Joint Jurisdictional Review of the Metrology Procedures

Final Report

Essential Services Commission (Victoria)
Essential Services Commission of South Australia
Independent Competition and Regulatory Commission (ACT)
Independent Pricing and Regulatory Tribunal (NSW)
Office of the Tasmanian Energy Regulator
Queensland Competition Authority

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Preface

The Jurisdictional Regulators have completed their joint review of metrology procedures, required under clauses 7.13(f) and 7.13(g) of the National Electricity Code (the Code). This review examined a range of issues related to the development of an efficient national electricity market, including:

- Options for developing a single nationally consistent metrology procedure;
- In relation to metering for small customers :
  - whether there are barriers to consumers adopting economically efficient metering solutions and other technology;
  - whether meter ownership is a barrier to consumers switching retailers; and
- The effectiveness of the current ring-fencing arrangements in relation to metering.

Potential barriers to consumers adopting economically efficient metering solutions and other technology have been identified during the review and key findings are summarised below. In addition, the Jurisdictional Regulators also considered when a further review of these issues should be conducted, and what changes to the Code are required to implement their recommendations.

Nationally consistent Metrology Procedure

The Jurisdictional Regulators found that a single national Metrology Procedure should be developed, and that the Code should be varied so that it includes the technical metrology provisions for first and second tier customers. NEMMCO should be responsible for developing and managing this procedure, while the jurisdictions should continue to be responsible for the key policy decisions that underpin the procedure.

Responsibility for metering services

The Jurisdictional Regulators found that increased competition in the metering services market is desirable, provided the potential benefits for consumers are likely to be greater than the costs for consumers. For large customers , they found that the costs associated with metering services are relatively small compared to their total electricity bill, and the opportunity for them to benefit from innovations in metering solutions is high. Therefore, the competitive arrangements that currently exist for second tier customers should be extended to first tier customers.

However, for small customers, they found that the potential benefits of competitive metering services to consumers are likely to be significantly less than the costs. In addition, there is a risk that introducing competition in this secondary market will impede competition in the primary retail electricity market. For these reasons distributors should continue to be exclusively responsible for metering services for small first and second tier customers.

Limited flexibility to vary distribution and retail tariffs

The Jurisdictional Regulators found that the limited flexibility for distributors and retailers to restructure regulated tariffs to make them more cost-reflective reduces the benefits that more economically efficient metering solutions could provide to the market, and therefore could be a barrier to them adopting these solutions. They believe the regulator in each jurisdiction should consider the need to promote efficient outcomes when determining the appropriate balance between limiting price movements to protect consumers from price shocks and making tariffs more cost-reflective over time.

Current metering arrangements

The Jurisdictional Regulators found that under the current metering arrangements, the option for small customers to switch to a new retailer on the basis of accumulation metering (with profiling for wholesale market settlement) may be a barrier to the achievement of cost reflective tariffs as it can weaken the price signals to which these customers are exposed. However, while rolling out interval meters to all customers in a jurisdiction may enable more cost-reflective tariffs, it will not necessarily lead to the realisation of the full benefits of economic efficiency. Therefore such a rollout—and the consequent sunsetting of profiling—should not proceed until an assessment of the costs and benefits has been undertaken for that jurisdiction.

Implementation of recommendations

The Jurisdictional Regulators believe substantial time and effort and further detailed consultation are needed to draft the specific changes to the Code required to implement the recommendations of this review. They have outlined a course of action to ensure that these changes are drafted and proposed to NECA in an appropriate timeframe.

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Executive summary and recommendations

This is the final report of the review, conducted jointly by the jurisdictional regulators, to determine whether there are barriers to consumers adopting economically efficient metering solutions and to examine the options for developing a single nationally consistent metrology procedure.

The Review also considers meter ownership, technology, and effects on the wholesale and retail pricing signals and on consumption decisions. Additionally, the Review considers whether the current ring-fencing requirements are adequate for the proposed metering or metering data services provisions. The Review, required by the National Electricity Code[1] (the Code), proposes changes to the Code necessary to implement the recommendations where barriers to consumers adopting economically efficient metering solutions are identified.

Developing the assessment framework

An important element of the Review is to develop a framework that may be used to:

- Determine whether barriers exist to customers adopting economically efficient metering solutions or other economically efficient technology; and
- Determine and compare any options that are identified to remove these barriers.

Subsequent to the Review, it is recommended that the jurisdictions use this assessment framework as a basis for further consideration of the recommendations from the Review.

The assessment framework, developed by reference to the Code requirements that are relevant to this Review, consists of the following criteria:

- *Economic efficiency* – potential barriers are assessed in terms of their economic costs and benefits by reference to productive, allocative and dynamic efficiency.
- *Practicality* – the costs and benefits of removing any barriers are also assessed from a practical perspective.
- *Equity* – the incidence on particular customers and market participants of the costs and benefits of any barriers is assessed.

The Code, consistent with economic theory, creates a strong assumption that 'economic efficiency' will be achieved by allowing customers to make choices in regard to their electricity retailer, the way in which they are metered, and their electricity consumption. These choices are provided in the expectation that the competitive process will lead to improvements in the efficiency with which services are provided and electricity is priced, and enable demand side participation. More importantly, these choices are being provided because improvements in the efficiency with which services are provided and electricity is

[1] National Electricity Code, clause 7.13(g)

priced, are expected to benefit customers[2]. Consistent with this approach, the Jurisdictional Regulators recommend that[3]:

2.1 The assessment framework consisting of the following criteria:

- ***Economic efficiency* – potential barriers are assessed in terms of their economic costs and benefits by reference to productive, allocative and dynamic efficiency;**
- ***Practicality* – the costs and benefits of removing any barriers are also assessed from a practical perspective; and**
- ***Equity* – the incidence on particular customers and market participants of the costs and benefits of any barriers is assessed,**

is considered to be appropriate for consideration of these issues. The Jurisdictional Regulators therefore recommend that any subsequent consideration of the outcomes of this Review also adopt this assessment framework.

2.2 Jurisdictions[4] may add jurisdictional-specific criteria which are consistent with the jurisdiction's objectives under legislation (eg social equity) and government's energy policy objectives. The criteria may be weighted.

National consistency of Metrology Procedures

Metrology procedures[5] have been developed in each of the jurisdictions operating in the National Electricity Market (except Tasmania) for metering installation types 5, 6 and 7. The metrology procedures, amongst other things, facilitate the conversion of metering data into a format suitable for use in the wholesale markets settlement system and are a mechanism for communicating jurisdictional policy decisions relating to some aspects of FRC, where FRC has been introduced, to the market. The ACCC has previously expressed concerns that the benefits of FRC would be reduced without nationally consistent metrology procedures[6] and

[2] Although some customers may not see improvements in the way that electricity is priced because they may choose not to change their consumption of electricity.

[3] The numbered recommendations refer to the section number of the report where the recommendation is developed, the numbers are sequential with respect to that section.

[4] The matters which are the responsibility of the government, and those which are the responsibility of the Jurisdictional Regulator, vary between jurisdictions. Accordingly, references in this Review to 'jurisdictions' is intended to refer to the government and/or the Jurisdictional Regulator as appropriate in the context.

[5] National Electricity Code, clause 7.2.1A

[6] ACCC, *ibid*, August 2001, p.15

therefore the Code requires that this Review 'consider options for a single nationally consistent metrology procedure for each of metering installation types 5, 6 and 7'[7].

