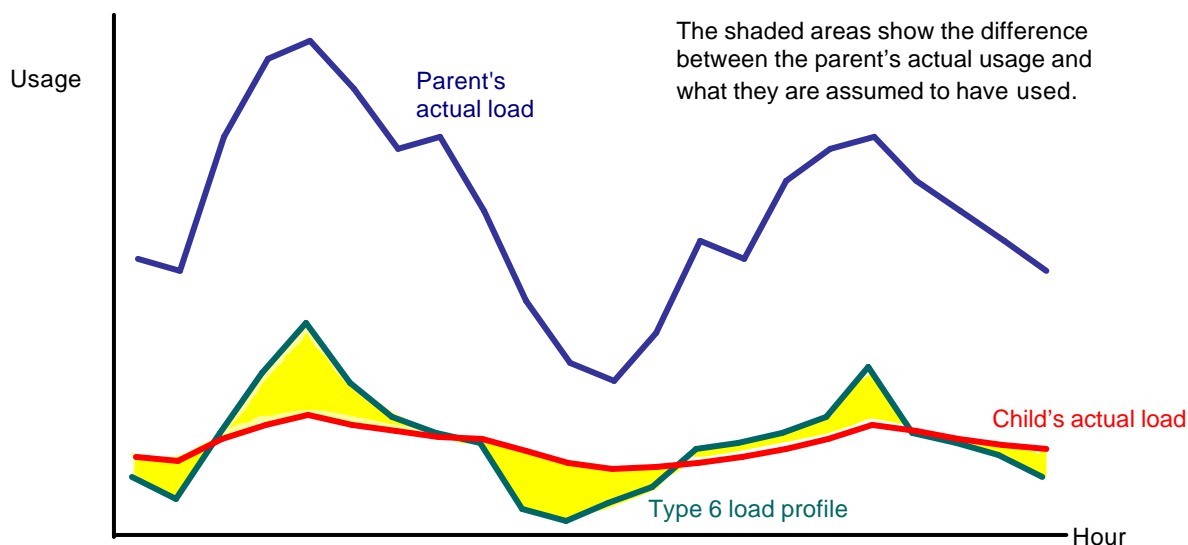
- **Type 5 meters**, which are interval meters that show the half hourly pattern of consumption of a customer (usually quarterly).
- **Type 6 meters**, which are accumulation meters that only record the total energy consumed between meter reads (usually quarterly). The customer's total consumption is then converted to half hourly data settlement by applying a load profile.

The windfall gains/losses arise because Type 6 meters are settled on the basis of a load profile, and Type 5 meters are not. For example, the parent customer could be required to pay for less electricity than they consumed if:

- the parent metering installation is Type 5 and
- the child metering installation is Type 6 and
- the child customer has a 'flatter'¹⁶ consumption pattern than the load profile.

This scenario is depicted in Figure 2.2. The parent customer pays the difference between the child customer's actual bill (which is determined by the load profile) and the bill that the child customer would have paid if they had been charged in accordance with their actual usage.

Figure 2.2 Effect of metering differences in embedded networks



To prevent windfall gains/losses, the Metrology Procedure currently restricts the ability of a child customer to use a different type of meter to the parent customer. A child customer that switches must fall with in scenario 1 or 4 as described in Table 2.2 below.

¹⁶ 'Flatter' is used to refer to a half hour consumption pattern that will result in lower energy charges. 'Peakier' is used to refer to a half hour consumption pattern that will result in higher energy charges.

Table 2.2 Effect of different combinations of metering installations

Scenario no.	1	2	3	4
Parent's meter type	Type 5	Type 5	Type 6	Type 6
Child's meter type	Type 5	Type 6	Type 5	Type 6
Impact on settlement	No impact	Windfall gain/loss.	Windfall gain/loss	No impact

If a child customer that wishes to switch falls within scenario 2 or 3, they must arrange to have the same type of metering installation as the parent customer. In most cases, this would involve the child customer installing a Type 5 meter. As it is costly to install a new meter, this arrangement could potentially inhibit competition in the retail market.

Additionally, the current arrangements require a child customer to change their meter if the parent customer changes their type of meter subsequent to the child customer's transfer. As a result there is uncertainty for the child customer as to the costs that may be incurred.

The consultation paper proposes amendments to the Metrology Procedure that make it easier for the child customer to switch, by:

- only imposing restrictions on the type of meter that the child customer may use if the child customer is switching to a retailer other than the parent customer's retailer
- clarifying that the child customer is not required to change meter types if the parent customer decides to install a new meter subsequent to the child customer's transfer
- allowing the child customer to switch on the basis of a different meter type to the parent customer so long as it is the parent customer that caused the difference in metering installations to occur.

This means that in certain circumstances, the Metrology Procedure would permit a combination of meters to fall within scenarios 2 and 3.

Comments made in submissions

- **NEMMCO's** systems are unable to identify whether or not the parent metering installation and child metering installation combine in a manner that complies with the Metrology Procedure. Its systems will record data pertaining to each connection point, but this data does not include references to other connection points. Consequently, the responsibility for verifying that connection points with embedded networks are correctly registered will need to lie with the LNSP or Responsible Person. There also needs to be an identified party that is responsible for rectifying incorrect installations.
- The **Department of Fair Trading** supports changes to improve access to the fully competitive electricity market for child customers. The Department is of the view that the proposed changes introduce some additional risk for parent customers so the Tribunal should consult with industry before implementing the proposed changes.
- **EnergyAustralia** is concerned that under the proposed Responsible Person arrangements, the additional metering costs associated with the proposed metering requirements will be borne by the LNSP. Additionally, EnergyAustralia believes that the proposed changes are unnecessarily complex. It believes that the objectives set out in the consultation paper could be achieved more simply by:

- making a blanket statement to the effect that the relevant provisions of the Metrology Procedure can be varied by agreement of the parties
- granting a waiver in cases where metering arrangements are no longer compliant with the Metrology Procedure for a transition period of up to 1 January 2003.

EnergyAustralia also notes that if the proposed changes are adopted, minor changes to the reversion clauses 2.3.3 and 2.3.4 may be required to ensure consistency.

What happens in Victoria?

In some respects, Victoria and NSW have chosen to treat customers located within embedded networks differently. In Victoria, a child customer that wishes to switch is required to install interval meters both for themselves and (if the parent customer does not have one already) for the parent customer. This provision was included to eliminate the uncertainty for the child of the costs that may be incurred if a parent changes meter type subsequent to the child customer's transfer.

As the Victorian approach is to always require a Type 5 meter to be installed, the issue of whether to extend exemptions to the requirement does not arise.

2.4.2 Tribunal's draft decision and reasons for its decision

The Tribunal proposes that child customers should not be permitted to switch using a different meter to the parent.

Under the changes proposed in the consultation paper, parent customers will be exposed to the risk that they will be charged more or less than their actual usage if, through their own actions, a difference emerges between their metering installation and the metering installation of the child customer. Ostensibly, the advantage of the proposal is that it limits the circumstances in which a child customer will be required to purchase a new metering installation in order to maintain consistency with the parent customer.