The Jurisdictional Regulators note that in the development of the published metrology procedures, considerable consistency across jurisdictions has already been achieved. Key jurisdictional differences in the metrology procedures relate to specific jurisdictional polices for FRC including the form of profiling that is applicable in each jurisdiction. In addition, recognising the moves towards national consistency and the need to simplify the current complex arrangements for metering services there is a need to consider first tier metering in any review of the Code. The Jurisdictional Regulators recommend that:

3.1 Chapter 7 of the Code should be extended to include first tier metering.

3.2 A single national Metrology Procedure should be developed which should:

- **(a) Include technical metrology provisions for first and second tier customers;**
- **(b) Ensure that, where necessary, existing first tier metering is grandfathered with respect to compliance with technical metering standards;**
- **(c) Exclude non technical provisions, such as consumer protection, which will continue to be the responsibility of the jurisdictions;**
- **(d) Be similar to the approach adopted in the CATS Procedures[8], whereby:**
  - **(i) The jurisdictions continue to be responsible for the key policy decisions underpinning the Metrology Procedure; and**
  - **(ii) Jurisdictional policy differences are identified in tables in the Metrology Procedure; and**
- **(e) Seek to ensure that obligations that are duplicated in other NEMMCO procedures and/or the Code are harmonised so that wherever possible the obligations appear only once in the combined metrology requirements.**

3.3 The Code should be varied to give NEMMCO the responsibility for the single national Metrology Procedure.

[7] National Electricity Code, clause 7.13(f)(2)

[8] Procedures developed by NEMMCO for the Customer Administration and Transfer System.

Responsibility for metering services

Customer metering has assumed an enhanced role in the competitive market. Metering does not just determine the customer bills but settlement between the retailer and the market, and the commercial arrangements between the retailer and the network. Determining who is responsible for, and who can own, the meter is important to the operation of the market and to innovations that benefit customers.

The distributor is currently generally responsible for first tier metering under various jurisdictional instruments.[9]

For second tier customers, the 'Responsible Person' has responsibility for the supply, installation and maintenance of meters, under the Code. The Responsible Person may be either the retailer[10], or the distributor, where nominated by the retailer[11]. That is, there is retailer choice of the Responsible Person for metering services.

Each jurisdiction that has introduced FRC has a transitional derogation[12] to the Code to allow the distributor to exclusively be the Responsible Person for small second tier customers[13]. These transitional derogations are often referred to as the 'exclusivity' derogations. If the derogations expire, and without any other relevant Code changes, metering services for small customers will not exclusively be the responsibility of the distributor as it has been.

Evidence has been presented which indicates that the uncertainty associated with the existing transitional arrangements is a barrier to the adoption of economically efficient metering solutions and other technology and that competitive metering services may inhibit the productive efficiencies associated with retail competition by increasing the potential for:

- Meter churn;
- Reduced efficiencies in meter reading;
- Increased metering costs, including additional costs due to the stranding of assets, resulting in a lack of effective competition; and
- Introducing operational complexities, including maintenance and testing of meters, ensuring universal metering, coordination of processes across multiple parties, and load control.

[9] The retailer is responsible for prepayment meters in Tasmania.

[10] National Electricity Code, clause 7.2.3

[11] National Electricity Code, clause 7.2.2

[12] In the case of NSW and Victoria, the derogations expire on 1 July 2004, the derogation for South Australia ceases on 1 July 2005, while the derogation for the ACT expires on 28 February 2006.

[13] The derogations apply to second tier customers with metering installation types 5, 6 and 7 in the ACT, South Australia and Victoria, and to second tier customers consuming less than 100 MWh per annum in NSW.

The preferred option is therefore to conclude the transitional arrangements and proceed with metering services being provided either as a competitive service or as an exclusive service. To facilitate innovation by retailers it is proposed to expand competition for metering services. The Jurisdictional Regulators therefore recommend:

4.1 Recognising the moves towards national consistency and the need to simplify the current complex arrangements for metering services, the arrangements for first and second tier customers should, in principle, be the same.

4.2 (*Competitive metering services*) The Code should be amended to provide retailer choice of Responsible Person (that is, the retailer has the choice of whether the retailer or distributor is responsible for the metering installation) for:

- **(a) all first tier customers with annual consumption greater than *z* MWh[14] where determined by the jurisdiction;**
- **(b) all second tier customers with annual consumption greater than *z* MWh;**
- **(c) all first tier customers with annual consumption less than *z* MWh that have a meter that meets the requirements of a metering installation type 1, 2, 3 or 4 where determined by the jurisdiction; and**
- **(d) all second tier customers with annual consumption less than *z* MWh that have a meter that meets the requirements of a metering installation type 1, 2, 3 or 4.**

4.3 (*Non-competitive metering services*) Consistent with recommendation 4.2, the Code should be amended so that the distributor is exclusively responsible for metering services for all first tier and second tier customers with annual consumption less than *z* MWh that have a meter that does not meet the requirements of a metering installation type 1, 2, 3 or 4.

4.4 (*Shorter term*) Pending the Code changes referred to in recommendations 4.2 and 4.3, extensions to the current jurisdictional derogations that relate to the Responsible Person for metering installation types 5, 6 and 7 should be sought.

4.5 Each jurisdiction should consider the most practicable option in its jurisdiction for introducing the availability of competitive metering services to first tier customers.

4.6 As the single national Metrology Procedure is developed by NEMMCO, the jurisdictions should monitor that process and consider whether any residual and/or additional obligations should be imposed on licensees.

[14] Where *z* is determined by the jurisdiction

4.7 (*Unbundling of metering service charges*) The jurisdictions should unbundle metering service charges[15] from the Distribution Use of System (DUoS) charges. Metering service charges that are regulated remain the responsibility of the jurisdiction. Where it has not already done so, the jurisdiction should determine the most practicable timeframe for unbundling the metering service charges, consistent with the timing of distribution price reviews.

4.8 NEMMCO, when preparing the draft changes to the Code, should review the definitions of metering installation types 4, 5 and 6 to ascertain whether they are still appropriate taking into account the development of the market, the advances in meter technology and data acquisition and management.

Meter ownership

The Code specifically requires this Review to consider whether 'meter ownership acts as a barrier to customer switching'.[16] Furthermore, if the related metering services arrangements are changed, then it is most likely that meter ownership arrangements also need to be varied.

The key advantage of alternative meter ownership arrangements is the potential to facilitate innovation, both in terms of the types of meters installed (as retailers and customers are not constrained to the distributor's standard meter) and the way in which those meters are read. While ownership of meters by the distributor may be a barrier to the adoption of economically efficient metering solutions and other technology there is a counter argument that the economies of scale arising from continuing to vest ownership of meters with the distributor may facilitate innovation at a lower cost. The Jurisdictional Regulators therefore recommend:

5.1 Recognising that meter ownership should have regard to the metering services arrangements, and the recommendations that have been made in relation to metering services, the Jurisdictional Regulators recommend consistent meter ownership models should apply across first and second tier customers.

5.2 (*Market-driven meter ownership model*) In the longer term market-driven meter ownership models are considered to be appropriate for all customers with competitive metering services.

[15] Charges for metering services include charges for meter provision (provision, installation and maintenance of the meter) and charges for metering data services (collection, processing and storage of, and provision of access to, metering data).

[16] National Electricity Code, clause 7.13(g)(1)(i)

(a) Existing meter ownership arrangements should be retained for second tier customers with competitive metering services currently; and

(b) In the shorter term, each jurisdiction should consider the most practicable option for making available competitive metering services, that is, transitioning from distributor ownership of meters to a market driven meter ownership model.

5.3 (*Distributor-driven meter ownership model*)

(a) Distributor-driven meter ownership models are considered to be appropriate for all customers with non-competitive metering services; and

(b) An obligation should be imposed on the distributor to not unreasonably withhold consent where a retailer or a customer has requested a meter other than the standard meter to be installed.

5.4 (*Unbundling of meter provision charges*) Charges for meter provision[17] should be unbundled from DUoS charges.

Distribution and retail tariffs

A possible legal and regulatory barrier to the adoption of economically efficient metering solutions and other technology is the flexibility available to distributors to vary the structure of distribution tariffs, and for retailers to vary the retail tariffs for first tier customers, to make them more efficient.

Whilst an appropriate metering technology can enable more cost reflective tariffs, the benefits of these more cost reflective prices can only be fully realised where there are both efficient distribution and retail tariffs.

The distribution tariffs are regulated by the Jurisdictional Regulators. In the first instance, more cost reflective distribution tariffs can assist in achieving efficiencies in the network, and these tariffs need to be reflected in the retail tariffs faced by customers. Where there are restrictions placed on the ability for distributors to develop more cost reflective tariffs, and the ability of those tariffs to be reflected in retail tariffs, the potential benefits of adopting an efficient metering solution or other technology will be diminished.

The same flexibility required in the setting of distribution tariffs is also required in the setting of retail tariffs for first tier customers. The ability to capture allocative efficiencies will, however, be reduced significantly if there are restrictions on retailers in the setting of

[17] Meter provision includes the provision, installation and maintenance of the meter

first tier retail tariffs, because the majority of small customers are still first tier. Additionally, constraints on the setting of first tier retail tariffs will effectively place constraints on second tier retail tariffs. The Jurisdictional Regulators therefore recommend:

6.1 Evidence was presented to the Jurisdictional Regulators that constraints on regulated distribution and retail tariffs do not provide an incentive for the adoption of economically efficient metering solutions and other economically efficient technology. To promote the achievement of efficient outcomes, the jurisdictions should consider the balance required between the constraints on regulated distribution and retail tariffs to manage price movements and the need to realign tariffs over time to be more cost reflective.

Non reversion policies

The 'non reversion' policies currently in the jurisdictional Metrology Procedures, in the context of a market-based approach to the installation of interval meters, are:

- Interval meters cannot be replaced by accumulation meters[18]; and
- Interval meters must be read as interval meters[19].

Whilst all jurisdictions do not allow interval meters to be replaced by accumulation meters, NSW does not require interval meters to be read as interval meters.

The 'non reversion' policies were originally implemented to ensure the efficient use of interval meters installed, whilst recognising that the costs of collecting and processing data from interval meters are higher than for other meters. In jurisdictions where interval meters are required to be read as interval meters, it has been argued that this requirement is a barrier to the adoption of economically efficient metering solutions and other technology. The Jurisdictional Regulators therefore recommend:

7.1 Once installed, interval meters should not be replaced with accumulation meters unless specific jurisdictional exceptions are provided for.

7.2 Above a threshold established by the jurisdiction and specified in the Metrology Procedure, an interval meter must be read as an interval meter[20].

[18] Applies in the ACT (second tier only), New South Wales, South Australia and Victoria.

[19] Applies in the ACT (second tier only), South Australia (after 1 January 2004 once an interval meter is initially read as an interval meter) and Victoria.

7.3 Below the threshold established by the jurisdiction and specified in the Metrology Procedure, an interval meter may be read as an accumulation meter.

7.4 Each jurisdiction should establish the threshold referred to above, and should review it from time to time based on the development of the market in that jurisdiction.

Technical metrology issues

The technical metrology issues that have been identified as potential barriers to the adoption of economically efficient metering solutions and other technology are:

- The period over which metering data is stored. The costs associated with reading interval meters may be increased if the data from these meters is required to be stored for a longer period than required;
- The provision of access to metering data. The costs associated with reading interval meters may be increased if the data is required to be provided to a range of parties that do not necessarily require the disaggregated data; and
- The enforcement of unique Australian metering standards, which may inhibit the sales of meters available globally, in Australia.

The Jurisdictional Regulators recommend that:

7.5 NEMMCO, when developing the single national Metrology Procedure, should consider the requirements for:

(a) The storage of metering data; and

(b) Access to metering data; and

7.6 NEMMCO, as the body responsible for the single national Metrology Procedure, should monitor developments in the Australian metering standards having regard to the need to remove barriers to the adoption of economically efficient metering solutions and other economically efficient technology. NEMMCO should consult with the jurisdictions and other interested parties in relation to any changes proposed to be made to the Australian standards which may introduce a barrier to the adoption of economically efficient metering solutions and other economically efficient technology.

[20] Noting that a retailer may request metering data to be forwarded to it in an aggregated form to match its requirements for customer billing

Other legal and regulatory barriers

In submissions concern was raised that the metrology standards for type 5 metering installations might be an additional legal and regulatory issue that may be a barrier to the adoption of economically efficient metering solutions and other technology. There are a number of aspects of interval meter metrology for type 5 meters that have been largely copied from the long established rules for type 1 – 4 metering installations. It is considered that some of these are inappropriate for the mass number of relatively small consumption interval meters that will result from a roll out.

7.7 The Jurisdictional Regulators recommend that NEMMCO, in conjunction with developing a single national Metrology Procedure, should review the provisions in Chapter 7 of the Code to:

(a) Identify provisions that are not applicable to metering installation types 5, 6 and/or 7; and

(b) Propose amendments to the Code accordingly.

Current metering arrangements

Small customers, in jurisdictions where FRC has commenced, may currently transfer retailers on the basis of interval metering or non-interval metering (with profiling for wholesale market settlement). These current metering arrangements may be a barrier to the adoption of economically efficient metering solutions and other technology if they distort the price signals to which customers would otherwise be exposed. The installation of alternative forms of metering and/or other technology may therefore be an enabler of more cost reflective tariffs, however, the technology may not be sufficient in isolation to realise the full benefits of economic efficiency. The Jurisdictional Regulators recommend that:

8.1 The Jurisdictional Regulators are of the view that rolling out interval meters to all customers in a jurisdiction should not proceed before an assessment of the costs and benefits has been undertaken for that jurisdiction. Such an assessment has not yet been undertaken for all jurisdictions and therefore, the sunsetting of profiling is not recommended at this stage.

8.2 Additionally, clause 7.3.4(e) should be deleted from the Code. This clause states that:

> ***The Metrology Coordinator must advise NEMMCO by no later than 30 April each year of how much longer the Metrology Coordinator proposes to continue allowing its metrology procedure(s) to contain type 6 metering installation(s) within its jurisdiction.***

8.3 Any jurisdictional assessment of the costs and benefits of interval meters[21] should utilise the assessment framework as per recommendations 2.1 and 2.2.

8.4 Any assessment of the costs and benefits of interval meters should have particular regard to the roll out of interval meters to specific groups of customers, such as:

(a) All first tier customers with annual consumption greater than z MWh, where z is determined by the jurisdiction and specified in the Metrology Procedure; and

(b) Maximising the demand management and/or demand response impacts (for example, customers above a determined threshold).

8.5 Any assessment by the jurisdictions should consider whether a new and replacement policy is appropriate for those groups of customers not targeted above.

Ring-fencing

Separation (ring-fencing) of monopoly elements of the market from competitive elements may be required to ensure that the power derived from a monopoly business does not lead to adverse outcomes in the competitive sectors. The effective operation of the market may require:

- Ring-fencing between the distributor and its related retailer; and
- Ring-fencing between the distributor's metering business that is provided as a prescribed service, the metering business that is provided as a non-prescribed service and the metering business that is provided as a contestable service.

[21] The Jurisdictional Regulators recognise the Ministerial Council on Energy Communiqué dated 1 August 2003 that recommends the 'examination of options for a demand-side response pool in the NEM, and consideration of the costs and benefits of introducing interval metering. Outcomes to be considered in 2004.'

The current ring-fencing arrangements vary by jurisdiction. The regulators in ACT, NSW, Queensland and South Australia have published ring-fencing guidelines requiring operational separation, however, there are transitional requirements in NSW and South Australia. Furthermore, the guideline in NSW specifically refers to the ring-fencing of the distributor's services provided by Accredited Service Providers (ASPs), rather than ring-fencing in the broader context. The regulators in Tasmania and Victoria[22] have not published ring-fencing guidelines, but the Victorian distribution licences require non-discriminatory access to distribution services.