At this point in the consultation process, it is not clear that the proposed change will result in an improvement on the current situation. The proposed change creates an additional layer of complexity, however, in practice the benefits to child customers may not be large.

The Electricity Supply Act gives landlords the right to resupply customers. Since the landlord (parent) owns the existing meter, they could require any tenant (child) that switches to purchase a new meter. Consequently, the proposed change provisions of the Metrology Procedure could potentially be irrelevant in many cases.

Further, to the extent that the parent is obliged to bear additional costs as a result of the child's decision to switch, that cost will ultimately be passed on to all other customers within the embedded network.

Finally, it would also be very difficult to administer the proposed rules — NEMMCO has indicated that their systems will not record all of the required information.

Under the Code objectives, the Tribunal must seek to develop a Metrology Procedure that is technically sound and economically efficient. Feedback generated through the Tribunal's public consultation process has not convinced the Tribunal that the proposed change meets this requirement. Consequently the Tribunal's draft decision is to reject the proposed change.

Box 2.1 Residential parks

Residential parks are a common type of embedded network. Electricity supply in residential parks is contentious because:

- quality of supply in residential parks is often lower than for customers that are directly connected to the LNSP's network
- residents may be required to pay the regulated retail tariff, however, many of the benefits that are available to directly connected customers are not available to residential park residents.

The Tribunal supports action to address these issues. However, reforms that are designed to promote switching among residential park residents are not likely to address these concerns. The Tribunal believes that the customer service standards that are currently being developed by the Department of Fair Trading is a more appropriate vehicle for addressing residents' concerns.¹⁷

¹⁷ The Department is currently developing a document entitled *Customer service standards for the re-supply of electricity to permanent residents of residential parks*.

3 PROFILE START DATE MISALIGNMENT

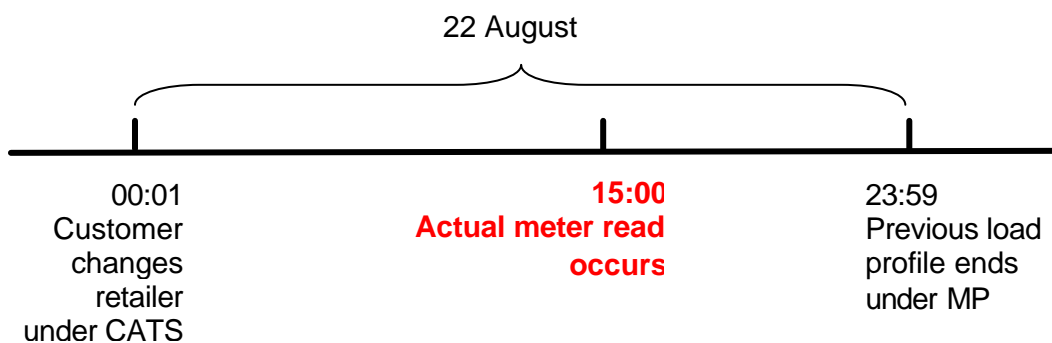
3.1 Background

Settlements in the NEM for customers with a Type 6 metering installation¹⁸ are achieved by applying each customer's consumption data (obtained at meter reads) to the load profile of the relevant customer type for the period between meter reads. Under the Metrology Procedure, all meter reads are taken to have occurred at midnight at the end of the day on which the meter read occurred.

Under NEMMCO's CATS procedure¹⁹ a customer must be transferred on the date of an actual meter read. In contrast to the provisions of the Metrology Procedure, however, the transfer is taken to have occurred at the beginning of the day on which the actual meter read occurred.

Consequently there is a mismatch between the timing of the transfer and the timing of the application of the load profile. Figure 3.1 is a simplified depiction of misalignment between the Metrology Procedure and the CATS procedure.

Figure 3.1 Effect of the profile start date misalignment (simplified)



The consultation paper proposed that the Metrology Procedure be amended to make it consistent with the CATS procedure.

3.1.1 Comments made in submissions

- **EnergyAustralia** supports the proposed change.
- **Integral** is 'strongly opposed' to a change to the Metrology Procedure to make the application of the profile consistent with the time of the transfer under CATS. It argues that the costs associated with updating Integral's systems to reflect the change are high, and further that all the transfers that have occurred so far in MSATS would need to be resubmitted. It prefers an approach whereby Metering Providers overcome the

¹⁸ Type 6 meters are accumulation meters that only record the total energy consumed between meter reads (which usually occur on a quarterly basis). The customer's total consumption is then converted to half hourly data settlement by applying a load profile.

¹⁹ The CATS procedure sets out the processes for customers to be transferred between retailers in NEMMCO's central database. The central database is known as MSATS.

mismatch by entering into MSATS the day after the actual meter read as the transfer date.

- **NEMMCO** can only implement changes associated with this proposal if they are made consistently across the NEM. NEMMCO recommends that comments on process and cost implications be sought from all affected participants before a decision is made.

3.1.2 What happens in Victoria?

The ESC's Metrology Procedure is also inconsistent with CATS. Submissions to the ESC's consultation paper were all in favour of an approach that aligns with the CATS procedure (ie the profile commences/ends at the beginning of the day on which the actual meter read occurred).

Consequently, the ESC supports an approach that aligns with the CATS procedure.

3.2 Tribunal's draft decision and reasons for its decision

The Tribunal proposes to amend Metrology Procedure so that the profile start date aligns with the CATS procedure.

To give effect to its draft decision, the Tribunal proposes that Schedule 10, clause 3 of the Metrology Procedure be amended to:

where if the consumption energy data is an actual meter reading:

start date = 00:00 on the day of the previous meter reading

end date = the end of the trading interval commencing at 23:30 on the day prior to the current meter reading date

and where if the consumption energy data is an estimate:

start date = 00:00 on the first day of the billing period,

or 00:00 on the day of the previous meter reading date (whether actual or estimate)

or 00:00 on the first day that the load becomes second tier, whichever is the later

end date = the end of the trading interval commencing at 23:30 on the last day of the billing period,

or the end of the trading interval commencing at 23:30 on the estimate meter reading date,

whichever is the earlier.

NEMMCO has indicated its systems cannot support different approaches between jurisdictions. Consequently, it is essential that the Tribunal and the ESC coordinate their approach.

The longer that the misalignment continues, the more expensive it will be to fix. This is because incorrectly entered transfers will need to be re-entered into MSATS. Consequently the Tribunal supports action sooner rather than later.

In the Tribunal's view, the best approach to this issue is the one that causes the least amount of inconvenience for the affected parties. On balance, it appears that least costly approach is to change the Metrology Procedure to align with the CATS procedure, as proposed in the consultation paper.

The Tribunal considers that the proposed amendment is consistent with the Code objective of technical soundness.

4 ADDITIONAL CONTROLLED LOAD PROFILE

4.1 Background

Some LNSPs offer customers the choice of a second form of off-peak tariff (known as OP2) that allows their power to come on for a limited period during the middle of the day in addition to at night. This form of controlled load has a different set of characteristics to traditional controlled load (OP1), which comes on only in the middle of the night. Currently there is a single load profile for OP1 and OP2. EnergyAustralia has requested that the Metrology Procedure be amended to allow for the 'peel off'²⁰ of a second controlled load profile.

4.1.1 Comments made in submissions

- In principle **PIAC** supports moves to increase the accuracy of price signals, however, it suggests that a cost-benefit analysis should be undertaken prior to the introduction of a new load profile.
- **Integral** is not opposed to splitting the off-peak load profile, however, it questions whether the benefits will outweigh the costs (particularly if sample meters are used). Apart from the cost of sample meters, Integral estimates that the change will entail \$100,000 in system costs.
- **NEMMCO** systems can support the change. NEMMCO would require three weeks to implement the change following receipt of all required data and inputs.
- **EnergyAustralia** strongly supports the proposed change. In relation to Schedule 10²¹ generally, EnergyAustralia proposes that a more comprehensive definition of 'weighting factor' is required and that this proposed change may impact on the proposed changes to the start date and end date for the load profiles (see previous section).
- **Origin** firmly supports the proposed change.

4.1.2 What happens in Victoria?

This issue does not arise in Victoria, because they have chosen to only allow for one load profile for all Type 6 metering installations. In Victoria, therefore, there is no differentiation (for settlements purposes) between Type 6 customers on controlled load and Type 6 customers on standard tariffs.

²⁰ The load profile for Type 6 customers is created by subtracting the energy used by customers with interval meters during each half hour period from the energy usage of the entire system. Therefore, the Type 6 load profile is the 'left over' energy after all energy usage that can be accounted for is accounted for. Introducing a new load profile effectively extracts a particular group of customers from the main mass of leftover energy. Consequently, the term 'peel off' is often used in this context.

²¹ Schedule 10 of the Metrology Procedure sets out the rules for calculating load profiles for Type 6 metering installations.

4.2 Tribunal's draft decision and reasons for its decision

At this stage in the review process, the Tribunal has not received sufficient information to allow it to make an informed decision. The Tribunal requests that businesses provide further information about the costs and benefits of introducing a second controlled load profile.

Developing an additional load profile for OP2 would enable more accurate price signalling for OP1 and OP2, which may encourage competition in the retail market. Introducing a new load profile involves making changes to the NMIs of affected customers, and could potentially involve installing additional Type 5 meters at the premises of a sample of OP2 customers. Therefore, the proposal involves some costs and some benefits.

Despite the request made in the consultation paper, no party has quantified the costs and benefits associated with the change. Each LNSP has a different position on whether or not to introduce a second controlled load profile. EnergyAustralia is of the view that the benefits exceed the costs, however they have not provided any data to support this claim. Country Energy is in favour so long as they are not required to install more sample meters and Integral has expressed doubts as to whether the change is worth it. (The consultation paper did not propose to require AIEW to adopt the second controlled load profile.)

Origin (a second tier retailer) has indicated that they support a second controlled load profile.

At the round table forum, there was unanimous support for an approach whereby LNSPs can choose whether or not to implement a second controlled load profile.²² However the Tribunal notes that no second tier retailers were present at the round table forum, and some round table participants have subsequently expressed concerns with this approach.

The Tribunal is interested in stakeholders' views about whether an optional approach could potentially have anti-competitive effects. Also, Country Energy has suggested if one LNSP chooses to adopt a second controlled load profile, it will exert pressure on other LNSPs to do the same, even if the benefits do not exceed the costs.

Unless controlled load customers have different consumption patterns across distribution areas, it is not clear why costs and benefits would diverge across different LNSP areas. The Tribunal is concerned that support for an optional approach is derived from the fact that businesses have not yet undertaken sufficient analysis to allow them to form a position on the issue.

Tribunal support for an optional approach in its final decision needs to be based on demonstrated benefit and cost cases in different areas. The Tribunal requests that LNSPs and retailers address in their submissions the costs and benefits associated with adopting a second controlled load profile.

²² Attachment 1 sets out an example of the amendments to the Metrology Procedure that could be used to implement an optional approach.

5 OTHER ISSUES

5.1 Meter reading frequency

5.1.1 Background

At present, the NSW Metrology Procedure requires Type 5 and Type 6 metering installations to be read ‘at least once every *lock down period*’.

The term ‘lock down period’ relates to a variable period that is set in NEMMCO’s central system. At the end of the ‘lock down period’, the net system load profile for a particular billing period is finalised. It is important that meter data is forwarded to NEMMCO by the end of the lock down period so that the load profile is based on accurate data.

The meter reading frequency in the Metrology Procedure was set to correspond with the lock down period because the duration of the lock down period was unknown when the Metrology Procedure was originally drafted. Now that the lock down period has been finalised (at a period of 15 to 17 weeks), the consultation paper proposed that the meter reading frequency be changed to ‘at least once every *fourteen (14) weeks*’ so that the performance measure is based on a fixed period of time rather than a variable period of time.

Comments made in submissions

- **AGL** supports the proposed change.
- **Integral** supports the adoption of a fixed rather than a variable requirement for meter reading frequency, however, it believes that 15 weeks is a more realistic deadline (in order to take account of Easter, Christmas and wet weather).
- **NEMMCO** strongly supports the proposed change. If data has not been delivered on time, NEMMCO may find it necessary to defer its lock down period. Therefore, under the current wording, the deadline may automatically shift backwards if a party fails to supply data according to schedule. This is inappropriate, because it weakens incentives to supply data on time. NEMMCO considers 14 weeks to be a generous deadline. NEMMCO has also indicated that it requires the lock down period to be one week longer than the meter reading frequency, so that it has time to do the calculations required to finalise the load profile.
- **EnergyAustralia** proposes that the period should be “fourteen weeks or the lockdown period whichever is the greater” (to allow for flexibility).

What happens in Victoria?

The Victorian Metrology Procedure requires meters to be read ‘at least once every *fourteen (14) weeks*’.

5.1.2 Tribunal's draft decision and reasons for its decision

The Tribunal proposes that the meter reading frequency is at least once every fourteen weeks.

To give effect to its draft decision, the Tribunal proposes to make the following changes to clauses 3.2.1(b) and 3.2.3(b) of the Metrology Procedure:

- 3.2.1(b) The Responsible Person must ensure that interval energy data is collected from the meters/associated data loggers representing at least 90% of estimated total consumption... at a frequency which is at least once every fourteen (14) weeks
- 3.2.3(b) The Responsible Person must, for controlled loads²³, ensure that accumulated energy data is collected from meters representing at least 90% of estimated total consumption... at a frequency which is at least once every fourteen (14) weeks.

The Tribunal would also delete the definition of 'lock down period' from the Metrology Procedure.