In assessing ring-fencing requirements, there was regard to whether the arrangements ensure appropriate operational separation, ensure non-discriminatory access, and apply to a distributor's metering business. The Jurisdictional Regulators recommend that:

9.1 The effectiveness of the ring-fencing of each distributor's metering business should be assessed by the relevant regulator periodically.

9.2 Consistent with the move towards national consistency, the regulators should develop nationally consistent ring-fencing guidelines, to the extent possible.

Further review

Clause 7.13(g)(4) of the Code requires that, as part of this Review, the Jurisdictional Regulators are to; 'specify a date for a further review to be conducted'. The timing of a further review needs to allow sufficient time between reviews to implement many of the recommendations in this Review, to enable the outcomes to be reviewed. There are a number of recommendations that require a significant amount of time and effort to be implemented.

However the date for the review must not be too distant potentially resulting in a loss of momentum, particularly if there is a need to revisit the recommendations due to changes in the industry, changes in technology or other unforeseen changes.

10.1 The Jurisdictional Regulators recommend that a further review be completed by 30 June 2008.

10.2 The Code should be amended to specify that the objectives of this further review should be:

[22] The ESC released a draft ring-fencing guideline for consultation in March 2004

(a) To review the outcomes from this Review and where issues are identified, to make recommendations to resolve those issues;

(b) To identify any additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology; and

(c) Where additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology are identified, to make recommendations to reduce those barriers.

10.3 In recognition that regulatory uncertainty is a major barrier to the adoption of economically efficient metering solutions and other economically efficient technology, the further review should have regard to the need to maintain the regulatory certainty provided as an outcome of this Review.

Implementation of the recommendations from this Review

The Code further states that one of the objectives of this Review is to; 'propose to NECA any changes to the Code that are necessary to implement the recommendations made by this review'. However the Jurisdictional Regulators are of the view that substantial time and effort and further detailed consultation is required to draft the specific Code changes that are required to implement the recommendations of this Review. Accordingly, the Jurisdictional Regulators propose actions to ensure that the required Code changes are drafted and proposed to NECA in an appropriate time frame. The Jurisdictional Regulators recommend that:

11.1 The Jurisdictional Regulators propose that Chapter 7 of the Code be amended to implement certain of the recommendations made by this Review (as set out below). Consequential amendments may be required to other Chapters of the Code.

11.2 The Jurisdictional Regulators recommend the following process be undertaken to prepare draft Code changes for this purpose:

(a) NEMMCO should lead the Code change process and the development of the single Metrology Procedure;

(b) NEMMCO should report its progress on the Code change process to the Jurisdictional Regulators on at least a monthly basis; and

(c) The draft Code changes addressing recommendation 11.3(c) (iii) as a minimum should be in a form so as to enable submission of the draft Code changes to NECA by 31 December 2005.

11.3 The recommendations made by this Review that are to be addressed in the draft Code changes are as follows:

(a) (*first tier customers*) Chapter 7 is to be extended so that it includes metrology for both first tier customers and second tier customers (refer to recommendation 3.1);

(b) (*Metrology Procedure*) The provisions of Chapter 7 relating to metrology procedures are to be amended to:

(ii) provide for a single Metrology Procedure to apply in all jurisdictions in respect of metering installation types 1 to 7 (refer to recommendation 3.2);

(iii) make NEMMCO responsible for the Metrology Procedure (refer to recommendation 3.3); and

(iii) expressly recognise that the jurisdictions retain responsibility for key policy decisions underpinning the Metrology Procedure and provide for jurisdictional policy differences[23] to be reflected in the Metrology Procedure (refer to recommendation 3.2(d))[24];

(c) (*Responsible Person*) Chapter 7 is to be amended so that:

(i) the current approach to the choice of Responsible Person be retained for second tier customers with metering installation types 1 to 4 with the provision to extend this approach to all first tier customers with annual consumption greater than z MWh, with the decisions on the value of z and whether to make available competitive metering services for these customers being made by the jurisdiction;

(ii) the choice of Responsible Person is provided to all first tier and second tier customers with annual consumption less than z MWh with a meter that meets the requirements of a metering installation type 1, 2, 3 or 4, with the decision on whether to make available competitive metering services for these customers being made by the jurisdiction (refer to recommendation 4.2);

(iii) the distributors are the exclusive Responsible Person for all first and second tier customers with annual consumption less than z MWh and with a meter that does not meet the requirements of a metering installation type 1, 2, 3 or 4 (refer to recommendation 4.3);

[23] As discussed in section 3.5.

[24] It is noted that this approach was taken in relation to the CATS Procedures. There may be value in amending the provisions in Chapter 7 relating to the CATS Procedures, to expressly recognise that this approach was (and in the future may continue to be) taken in relation to jurisdictional differences within the CATS procedures.

(d) (*Non reversion policy*) Chapter 7 is to be amended to provide that:

(i) an interval meter must not be replaced with an accumulation meter. Any specific jurisdictional exceptions are to be specified by each jurisdiction in the Metrology Procedure (refer to recommendation 7.1); and

(ii) for customers above a certain threshold (to be specified by each jurisdiction in the Metrology Procedure) an interval meter must be read as an interval meter (refer to recommendation 7.2);

(e) (*NEMMCO reviews*) Chapter 7 is to be amended to:

(i) harmonise, and remove duplication between, the provisions of Chapter 7, the Metrology Procedure and other NEMMCO procedures in relation to metrology (refer to recommendation 3.2);

(ii) implement any outcome of the consideration to be given by NEMMCO to the current requirements for storage of, and access to, metering data (refer to recommendation 7.5); and

(iii) specify which provisions of Chapter 7 apply to which metering installation types (refer to recommendation 7.7);

(f) (*Profiling*) Clause 7.3.4(e) is to be deleted (refer to recommendation 8.2); and

(g) (*Next review*) Chapter 7 is to be amended to:

(i) require a further review to be undertaken by the Jurisdictional Regulators, to be completed by 30 June 2008, having the following objectives:

- **to review the outcomes from this Review and where any issues are identified, to make recommendations to resolve those issues;**
- **to identify any additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology; and**
- **where additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology are identified, to make recommendations to reduce those barriers; and**

(ii) require the Jurisdictional Regulators in undertaking the further review, to have regard to the need to maintain the regulatory certainty provided as an outcome of this Review (refer to recommendations 10.1, 10.2 and 10.3).

1 Introduction

The competition reforms of the 1990s have transformed Australia's electricity sector. These reforms included the separation of the previously integrated supply chain, introduced competition between generators for supplying electricity, and allowed customers to choose their retailer. The reforms have brought the network sector under access and price regulation and saw the creation of a single wholesale market for electricity known as the National Electricity Market (the NEM). The NEM currently consists of five Australian states and territories – the Australian Capital Territory (ACT), New South Wales (NSW), Queensland, South Australia and Victoria. Tasmania intends joining the NEM following completion of an undersea connection between Tasmania and Victoria in 2005.

Reform of the electricity sector has been designed to increase the efficiency of the sector for the long-term benefit of all customers and it is recognised that the reforms have already brought many benefits. Competitive pressures have seen increased generator efficiency and availability, and additional generation investment has occurred that seems to have been driven by market needs.

The reforms that allow customers to choose their retailer have now been introduced in most states participating in the NEM.[25] These reforms allow a customer to choose, from a range of retailers, the price and service package that best meets its needs. The ability of this retail market to deliver a range of price arrangements allows customers to choose how to consume power to gain maximum benefit for themselves and the electricity market as a whole. Such action by customers is an element of demand side participation in the market.