In response to Integral's submission, the Tribunal notes that the proposal for 14 weeks was developed taking account Christmas, Easter and wet weather. (Note that only 90 per cent of total consumption must be read within the 14 week period.) Further, EnergyAustralia's proposal—which allows for flexibility—defeats the purpose of the proposed amendment, which is to increase certainty.

The draft amendment meets the Code objectives, in particular the objective of promoting an efficient market. It is also consistent with the Victorian Metrology Procedure.

5.2 Requirements relating to inventory tables

5.2.1 Background

In order to charge customers for Type 7 (unmetered supply) metering installations such as street lights, LNSPs develop:

- load tables that record the characteristics of each type of device
- inventory tables that record the number of each type of device and
- on/off tables which indicate the period during which the device is switched on.

They then calculate the load profile based on these tables.

The Metrology Procedure requires LNSPs to update their inventory tables 'on a timely basis'. The consultation paper proposed an amendment so that:

- inventory tables are maintained on at least a monthly basis
- inventory tables relating to past periods cannot be adjusted unless the Financially Responsible Market Participant (ie the customer's retailer), the Local Retailer (ie the standard retailer) and the LNSP agree to the adjustment.

²³ The Metrology Procedure provides that the meter reading frequency for Type 6 metering installations other than controlled loads is once every 28 weeks.

Comments made in submissions

- **South Sydney Regional Organisation of Councils** (which represents 17 councils) contends that data problems make the load profiles inaccurate, and create difficulties for Councils when they develop maintenance schedules. It seeks an amendment of the Metrology Procedure to require:
 - rectifying deficiencies in the methodology for sample testing
 - LNSPs to include more specific information in the inventory tables (such GIS information on locations rather than descriptive information, and age of assets)
 - labelling of light fixtures, where the light fixture is not one of the three most common fixture types
 - Responsible Persons to provide the results of audits of their inventory tables to customers
 - periodic reviews of the public lighting load table, as technological advances and changing statutory requirements mean that lighting loads are not static.

SSROC contends that it has identified a number of problems involving inaccurate data which need to be resolved.

- **AGL** believes that all changes to inventory tables should be implemented as soon as practical.
- **Integral** does not support the change. Customers are generally billed for unmetered supply on a monthly basis and since the inventory is provided to customers prior to billing the requirement to update inventory tables on a monthly basis will make no difference. Further, with the exception of streetlights, customers are generally responsible for developing inventories and Integral has experienced problems in getting customers to provide the information to it in a timely matter. If such an amendment is made, it should apply only in cases where the LNSP is the owner of the inventory.
- **EnergyAustralia** considers the proposed change to be acceptable.

What happens in Victoria?

The ESC has amended its Metrology Procedure in a manner that is similar to the change proposed by the consultation paper.

5.2.2 Tribunal's draft decision and reasons for its decision

The Tribunal proposes that LNSPs be: (a) required to update their inventory tables on a monthly basis and (b) prohibited from changing inventory tables that relate to past periods without agreement between the parties.

To give effect to its draft decision, the Tribunal proposes to replace Schedule 11 clause 2.3(d) and Schedule 11 clause 3.3(d) of the Metrology Procedure with:

Each Responsible Person must use its reasonable endeavours to update the Inventory Table, for the NMIs for which it is responsible, on at least a monthly basis for any additions, deletions and modifications to ensure that the accuracy requirements in clause 3.8.7 of this Metrology Procedure are met. However, additions, deletions or modifications may be made to previous versions of the Inventory Table only after agreement by the Responsible Person and the affected Code Participants. The Responsible Person must communicate any

material changes to the Inventory Table to the affected *Code Participants* and the relevant end-use customer.

With the exception of streetlights, it is generally the customer, not the LNSP, who is involved in installing new assets. Consequently, LNSPs have argued that

- if an inventory table is not up to date, it is because the customer has not provided up to date information and
- if there is a ban on retrospective adjustments, customers will have an incentive to not inform the LNSP when they install new assets.

LNSPs suggest that the proposed changes should only apply in cases where the LNSP is the owner of the inventory.

The Tribunal notes that under section 68 of *Electricity Supply Act 1995*, it is an offence to connect an electrical installation to a LNSP's distribution system unless authorised to do so by the LNSP.

The Tribunal considers that the most appropriate instrument for LNSPs to require customers to comply with their obligation to provide inventory information is the contract between the unmetered supply customer and the business.²⁴ The Tribunal notes that Integral has already taken action to amend its Customer Connection Contracts accordingly. The contractual approach allows recourse to a dispute resolution mechanism.

The Tribunal's draft decision is based on its view that

- the limitation on changes to inventory tables that relate to past periods is consistent with fair and reasonable dealings, because it limits the opportunities for LNSPs to require payment for energy consumed in previous billing periods and
- LNSPs generally bill unmetered supply customers on a monthly basis so the requirement to update inventory tables on a monthly basis is reasonable.

The Tribunal notes that under the proposed amendment changes to inventory tables that relate to past periods may be made if there is agreement between Responsible Person and the affected Code participants.

Related issue — sample testing

The Unmetered Supply Working Group²⁵ has identified an error in the Metrology Procedure. In order to rectify this error, the Tribunal believes that clauses 2.3(a) and 3.3(a) of Schedule 11 should be amended from:

...for each NMI, a separate Inventory Table is required that identifies each device type which forms part of the NMI load ...

to:

...for each Responsible Person, a separate Inventory Table is required that identifies for each NMI for which it is responsible, each device type which forms part of the load ...

²⁴ Under the proposed approach, Customer Connection Contracts could be amended to include a condition that obliges the customer to inform the LNSP about changes to inventory tables in a timely manner.

²⁵ The Unmetered Supply Working Group was established by NSW Treasury in its role as Metrology Co-ordinator to facilitate the implementation of competition among unmetered supply customers.

Issues raised by SSROC

SSROC's submission contends that some aspects of Schedule 11 of the Metrology Procedure are deficient. In particular, they believe that the sampling procedure set out in Schedule 11 is incapable of rectifying certain data problems in the inventory tables.

Given the limited nature of this review, the Tribunal does not propose to address these issues at this time. Next year's joint review is a more suitable opportunity to consider such issues.

5.3 Requirements for meter testing and inspections

5.3.1 Guidelines for testing and inspections

Background

The guidelines governing the testing and inspecting of certain meters are set out in the Metrology Procedure. The Metrology Procedure is currently drafted so that the new Australian Standard (which has now been approved) will supersede the existing guidelines at such time as the new Australian Standard has been published.

The consultation paper proposed that the new Australian Standard is not immediately incorporated into the Metrology Procedure because NEMMCO and other stakeholders have expressed reservations about it.

Comments made in submissions

- **Integral** does not support the proposed change. It believes that the Australian Standard should supersede the guidelines set out in the Metrology Procedure because:
 - the standard is of higher technical integrity
 - the standard cannot be tested properly if it is not implemented
 - NEMMCO has subsequently withdrawn its reservations about the standard.
- **NEMMCO** withdraws any reservations about applying the new Australian Standard. Consequently, it does not support the proposed change.
- **EnergyAustralia** considers the proposed change to be acceptable.

What happens in Victoria?

The ESC's consultation paper raised the issue of guidelines for testing and inspections. A number of Victorian participants expressed their continuing reservations about certain aspects of the new Australian Standard.²⁶

Consequently, the ESC's draft report proposes to require asset management plans to include, *as a minimum*, the requirements of the new Australian Standard. The approach is intended to incorporate the strengths of the new Australian Standard into the Metrology Procedure whilst retaining flexibility.

²⁶ For instance, Email Metering expressed concerns relating to the treatment of meters that are shown to be below the required standard, and issues associated with the evaluation of low load accuracy.

Tribunal's draft decision and reasons for its decision

The Tribunal proposes that LNSPs should be required to adopt as a minimum the requirements of the Australian Standard.

To give effect to this decision, the Tribunal proposes to replace clause 2.4.2 of the Metrology Procedure with:

Clauses 2.4.3 to 2.4.11 (inclusive) are to be regarded as the asset management strategy guidelines for the whole-current (direct connected) *meters* for the purposes of schedule 7.3 of the Code.

The Tribunal also proposes to replace clause 2.4.3 of the Metrology Procedure with:

When the Australian Standard “AS1284 Part 13: In-service compliance testing” has been published, the asset management plan referred to in clause 2.4.4 must include, as a minimum, the requirements of that standard.

It is widely acknowledged that the new Australian Standard (which has been developed over the course of several years) is the superior technical document. However, some stakeholders have concerns about the operation of certain aspects of the document.

The Victorian approach appears to effectively reconcile stakeholders' differing views about the Australian Standard. It is consistent with Integral's proposition that the Australian Standard be adopted whilst not preventing LNSPs from taking actions that are beyond the requirements of the Australian Standard if they so wish.

5.3.2 Actions in the event of non-compliance with the testing and inspections requirements

Background

The Code requires certain actions to be taken if meter testing and inspection reveals that a metering installation does not meet requirements. The consultation paper proposed that the Metrology Procedure should be amended to make the Responsible Person responsible for such actions for Types 5, 6 and 7 metering installations.

Comments made in submissions

- **NEMMCO** contends that an amendment to the Metrology Procedure will not relieve NEMMCO of its obligations under the Code, and conflicts will arise if NEMMCO and the Responsible Person hold different views about the appropriate response to a problem.
- **EnergyAustralia** considers the proposed change to be acceptable.

What happens in Victoria?

The ESC's draft report proposes that the Metrology Procedure should be amended to make the Responsible Person responsible for such actions for Types 5, 6 and 7 metering installations.

Tribunal's draft decision and reasons for its decision

The Tribunal proposes that the Responsible Person be required to take action in the event of non-compliance.

To give effect to this decision, the Tribunal proposes to add the following actions in event of non-conformance to each of Schedules 1, 2, 3, 4 and 5 of the Metrology Procedure:

Requirement	Metrology Coordinator Decision/Comment
<p>If a metering installation test, inspection or audit demonstrates errors in excess of those prescribed and the time at which that error arose is not known, the error is deemed to have occurred at a time half way between the time of the most recent test or inspection which demonstrated that the metering installation, or the meter family to which the meter of the metering installation belongs, complied with the relevant accuracy requirement and the time when the error was detected.</p>	<p>Decision based on clause 7.9.5(a)</p>
<p>If a test or audit of a <i>metering installation</i> demonstrates an error of measurement of less than 1.5 times permitted by this schedule, no <i>substitution</i> of readings is required unless in <i>NEMMCO's</i> reasonable opinion a particular party would be significantly affected if no <i>substitution</i> were made.</p>	<p>Decision based on clause 7.9.5(b)</p>

The Code requires NEMMCO to take certain actions if meter testing and inspection reveals that a metering installation does not meet requirements. It does not make clear, however, whether NEMMCO's obligation extends to all metering installations or only Types 1-4.

The Metrology Procedure requires the Responsible Person (ie the LNSP) to ensure that testing and inspections are carried out in relation to Types 5, 6 & 7 metering installations. Arguably, therefore, the Responsible Person should also be the one to take action in the event of non-compliance.

The Tribunal supports the amendment proposed in the consultation paper because in its view it is inconsistent for NEMMCO to perform the function for Types 5, 6 & 7 metering installations. Even though NEMMCO will not be relieved of its obligations under the Code, the Tribunal considers that the proposed approach gives rise to a more effective framework for actions in the event of non-compliance.

In the Tribunal's view, proposed amendment is consistent with the Code objective of promoting an efficient market.

5.4 Tariffs for customers with sample meters

5.4.1 Background

Load profiles for Type 6 (accumulation) metering installations are developed by installing Type 5 (interval) metering installations for a random sample of customers. These customers with sample meters may currently be charged as if they were Type 5 customers. However, since this could affect their consumption patterns, the consultation paper proposed that sample customers be charged on the basis of accumulation data (despite the fact that more detailed information is available).

Comments made in submissions

- **PIAC, AGL and NEMMCO** support the proposed change.
- **Integral** neither supports nor opposes the proposed change.
- **EnergyAustralia** believes that the proposed change will probably help with the long term statistical accuracy of the controlled load profile. Any added cost to maintain the sample meter population should be recoverable.

What happens in Victoria?

This issue does not arise in Victoria, because they have chosen not to allow for ‘peel-off’ of the Type 6 load profiles (see section 4.1.2). Sample meters are not required, as the Type 6 load profile is the market load profile minus the energy usage of customers with Types 1-5 & 7 metering installations.

5.4.2 Tribunal’s draft decision and reasons for its decision

The Tribunal proposes that customers with sample meters should be charged on the basis of accumulation data.

To give effect to this decision, the Tribunal proposes to add the following new clause 2.3.7 to the Metrology Procedure:

The Responsible Person must ensure that the energy consumed and measured by a meter, which is a sample interval meter installed for the purposes of calculating a Controlled Load Profile, is settled in the wholesale energy market on the basis of a Type 6 metering installation.

For consistency, the words “subject to clause 2.3.7” should be added at the beginning of clauses 2.3.2 and 2.3.3 of the Metrology Procedure.

There were no submissions that opposed the proposal that customers with sample meters for the load profile are settled on the basis of the profile data. Given that the sample customer’s consumption patterns could be affected if they are charged on an interval basis, the current situation could result in Type 6 meters being settled in the basis of an inaccurate load profile. This is not consistent with the Code objective to promote an efficient market. Consequently, the Tribunal supports the proposed change.

5.5 Other embedded network issues

5.5.1 Definition of parent, child, master, slave

Background

The Metrology Procedure currently has the following usage:

- The terms parent and child refer to metering points where the parent is the point at which energy enters the embedded network another distribution network, and child refers to points within the embedded network.
- The terms master and slave refer to metering installations where the master records the total consumption, including information pertaining to each slave.