However, it is also recognised that there are reform areas that still need to be addressed[26]. A key feature of competitive markets is the active participation of both the supply and demand sides. Without this, competition is blunted and the potential benefits of competition may not be fully realised. Demand side participation is considered to have overall market benefits as well as benefits to individual customers.

The recent review of the energy market concluded that one of the reasons 'there is a relatively low demand side involvement in the NEM because residential consumers do not face price signals'[27]. This review is concerned with barriers to the introduction of efficient metering technologies, it is likely that efficient metering technologies will be those that can provide enhanced pricing signals to customers and hence the choice to respond to the pricing signals.

In conducting the review the regulators released an Issues Paper in August 2003, which developed the issues associated with the Review and the options for reducing the barriers to

[25] Except in Queensland where only large customers (those consuming more than 200 MWh per annum and, from 1 July 2004, those consuming more than 100 MWh per annum) are able to choose their retailer.

[26] Council of Australian Governments, Energy Market Review, *Towards a Truly National and Efficient Energy Market*, December 2002, p.8

[27] Council of Australian Governments, Energy Market Review, *ibid*, p. 174

economically efficient metering solutions and other technology, and for nationally consistent metrology procedures. The submissions that were received in response to the Issues Paper were considered in the development of the Draft Report (released in December 2003) which outlined the draft recommendations. This Final Report considers the submissions that were received in response to the Draft Report and outline the Jurisdictional Regulators' final recommendations arising from the Review.

While this Review makes recommendations on options for addressing barriers to the adoption of economically efficient metering solutions and other technology, options for nationally consistent metrology procedures, and changes to the Code, each jurisdiction[28] will make their own implementation decisions on many of those recommendations.

The jurisdictions participating in the Review are the ACT (Independent Competition and Regulatory Commission (ICRC)), New South Wales (Independent Pricing and Regulatory Tribunal (IPART)), Queensland (Queensland Competition Authority (QCA)), South Australia (Essential Services Commission of South Australia (ESCOSA)), Tasmania (Office of the Tasmanian Energy Regulator (OTTER))[29] and Victoria (Essential Service Commission (ESC)). A working group with a representative from each jurisdiction was formed with the ESC coordinating the activity.

1.1 Background

The National Electricity Law provides the legal basis for the NEM and the National Electricity Code (the Code), and facilitates enforcement of the provisions of the Code. The Code contains the market rules. It sets out the objectives of the NEM, and the rights and responsibilities of market participants, the market manager (National Electricity Market Management Company (NEMMCO) and the code administrator (National Electricity Code Administrator (NECA)).

Any changes proposed to the Code are forwarded by NECA to the Australian Competition and Consumer Commission (ACCC) under Part VII of the Trade Practices Act (TPA) for authorisation. Authorisation under Part VII of the TPA provides immunity from court action for certain types of market arrangements or conduct that would otherwise be in breach of Part IV of the TPA. The ACCC may grant authorisation where it concludes that the public benefits of the arrangements or conduct would outweigh the anti-competitive detriments of such arrangements or conduct.

Full retail competition was introduced into the electricity market in New South Wales and Victoria in January 2002, in South Australia in January 2003 and in the ACT in July 2003. In preparation for the introduction of FRC, amendments to the Code were submitted to the

[28] The jurisdictions that are a party to this joint review are Victoria, New South Wales, the Australian Capital Territory, South Australia, Queensland and Tasmania (as an observer).

[29] Tasmania is a member of both NECA and NEMMCO and has a NEM entry timetable linked to the completion of Basslink estimated for mid 2005.

ACCC in August 2000 for authorisation. These changes, referred to as the FRC code changes, proposed to:

- Introduce transitional metering arrangements that recognised the existing domestic metering infrastructure and accommodated the jurisdictional timeframes and policies for introducing FRC. That is, the proposed code changes allowed small customers to transfer retailers on the basis of basic meters with profiling in addition to manually read interval meters;
- Require each jurisdiction to appoint a metrology coordinator to be responsible for the development of metrology procedures that, amongst other things, facilitate the conversion of metering data into a format suitable for use in the wholesale markets settlement system. The metrology procedures were a mechanism for communicating jurisdictional policy decisions relating to FRC; and
- Clarify the roles and responsibilities of the responsible person for metering.

In August 2001, the ACCC granted authorisation to changes to the Code to facilitate the introduction of FRC.

Submissions to the ACCC's draft determination had expressed concerns about the ACCC's intention to allow for both type 5 and type 6 metering installations[30]. Particularly, concern was expressed that profiling, by its very nature, is anticompetitive and acts as a barrier to entry for second tier retailers. In its final decision the ACCC acknowledged the shortcomings of a profiling based solution but considered that:

> *the public benefits of allowing a low cost solution to promote customer choice, despite its lack of accuracy, outweighs any anti-competitive detriments associated with requiring customers who choose to change their retailer to have a metering installation* [31]

However, in allowing profiling the ACCC went on to state:

> *the Commission is not convinced that the full benefits of competition will be delivered in the longer term without a move towards interval metering. The Commission considers that … only interval metering, not profiling, will provide the potential for signals to encourage demand side responsiveness and innovative retail tariffs, thereby leading to more genuine retail competition.* [32]

Furthermore, the ACCC was concerned that multiple metrology procedures could act as a barrier to competition for retailers and impose additional costs on retailers, and noted that:

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[30] Type 5 metering installations are interval or half hourly meters which are generally read manually and type 6 metering installations are basic or accumulation meters which are settled in the wholesale market on the basis of profiling.

[31] ACCC, *Determination on Full Retail Competition and Registration of Code Participants,* August 2001, p.19

[32] ACCC, *ibid*, p.19.

> *In the longer term ... the Commission considers that the benefits of FRC will be facilitated by a single metrology procedure.*[33]

For these reasons, the ACCC imposed the condition on authorisation of the FRC code changes that the Jurisdictional Regulators must, by 31 December 2003, jointly conduct and complete a review of metering installation types 5 and 6 and of the metrology procedures. This is the Final Report of that review.

The Code changes that were authorised allowed each jurisdiction to develop its own metrology procedure, but imposed the condition that the Review consider the costs and benefits of a single, nationally consistent metrology procedure.

The ACCC was also concerned that:

> *joint distribution/retail businesses may misuse their position to deter other retailers from entering the market.* [34]

The ACCC imposed a condition that the Jurisdictional Regulators review the effectiveness of the current ring-fencing arrangements for prescribed and other services in preventing anti-competitive conduct between the distribution businesses, the retail businesses and the metering businesses. This review of ring-fencing arrangements is being undertaken in conjunction with this Review.

1.2 Code requirements specific to this review

For the reasons outlined in the previous section, the ACCC included a clause into the Code requiring the Jurisdictional Regulators to jointly conduct and complete a review of metering installation types 5 and 6, and of the metrology procedures. Clause 7.13(f) of the Code states:

> *The Jurisdictional Regulators must, by 31 December 2003, jointly conduct and complete a review of metering installations types 5 and 6 and the metrology procedures that have been implemented in the participating jurisdictions.*

Clause 7.13(g) of the Code sets out some issues that must be taken into account in undertaking the Review. It states:

> *The review conducted in accordance with clause 7.13(f) must:*
>
> *(1) in relation to metering installations types 5 and 6:*
>
> *(i) consider whether barriers exist to consumers adopting economically efficient metering solutions or other economically efficient technology and*

[33] ACCC, *ibid*, p.15.
[34] ACCC, *ibid*, p.24.

examine whether meter ownership acts as a barrier to end users switching retailers;

(ii) if it is determined, in accordance with clause 7.13(g)(1)(i), that barriers exist, the review must make recommendations in relation to reducing those barriers, in order to promote the adoption of economically efficient solutions, for example, recommendations regarding the accelerated replacement of type 6 meters with type 5 meters and/or the sunsetting of load profiling;

(iii) include in the economic analysis the cost to consumers of any stranded assets;

(iv) take into account any jurisdictional requirements in place at the time of the review in relation to new and replacement meters; and

(v) consider the effect of implementing a metering solution on consumption decisions made at the wholesale level and how this filters through to retail pricing;

(2) consider options for developing a single nationally consistent metrology procedure for each of metering installation types 5, 6 and 7;

(3) propose to NECA any changes to the Code that are necessary to implement the recommendations made by the review; and

(4) specify a date for a further review to be conducted.