The terms master and slave have been used historically to describe a form of metering that is used predominantly in rural areas of New South Wales, where the metering installations that are used along a rural road and all linked to one metering installation at the beginning of the road. For the purposes of the Metrology Procedure and MSATS, these are referred to as the parent and child. This is clarified in the definitions in the Metrology Procedure.

The consultation paper sought comment on the appropriateness of the definitions in the Metrology Procedure for parent, child, master and slave metering installations.

Comments made in submissions

- **NEMMCO** notes that the terms ‘master and slave’ are used for different purposes across the NEM. As well as the usage described above, the terms are used to describe the relationship between meters when one meter is used to provide an external telecommunications link to download data for all meters within an embedded network. NEMMCO suggests that the Tribunal should move away from using the terms master and slave in the current manner and allow them to be used unambiguously in relation to telecommunications links. It believes that the more general terms parent and child suffice, and that the definitions of parent and child should be revised in a way that excludes reference to ‘master’ and ‘slave’.
- **NEMMCO** also suggests that IPART adopt the following definition for parent: “a parent metering installation is a metering installation for a connection point, where the energy which passes through the connection point is to be apportioned to more than one end-use customer, and that apportionment will be made through the use of one or more child metering installation(s) and the data from the parent metering installation.”
- **EnergyAustralia** believes that the definitions proposed in the consultation paper appear to be appropriate.

What happens in Victoria?

Victoria uses the following definitions for parent and child:

- **Parent** means a *metering point* in an *embedded network* to which *child(ren)* are connected. The *parent* may be connected to another *embedded network* or to the *distribution network* of an *LNSP*.
- **Child** means a *metering point* in an *embedded network* which is connected to a *parent*.

The Victorian metrology procedure does not refer to master and slave, because Victorian distributors have not used the metering technique that creates a requirement for the terms.

Tribunal's draft decision and reasons for its decision

The Tribunal proposes that the Metrology Procedure defines 'parent' and 'child' as follows:

Parent means a **metering point in an embedded network** where the energy that passes through the metering point is apportioned to more than one end-use customer, and that apportionment is made through the use of one or more *child's metering installation(s)* and the *parent's metering installation*.

Child means a metering point in an embedded network which is connected to a parent.

The definitions of 'master metering installation' and 'slave metering installation' should be omitted from the Metrology Procedure.

The Tribunal also proposes to make a minor amendment to Schedule 10 in order to remove a reference to a 'slave metering installation'.

The Tribunal concurs with NEMMCO's view that the terms 'master' and 'slave' should be omitted from the Metrology Procedure. The Tribunal also supports NEMMCO's proposal relating to the definition of a parent, however, some changes have been made in the interests of simplicity.

5.5.2 Who should have access to energy data for settlements purposes?

Background

The energy data recorded by the parent meter 'double-counts' the energy recorded by the child meter. For settlements purposes, the energy measured at both parent and child NMI's must be forwarded to NEMMCO's central system. In order to find out how much energy the parent customer's retailer should be charged for in the wholesale market, it is necessary to subtract the usage of any second tier child customers. This subtraction is done in NEMMCO's MSATS system.

As the parent customer and child customer may have different, competing retailers, a question arises as to who should be responsible for deducting the child customer's energy data from the parent customer's energy data for billing purposes.

The consultation paper proposes that the Responsible Person should be required to ensure that the Financially Responsible Market Participant (the parent customer's retailer) has access to the energy data of all child NMIs within the embedded network.

Comments made in submissions

- **EnergyAustralia** supports the proposed modification to clause 3.7.1 of the Metrology Procedure subject to the replacement of the words "...to energy data in a metering installation..." with "...energy data in the metering installation database...", which is more consistent with the wording of clauses 3.7.2 and 3.7.3.
- **EnergyAustralia** does not support the proposal that the parent customer's Responsible Person should be responsible for deducting the child customer's data from the parent customer's data. Rather, it believes that the parent customer's retailer should have this role.

What happens in Victoria?

The Victorian and New South Wales consultation papers both raise this issue and both propose the same solution. The ESC's draft decision is to adopt the proposal set out in the consultation paper.

Tribunal's draft decision and reasons for its decision

The Tribunal proposes that the Responsible Person be required to ensure that the parent's Financially Responsible Market Participant has access to the energy data of all child NMIs within the embedded network.

To give effect to this decision, the Tribunal proposes to replace clause 3.7.1 of the Metrology Procedure with:

Where the Responsible Person is not the Financially Responsible Market Participant, the Responsible Person must ensure that access is provided for a Financially Responsible Market Participant to energy data in the metering installation database for each metering installation which is installed in relation to a connection point that relates to the Financially Responsible Market Participant's NEMMCO account statements.

The draft amendment is consistent with clause 7.7(a)(1) of the Code and also with the ESC's draft decision.

Only EnergyAustralia commented on this issue. The Tribunal has adopted EnergyAustralia's suggestion relating to the wording of clause 3.7.1.

The consultation paper also proposes that the parent customer's Responsible Person should be responsible for ensuring that the parent customer's meter data, less the data for child customers that have transferred retailer, is made available to the parent customer's retailer. The Tribunal does not intend to respond to the issue, because it does not relate to the Metrology Procedure.

5.5.3 Who should issue NMIs to customers located within embedded networks?

Background

Normally, the LNSP issues NMIs to each customer on its network. However, child customers are not part of a LNSPs network, and therefore the CATS rules place an obligation on the parent customer's Local Retailer to issue NMIs to the children in an embedded network. Thus far, no child customers have been issued with NMIs. The consultation paper raised the question of who should be responsible for this function.

Comments made in submissions

- **AGL** suggests that the Responsible Person should be responsible for issuing NMIs to child customers.
- **NEMMCO** suggests that the parent customer's Local Retailer should be responsible for issuing NMIs, as they are the closest Code Participant.²⁷ The parent customer is not a part of the NEC framework and therefore NEM obligations cannot be imposed upon it.

²⁷ Under the CATS procedures, the Local Retailer of an embedded network is the parent customer's Financially Responsible Market Participant, ie the parent customer's retailer

- **EnergyAustralia** suggests that the Local Retailer of the embedded network should be responsible for issuing NMIs.

What happens in Victoria?

The ESC's review does not encompass this issue (presumably because it does not relate to the Metrology Procedure).

Tribunal's draft decision and reasons for its decision

The Tribunal does not intend to form a position on this issue.

This issue arises in NEMMCO's CATS rules, not the Metrology Procedure. Treasury included the issue in the consultation paper since the review of the Metrology Procedure provides a useful forum for consultation. The Tribunal will pass on comments received to NEMMCO.

5.6 Estimated reads

5.6.1 Definition of estimated reads

Background

If it is inappropriate or impossible to obtain an actual meter reading, it is possible under the Metrology Procedure for an *estimate* of a customer's energy usage to be entered into NEMMCO's central database.