The ACCC also imposed a condition in the Code that the Jurisdictional Regulators review the effectiveness of the current ring-fencing arrangements for prescribed and other services in preventing anti-competitive conduct between the distribution businesses, the retail businesses and the metering businesses. Clause 7.13(i) of the Code states that:

The Jurisdictional Regulators must, by 31 December 2002, review the effectiveness of the ring-fencing arrangements for prescribed services and other services in their respective jurisdictions:

(1) in preventing anti-competitive conduct;

(2) in providing transparency; and

(3) in providing confidence in the integrity of the competitive market arrangements between the Distribution Network Service Providers, Customers, and Metering Providers.

1.3 Overview of submissions

Submissions to the Draft Report were received from 20 parties, including distributors, retailers, meter suppliers, industry associations and consumer representatives. A full list of

parties that made submissions to the Issues Paper and/or Draft Report is provided in Appendix A.

Submissions generally supported the Draft Report recommendations, particularly the recommendation for a single national metrology procedure for meter types 5, 6 & 7, to be administered by NEMMCO, with jurisdictions retaining responsibility for underlying policy decisions. In contrast, there were diverse views from distributors and retailers/meter service providers on the recommendations related to the provision of competitive metering services and the provision of interval metering.

Views on whether the responsibility for metering services for small customers should be competitive or exclusively the responsibility of the distributor often depended on the role of the market participant. That is, distributors generally supported that they continue to exclusively be responsible for metering services for small customers, while retailers generally believed metering services and meter ownership should be opened up to competition.

The submissions generally provided support for a greater penetration of interval meters, as a form of economically efficient metering, particularly above a certain (unspecified) consumption threshold, assuming that the benefits exceed the costs. It was generally acknowledged that a greater penetration of interval meters is required to provide more cost reflective pricing to capture the potential allocative efficiencies. However, there was a preference for a market-based approach to increase the penetration, with a mandatory roll out only for specific groups of customers.

In forming the recommendations, the Jurisdictional Regulators were therefore cognisant of the need to maximise regulatory certainty while ensuring to the maximum extent possible that efficient metering solutions are available to customers by the market.

Overall, Jurisdictional Regulators were not persuaded by the submissions to materially change positions taken in the Draft Report. However, some changes have been made to the metering service provision recommendations (see section 4.4) taking into account the stakeholder submissions. A full summary of the submissions received in response to the Issues Paper is provided as Appendix B and to the Draft Report is provided as Appendix C.

1.4 Structure of the report

The remainder of this report is structured as follows:

- Section 2 discusses the framework for assessing options for the reduction of barriers to the adoption of economically efficient metering solutions and other technology;
- Section 3 discusses how greater national consistency in the metrology procedures is to be achieved;

- In section 4 a final recommendation is made with respect to the responsibility for metering services to reduce a potential barrier to the adoption of an economically efficient metering solution or other technology option;
- In section 5 a final recommendation for meter ownership is proposed which is consistent with the final recommendation on metering services;
- Section 6 discusses the potential barrier arising from the lack of flexibility to vary distribution and retail tariffs;
- Section 7 examines other legal and regulatory barriers to the adoption of an economically efficient metering solution or other technology option, namely the 'non reversion' policies for interval meters, technical metering issues (the period for which metering data is stored, the provision of access to metering data, and the enforcement of unique Australian metering standards) and the applicability of the Code to metering installation types 5, 6 and 7;
- Section 8 discusses a range of metering solutions and other technology options and options for deploying economically efficient technology;
- Section 9 discusses the effectiveness of existing ring-fencing arrangements in each of the jurisdictions to prevent anti-competitive conduct between the distribution businesses, the retail businesses and the metering businesses;
- Section 10 discusses the appropriate timing and objectives for a further review required under the Code; and
- Section 11 identifies the Code changes that are required to ensure that the desired outcomes from this Review are achieved.

2 Developing the assessment framework

An important element of the Review is to develop a framework that may be used to:

- Determine whether barriers exist to customers adopting economically efficient metering solutions or other economically efficient technology; and
- Determine and compare any options that are identified to remove these barriers.

Subsequent to the Review, the jurisdictions intend to use this assessment framework as a basis for subsequent consideration of the recommendations from the Review.

The assessment framework, developed by reference to the Code requirements that are relevant to this Review, consists of the following criteria:

- *Economic efficiency* – potential barriers are assessed in terms of their economic costs and benefits by reference to productive, allocative and dynamic efficiency.
- *Practicality* – the costs and benefits of removing any barriers are also assessed from a practical perspective.
- *Equity* – the incidence on particular customers and market participants of the costs and benefits of any barriers is assessed.

The Code, consistent with economic theory, creates a strong assumption that 'economic efficiency' will be achieved by allowing customers to make choices in regard to their electricity retailer, the way in which they are metered, and their electricity consumption. These choices are provided in the expectation that the competitive process will lead to improvements in the efficiency with which services are provided and electricity is priced, and enable demand side participation. More importantly, these choices are being provided because improvements in the efficiency with which services are provided and electricity is priced, are expected to benefit customers[35].

2.1 Draft recommendation

In the Draft Report[36], the Jurisdictional Regulators concluded that the assessment framework developed in the Issues Paper was considered appropriate and recommended that:

- The assessment framework (economic efficiency, practicality and equity) is considered to be appropriate for consideration of the issues;
- Any subsequent consideration of the outcomes of this Review also adopt this assessment framework;

[35] Although some customers may not see improvements in the way that electricity is priced because they may choose not to change their consumption of electricity.

[36] Jurisdictional Regulators, *Joint Jurisdictional Review of the Metrology Procedures*, Draft Report, December 2003, p.28

- Jurisdictions may add jurisdictional-specific criteria (such as social equity); and
- The criteria may be weighted.

2.2 Social equity as a criterion

Both the Public Interest Advocacy Centre (PIAC) and the Australian Consumers' Association (ACA) believe that social equity should be part of the assessment framework, rather than an optional jurisdictional-specific criterion. ACA believes that:

> *potential for impaired social equity seems to be one of the major potential negative impacts of changed metering arrangements, and this facet should be given more assessment weight and at a national level.*

The Jurisdictional Regulators note that the consumer protection legislation and mechanisms currently vary by jurisdiction. Social equity as a criterion is therefore considered to be jurisdictional-specific and will need to be tailored to meet the needs of each jurisdiction.

National consistency of consumer protection mechanisms is not within the scope of this Review. The appropriate forum is more likely to evolve through the establishment of a National Energy Regulator, as proposed in the Parer report[37].

2.3 Jurisdictional-specific criteria

There was a level of concern that the assessment framework may not be appropriately applied by the jurisdictions. Ergon Retail, United Energy and TXU, while generally supporting the draft recommendations, expressed concerns that they were high level and may therefore be interpreted and applied differently by the Jurisdictional Regulators, thus leading to different outcomes in the different jurisdictions.

Similarly, EnergyAustralia believes it will be important for participants to understand each jurisdiction's approach to weighting, social equity and other jurisdictional-specific factors, and therefore called for the publication of jurisdictional assessment frameworks as soon as possible.