If the customer has a Type 5 meter (an interval meter), the customer's actual usage at the time of estimate read is able to be ascertained at the next meter read. This can occur because the Type 5 meter records the customer's usage for each half hour interval. If the actual energy usage is used to replace the original estimate then a substitution occurs — the substitute read replaces the estimated read.

On the other hand, if the customer has a Type 6 meter (an accumulation meter), then there is no way of finding out what the customer's actual usage was at the time of the estimated read. In this case, there is no way of replacing the estimate with more accurate information, and the estimate is treated as permanent. In the context of the Metrology Procedure, this means that an *estimated read* of a Type 6 metering installation is treated as a *substituted read*.

The current definition of an estimated read in the Metrology Procedure fails to clearly make this distinction. The consultation paper proposed that the definition be amended in order to remove an error and also to more clearly reflect the intention of the Metrology Procedure.

Comments made in submissions

- **AGL** and **Integral** support the proposed change.
- **EnergyAustralia** considers the proposed change to be acceptable.

What happens in Victoria?

The Victorian Metrology Procedure already includes a definition of an estimated read that is identical to the definition proposed in the consultation paper.

Tribunal's draft decision and reasons for its decision

The Tribunal proposes to adopt the following definition of an estimated read:

...estimated read means an *estimate* used in lieu of a *meter* reading, where permitted in accordance with clause 3.2.9 of this *Metrology Procedure*. An *estimated read* of a Type 5 *metering installation* is treated as an *estimation* for the purposes of this *Metrology Procedure* whilst an *estimated read* of a Type 6 *metering installation* is treated as a *substitution* for the purposes of this *Metrology Procedure*.

No party has expressed opposition to the proposed change. It is also consistent with the Victorian Metrology Procedure.

5.6.2 Introduction of additional 'substitution type' for Type 6 metering installations

Background

Situations where it may be necessary to substitute energy data include:

- where a meter is found to be inaccurate
- where the person who is supposed to read the meter is unable to get access and so an estimate is used.

The Metrology Procedure sets out the approved techniques for substituting energy data ('substitution types'). The consultation paper proposed that a new approved technique be added for Type 6 metering installations. The new approved technique would permit previously substituted energy data to be changed (within a certain time frame), so long as the Financially Responsible Market Participant (ie the customer's retailer), the Local Retailer (ie the standard retailer) and the LNSP all agree that the original substitute data was incorrect. This type of substitution is currently allowed for Type 5 metering installations.

Comments made in submissions

- **AGL** believes that the administrative costs involved in fixing the error is likely to be greater than the cost of the error itself.
- **Integral** does not see the need for the addition of a new approved technique for substituting energy data, because Substitution Type 4 already serves the purpose envisaged for the new approved substitution technique. The change would involve additional costs in modifying IT systems with little or no advantage.
- **NEMMCO** observes that there is currently a NEM substitution and validation document, as well as separate substitution and validation documents applying in each of Victoria and NSW. The three documents are substantially similar. NEMMCO is prepared to seek convergence of the documents and manage a single document.
- **EnergyAustralia** considers the proposed change to be acceptable.

What happens in Victoria?

The Victorian Metrology Procedure already includes the additional substitution type for Type 6 metering installations.

Tribunal's draft decision and reasons for its decision

The Tribunal does not intend to introduce an additional substitution type at this time. However, it may reconsider the issue if the CATS procedures change to allow transfers on the basis of estimated reads.

The key arguments in favour of the addition of a new substitution type for Type 6 metering installations are that:

- the extra complexity already exists for Type 5 metering installations and
- the new substitution type could potentially be used to resolve problems in the case of a gross error.

On the other hand it creates unnecessary extra complexity, and that it generates costs associated with updating participants' systems. The Tribunal is not convinced that there are clear benefits from adopting the change at this time, since it would impose costs without any corresponding advantage in terms of promoting the Code objectives.

5.7 Threshold for requirement to install a Type 5 metering installation

5.7.1 Background

The NSW Metrology Procedure requires small retail customers that consume between 100MWh per annum and 160MWh per annum (and who switch suppliers) to install a Type 5 metering installation.

This issue was not addressed in consultation paper, however, AGL commented on it in its submission.

Comments made in submissions

- **AGL** believes that the NSW Metrology Procedure creates a barrier to entry to second tier retailers that wish to supply customers that consume more than 100MWh (and less than 160MWh), because it forces such customers to purchase a Type 5 metering installation if they wish to switch.

What happens in Victoria?

In Victoria and South Australia, customers that consume between 100MWh per annum and 160MWh per annum (and who switch suppliers) are not required to purchase a Type 5 metering installation if they wish to switch.

5.7.2 Tribunal's draft decision and reasons for its decision

The Tribunal does not intend to form a position on this issue at this time.

The NSW Metrology Procedure reflects the outcome of a lengthy consultation process. To change the requirements at this point could be perceived to be unfair towards customers that have already been required to invest in a Type 5 meter.

The Tribunal believes that the joint review to be undertaken by Metrology Coordinators next year is a more appropriate time to consider the rate of uptake of interval meters.

ATTACHMENT 1 PROPOSED CHANGES TO METROLOGY PROCEDURE — ADDITIONAL CONTROLLED LOAD PROFILE

The Tribunal proposes to make a number of amendments to the Metrology Procedure in order to implement its draft decision relating to an additional controlled load profile (see section 4.2).

Change 1 Revise Schedule 10, clause 2.1

Clause 2.1 details requirements relating to profile preparation services for controlled load. The Tribunal proposes that the clause is rewritten as follows:

In accordance with clause 3.10.2 of this *Metrology Procedure*, *Controlled Load Profile(s) (CLP)* for each *profile area* must be estimated by NEMMCO using *interval energy data* from a sample (or samples) of *controlled load interval meters*.

The sample *meters*, which will be installed by the NSW *LNSPs*, must be a Type 5 *metering installation*. Two *NMIs* may need to be allocated to each sample *meter*.

- one *NMI* must be used for the *interval energy data* from the sample *meter* that is used to estimate the *CLP* in accordance with this clause 2.1; and
- a second *NMI* must be used to transfer the consumption energy data to which the *CLP* is applied in accordance with clause 2.2 of this Schedule 10.

2.1.1 One Controlled Load Profile

- (a) There shall be one *CLP* in each *LNSP* area unless the *LNSP* chooses to introduce a second *CLP* in its *profile area*
- (b) If the *LNSP* chooses not to introduce a second *CLP*, one (1) *CLP* must be calculated for all *controlled loads* in a *profile area*, which is based on a sample of *controlled load interval meters*.
- (c) For each half hourly *trading interval*, the *CLP* must be calculated by *profile area* as follows:

CLP for a *profile area* for a *trading interval j*

$$= \sum_{n=1}^N (\text{sample meter load in trading interval } j)_n * (\text{weighting factor})_n$$

where:

n represents the set of sample *NMI*'s in the *profile area*

Weighting factor is the weighting factor associated with the *NMI*

2.1.2 Two Controlled Load Profiles

- (a) If the *LNSP* chooses to introduce a second *CLP*, it must provide a written notice advising of the commencement date of the second *CLP* to:
- the *Metrology Coordinator*
 - *NEMMCO* and
 - all *Retailers*.
- (b) The commencement date must be at least six (6) months after the date of the notice.
- (c) From the commencement date, two (2) *CLPs* must be calculated for the profile area:
- one for *controlled loads* in the *profile area* based on a sample of *controlled load interval meters* on the controlled load 1 network tariff; and
 - one for *controlled loads* in the *profile area* based on a sample of *controlled load interval meters* on the controlled load 2 network tariff.