Origin Energy did not support jurisdictional-specific criteria on the basis that this runs counter to the general trend of regulatory convergence and a national electricity market. Ergon Retail, however, indicated that it has:

> *long been an advocate of the need to balance the quest for consistency across jurisdictions with individual jurisdictional market development and policy preferences.*

[37] Council of Australian Governments, Energy Market Review, *ibid*, p 83

As discussed in the Draft Report, the assessment framework proposed for this Review is expected to be a component of the framework that will be applied by each of the jurisdictions in their decision-making. Whilst jurisdictional differences remain, the jurisdictions will need the flexibility to factor in jurisdictional based criteria.

EnergyAustralia sought greater certainty through the publication of the jurisdictional-specific criteria and the weightings. One of the six areas of energy market reform identified by the Ministerial Council on Energy (MCE) is User Participation. User Participation includes consideration of the 'costs and benefits of interval metering (to) increase the value of energy services to households and business'[38]. A Discussion Paper was recently released by the MCE's Standing Committee of Officials on User Participation[39]. It is expected that each jurisdiction's assessment framework is most likely to be published when the outcomes of this Discussion Paper are implemented. The MCE has indicated that 'outcomes (are) to be considered in 2004'[40].

Notwithstanding the above, it is expected that each jurisdiction will establish their own processes for developing and publishing the assessment framework for their jurisdiction.

2.4 Barriers to customer choice

AGLE reiterated its view that the focus of the Review should be barriers to customer choice in metering, rather than economic efficiency, as it is the removal of barriers to choice that will lead to more efficient outcomes.

As discussed in the Draft Report, the Jurisdictional Regulators define an 'economically efficient' outcome as one that facilitates choice by the customer, in regard to their electricity retailer, the way in which they are metered, and their electricity consumption[41]. The objective of the Review is then to identify any barriers that may be distorting the ability to make those choices. The Jurisdictional Regulators only intend to intervene where there are institutional barriers and there is a net benefit of doing so. This is consistent with a 'light handed' regime of regulation as required by the Code[42].

[38] Ministerial Council on Energy Communiqué, 1 August 2003, p 3

[39] Ministerial Council on Energy Standing Committee of Officials, *Improving User Participation in the Australian Energy Market*, Discussion Paper, March 2003

[40] Ministerial Council on Energy Communiqué, 1 August 2003, p 1

[41] Joint Jurisdictional Regulators, *ibid*, Issues Paper, p.13

[42] National Electricity Code, clause 1.4(b)(1)

2.5 Final recommendation

On the basis of the submissions received, the Jurisdictional Regulators do not propose any changes to the draft recommendation on the assessment framework. The final recommendation is therefore:

2.1 The assessment framework consisting of the following criteria:

- **Economic efficiency – potential barriers are assessed in terms of their economic costs and benefits by reference to productive, allocative and dynamic efficiency;**
- **Practicality – the costs and benefits of removing any barriers are also assessed from a practical perspective; and**
- **Equity – the incidence on particular customers and market participants of the costs and benefits of any barriers is assessed,**

is considered to be appropriate for consideration of these issues. The Jurisdictional Regulators therefore recommend that any subsequent consideration of the outcomes of this Review also adopt this assessment framework.

2.2 Jurisdictions[43] may add jurisdictional-specific criteria which are consistent with the jurisdiction's objectives under legislation (eg social equity) and government's energy policy objectives. The criteria may be weighted.

[43] The matters that are the responsibility of the government, and those which are the responsibility of the Jurisdictional Regulator, vary between jurisdictions. Accordingly, references in this Review to 'jurisdictions' is intended to refer to the government and/or the Jurisdictional Regulator as appropriate in the context.

3 National consistency of metrology procedures

Metrology procedures have been developed in each of the jurisdictions where FRC has been introduced to, amongst other things, facilitate the conversion of metering data into a format suitable for use in the wholesale market settlement system. The metrology procedures are also a mechanism for communicating jurisdictional policy decisions relating to some aspects of FRC to the market. The ACCC has previously expressed concerns that the benefits of FRC would be reduced without nationally consistent metrology procedures[44] and therefore the Code requires that this Review 'consider options for a single nationally consistent metrology procedure for each of metering installation types 5, 6 and 7'[45].

The Jurisdictional Regulators note that in the development of the published metrology procedures, considerable consistency across jurisdictions has already been achieved. Key jurisdictional differences in the metrology procedures relate to specific jurisdictional polices for FRC including the form of profiling that is applicable in each jurisdiction.

A range of options for increasing the extent to which the metrology procedures are nationally consistent were identified and discussed in the Issues Paper:

Option 1 Maintaining the status quo, that is, continuing with the jurisdictional metrology procedures with no changes.

Option 2 Continuing with the jurisdictional metrology procedures in their current form but conducting a joint review to remove the minor differences that currently exist.

Option 3

- Amend the jurisdictional metrology procedures so that:
- the minor differences that currently exist across the jurisdictions are consistent; and
- the obligations that are reasonably consistent across the jurisdictions and are duplicated in NEMMCO documents are removed.

Option 4 Remove from the jurisdictional metrology procedure all provisions that are reasonably similar into a new common NEMMCO document. The obligations that are already duplicated in NEMMCO documents will be removed from the jurisdictional metrology procedures but not included in the new common NEMMCO document.

Option 5 All provisions in the jurisdictional metrology procedures that are reasonably similar will be placed in a new common NEMMCO document. The obligations that are already duplicated in NEMMCO documents will not be duplicated in any other instrument. Where there are currently major

[44] ACCC, *ibid*, August 2001, p.15
[45] National Electricity Code, clause 7.13(f)(2)

differences between the jurisdictional metrology procedures, the new common NEMMCO document will refer to the jurisdictional Metering Code or similar.

Option 6 All provisions in the jurisdictional metrology procedures that are reasonably similar will be placed in a new common NEMMCO document. The obligations that are already duplicated in NEMMCO documents will not be duplicated in any other instrument. Where there are currently major differences between the jurisdictional metrology procedures, the new common NEMMCO document will include tables identifying the different jurisdictional positions in a similar way to the existing CATS procedures[46].

Option 7 All provisions in the jurisdictional metrology procedures that are reasonably similar will be placed in a new common NEMMCO document. The obligations that are already duplicated in NEMMCO documents will not be duplicated in any other instrument. Where there are currently major differences between the jurisdictional metrology procedures, the new common NEMMCO document will include tables identifying the different jurisdictional positions in a similar way to the existing CATS procedures[47]. All metering provisions in other jurisdictional instruments that are not related to customer billing or customer protection provisions will also be included in the new common NEMMCO document.

3.1 Draft recommendation

Option 7 was generally supported by submissions to the Issues Paper. Accordingly, in the Draft Report[48], the Jurisdictional Regulators recommended:

- The extension of Chapter 7 of the Code to include first tier metering;
- The development of a single national Metrology Procedure to cover first and second tier metering including tables to identify jurisdictional policy differences, such as:
  - The form of profiling that is applicable in each jurisdiction;
  - The use of Accredited Service Providers in NSW;
  - The threshold below which type 5 and 6 metering installations may be used in the jurisdiction;
  - First tier metering data that must be sent to NEMMCO for deriving the profile;
  - 'Non reversion' policies that apply in each jurisdiction; and

[46] NEMMCO, *MSATS Procedures: CATS Procedures, Part 1 Principles and Obligations*
[47] NEMMCO, *ibid*
[48] Jurisdictional Regulators, *ibid*, Draft Report, p.34

- On and off times for unmetered supplies controlled by photoelectric (PE) cells, principally streetlighting;

- Harmonising all technical metrology provisions, including:
  - The procedures for validation substitution and estimation;
  - The capabilities of Metering Providers;
  - The first tier data that is sent to NEMMCO for settlement purposes; and
  - The profiling algorithms; and
- The Code be varied to give NEMMCO responsibility for the single national Metrology Procedure.