For each half hourly *trading interval*, the *Controlled Load Profiles* must be calculated by *profile area* as follows:

CLP for loads on the controlled load 1 network tariff

*CLP*₁ for a *profile area* for a *trading interval j*

$$= \sum_{n=1}^N (\text{load for sample } \textit{meter} \text{ on the controlled load 1 network tariff in } \textit{trading interval } j)_n \\ * (\text{weighting factor})_n$$

where:

n represents the set of sample *NMI*'s on the controlled load 1 network tariff, in the *profile area*

Weighting factor is the weighting factor associated with the *NMI*

CLP for loads on the controlled load 2 network tariff

*CLP*₂ for a *profile area* for a *trading interval j*

$$= \sum_{m=1}^M (\text{load for sample } \textit{meter} \text{ on the controlled load 2 network tariff in } \textit{trading interval } j)_m \\ * (\text{weighting factor})_m$$

where:

m represents the set of sample *NMI*'s on the controlled load 2 network tariff, in the *profile area*

Weighting factor is the weighting factor associated with the *NMI*

Change 2 Revise Schedule 10, clause 2.2

Clause 2.2 details requirements relating to basic meter profilers for controlled load. The Tribunal proposes that the clause is rewritten as follows:

In accordance with clause 3.10.1 of this *Metrology Procedure*, NEMMCO must apply the appropriate *CLP*, for the *profile area* to which the *NMI* is *connected*, to the *consumption energy data* for all *first tier* and *second tier controlled loads*, in order to obtain *trading interval energy data*.

2.2.1 One controlled load profile

For *NMIs* in a *profile area* with one *CLP*, the *CLP* must be applied as follows:

Half hourly *energy data* for *trading interval j* for a *NMI data stream*

$$= \text{Consumption energy data between start date and end date} * \frac{CLP_j}{\sum_{i=\text{startdate}}^{\text{end date}} CLP_i}$$

where

CLP_j = the calculated *Controlled Load Profile energy* for *trading interval j*

$\sum_{i=\text{startdate}}^{\text{end date}} CLP_i$ = the sum of *Controlled Load Profile energy* between the start date and the end date

If the *consumption energy data* is an *actual meter reading*:

start date = 00:00 on the *day* after the previous *meter reading*

end date = the end of the *trading interval* commencing at 23:30 on the current *meter reading date*

If the *consumption energy data* is an *estimate*:

start date = 00:00 on the first *day* of the *billing period*,

or 00:00 on the previous *meter reading date*,

or 00:00 on the first *day* that the *load* becomes *second tier*, whichever is the later

end date = the end of the *trading interval* commencing at 23:30 on the last *day* of the *billing period*

or the end of the *trading interval* commencing at 23:30 on the estimate *reading date*, whichever is earlier

2.2.2 Two controlled load profiles

In a *profile area* where the LNSP has chosen to introduce a second *CLP*, the *CLPs* shall be applied as follows:

- (a) *Loads* on the controlled load 1 network tariff (CLP_1) must be applied to the *consumption energy data* for all *first tier* and *second tier controlled loads*, which are on the controlled load 1 network tariff:

Half hourly *energy data* for *trading interval j* for a *NMI data stream* on the controlled load 1 network tariff

$$= \text{Consumption energy data between start date and end date} * \frac{CLP_{1j}}{\sum_{i=startdate}^{end\ date} CLP_{1i}}$$

where:

CLP_{1j} = the calculated CLP_1 energy for *trading interval j*

$\sum_{i=startdate}^{end\ date} CLP_{1i}$ = the sum of the CLP_1 energy between the start date and the end date

If the *consumption energy data* is an *actual meter reading*

start date = 00:00 on the *day* after the previous *meter reading*

end date = the end of the *trading interval* commencing at 23:30 on the current *meter reading date*

If the *consumption energy data* is an *estimate*

start date = 00:00 on the first *day* of the *billing period*,

or 00:00 on the previous *meter reading date*,

or 00:00 on the first *day* that the *load* becomes *second tier*, whichever is later

end date = the end of the *trading interval* commencing at 23:30 on the last *day* of the *billing period*

or the end of the *trading interval* commencing at 23:30 on the estimate *reading date*, whichever is earlier

- (b) *Loads on the controlled load 2 network tariff (CLP₂) must be applied to the consumption energy data for all first tier and second tier controlled loads, which are on the controlled load 2 network tariff:*

Half hourly *energy data* for *trading interval j* for a *NMI data stream* on the controlled load 2 network tariff

$$= \text{Consumption energy data between start date and end date} * \frac{CLP_{2j}}{\sum_{i=startdate}^{enddate} CLP_{2i}}$$

where:

CLP_{2j} = the calculated CLP_2 energy for *trading interval j*

$\sum_{i=startdate}^{enddate} CLP_{2i}$ = the sum of the CLP_2 energy between the start date and the end date.

If the *consumption energy data* is an *actual meter reading*:

start date = 00:00 on the *day* after the previous *meter* reading

end date = the end of the *trading interval* commencing at 23:30 on the current *meter* reading date

If the *consumption energy data* is an *estimate*:

start date = 00:00 on the first *day* of the *billing period*,

or 00:00 on the previous *meter* reading date,

or 00:00 on the first *day* that the *load* becomes *second tier*, whichever is later

end date = the end of the *trading interval* commencing at 23:30 on the last *day* of the *billing period*

or the end of the *trading interval* commencing at 23:30 on the estimate reading date, whichever is earlier.

Change 3 Consequential changes

If the Tribunal's draft decision is implemented, it will be necessary to slightly change a number of clauses that currently refer to a single controlled load profile. Specifically

- "Controlled Load Profile" should be replaced with "Controlled Load Profile(s)" in clauses 3.2.1, 3.2.2 and 3.10.6(a)
- "Controlled Load Profile" should be replaced with "a Controlled Load Profile" in clause 2.3.6.
- clause 3.10.2 should be changed to:

NEMMCO must prepare *Controlled Load Profile(s) (CLP)* for each *profile area* in accordance with Schedule 10 clause 2.1 and apply the *CLP(s)* by *profile area* to the *consumption energy data* from the applicable *first tier controlled load accumulation meters* and from the applicable *second tier controlled load Type 6 metering installations* in accordance with Schedule 10 clause 2.2 to produce *trading interval data*.