3.2 Extension of Chapter 7 of the Code to include first tier metering

AGLV, Australian Inland, Elster Metering, EnergyAustralia, Integral Energy and TXU explicitly supported the extension of Chapter 7 of the Code to include first tier metering. United Energy also supported this draft recommendation, but only on the condition that there would be no changes to the existing obligations that would require systems and processes to be updated, thereby resulting in additional costs.

3.3 Development of a single national Metrology Procedure

Most of the submissions to the Draft Report supported the development of a single national Metrology Procedure[49]. Interested parties commonly believe that this recommendation would reduce the potential for confusion and misunderstanding potentially resulting from having multiple metering documents.

Conditional support for this draft recommendation was provided by some submissions. For example, Powercor and CitiPower support the draft recommendation provided an appropriate mechanism is established to provide for the recovery of any additional costs incurred. Similarly, United Energy is concerned that a review of other related procedures may impact on systems and processes resulting in additional costs to consumers.

The Jurisdictional Regulators do not anticipate that the development of a single national Metrology Procedure will lead to significant changes to processes and systems. The jurisdictional Metrology Procedures are currently, largely consistent. Amendments to specific aspects of the Metrology Procedure are only proposed where these are expected to lead to greater efficiencies. Accordingly, it is noted that submissions to the Issues Paper indicated that the development of a single Metrology Procedure and the harmonisation of

[49] See, for example, the submissions to the Draft Report from AGLV, Australian Inland, Centurion, Country Energy, Elster Metering, Email Metering, Energy Australia, Integral Energy, NEMMCO, Origin Energy, TXU and Powerdirect.

metering-related instruments is expected to reduce to lower costs through economies of scale and reduced compliance costs (refer Appendix B.2).

Ergon Retail also supports the draft recommendation, but believes that:

> *jurisdictions that are still developing their metrology framework should not be forced to conform to the metering decisions taken by other jurisdictions, at the expense of implementing policy that delivers optimal outcomes.*

First tier metering is currently regulated by the jurisdictions, with limited consistency across the jurisdictions. There may be a greater probability of an impact on businesses' processes and systems arising from changes to the regulation of first tier metering. The Jurisdictional Regulators therefore propose that first tier metering that meets the current jurisdictional requirements be explicitly grandfathered under the new arrangements. The recommendation has been amended accordingly.

3.4 Non-technical provisions

Australian Inland and Ergon Retail explicitly support the exclusion of non-technical provisions, such as consumer protection, from the single national Metrology Procedures, on the basis that these are politically sensitive issues and there are likely to be divergent opinions on these matters between the jurisdictions.

However, the ACA believes consumer protection should also be nationally consistent and is therefore concerned about this draft recommendation:

> *In one view it is a good thing, particularly for states that have achieved a reasonable level of consumer protection. However in the context of a drift towards a national regulatory framework, it also smacks of consigning consumer protection to a residual category along with social equity. Consumer protection measures vary, and will deliver a patchy result. The pressing issue for us is the transition of consumer protection from a state-by-state basis to create a national highest common denominator network of protection for the whole of Australia.*

As discussed previously in section 2.2, consumer protection legislation and mechanisms currently vary by jurisdiction. National consistency of consumer protection mechanisms is not within the scope of this Review. It is therefore not appropriate to include consumer protection provisions in a national metering instrument. The appropriate forum is more likely to evolve through the establishment of a National Energy Regulator, as proposed in the Parer report[50].

[50] Council of Australian Governments, Energy Market Review, *ibid*, p 83

3.5 Use of jurisdictional tables

There was general support for the use of tables to identify jurisdictional differences in the Metrology Procedures. However, support for this aspect of the draft recommendation was conditional in some submissions.

Origin Energy and TXU believe that the aim in the long term should be to minimise the extent of jurisdictional differences. Given the moves towards national consistency, it is expected that the jurisdictional differences will be minimised in the long term.

Ergon Retail seeks clarification on who is responsible for managing the technical aspects of jurisdictional policy differences (e.g. technical aspects of profiling) and which issues are considered policy. Ergon Retail believes the issues to be covered in the jurisdictional-specific tables need to be identified, and suggests that the following policy areas be included:

- Interval meter roll out timing;
- Distributor ownership of large first tier customer metering;
- Distributor responsibilities; and
- An obligation to list metering services, as distinct from DUoS charges.

As discussed in the Draft Report, it is expected that the jurisdictional policy tables will specify:

- The form of profiling that is applicable in each jurisdiction;
- The use of Accredited Service Providers in NSW;
- The threshold below which type 5 and 6 metering installations may be used in the jurisdiction (value of x and y respectively);
- First tier metering data that must be sent to NEMMCO for deriving the profile;
- 'Non reversion' policies that apply in each jurisdiction; and
- On and off times for unmetered supplies controlled by photoelectric (PE) cells, principally street lighting.

A number of other matters were suggested for inclusion in the jurisdictional policy tables. These matters may need to be included in the jurisdictional policy tables for the following reasons:

- **Threshold for a large customer.** The implementation of the recommendation on the responsibility for metering services (refer section 4.3) and meter ownership (refer section 5.2) will require the jurisdictional policy tables to specify the jurisdictional threshold for a 'large' customer.
- **Date from which metering service charges are to be unbundled from DUoS charges.** The implementation of the recommendation on the unbundling of metering service charges (refer sections 4.5 and 4.6) may result in varying jurisdictional dates for bringing

into effect this recommendation. These jurisdictional dates may also need to be specified in the jurisdictional policy tables.

- However these dates, where applicable, are more likely to be specified elsewhere within the regulatory framework.
- **Embedded networks.** The arrangements for embedded networks also currently vary by jurisdictions. Embedded networks have been the subject of a review by NEMMCO. Where possible the arrangements for embedded networks will be consistent. However any residual jurisdictional differences will need to be specified in the jurisdictional policy tables.
- **Timing of an interval meter roll out.** The Jurisdictional Regulators note that most jurisdictions have not undertaken an assessment of the costs and benefits of rolling out interval meters. The wording of some clauses (for example, the threshold for a type 6 metering installation and the obligation to install standard meters) may therefore vary by jurisdiction based on the timing of such a roll out. These differences may also need to be included in the jurisdictional policy tables.

3.6 Harmonisation of instruments

Origin Energy suggests that the removal of duplicated or inconsistent obligations in other NEMMCO procedures and/or the Code be extended to regulations and guidelines under jurisdictional regulators (e.g. the Electricity Customer Metering Code). Further, where differences remain, it should be because there was not a net benefit in aligning the requirements.

The extension of the Code and Metrology Procedure to include the technical provisions for first tier metering implies that the technical provisions in the regulations and guidelines under jurisdictional regulators will be replaced. The Jurisdictional Regulators will be responsible for removing these obligations from the jurisdictional regulatory framework. It is noted however, that non-technical provisions in regulations and guidelines under jurisdictional regulators will remain within the jurisdiction's regulatory framework.

3.7 Giving NEMMCO responsibility for the national Metrology Procedure

AGLV, Country Energy, Australian Inland, Elster Metering, EnergyAustralia, Integral Energy and TXU support giving NEMMCO the responsibility for the single national Metrology Procedure.

Subject to the Jurisdictional Regulators' final recommendations, the NEMMCO Board has endorsed NEMMCO providing ongoing operational support for the new NEM functions. NEMMCO understands that this includes a role as Metrology Coordinator for the single national Metrology Procedure. Furthermore:

> *NEMMCO proposes to include a provision for expenditure up to $550,000 in the 2004/2005 budget to cover employee and contractor resources to support this work. Similar provisions are anticipated to be required in subsequent years, subject to clarification of work to implement the new metrology framework and to support its ongoing operation. This expenditure will be recovered through participant (FRC) fees.*[51]

The Jurisdictional Regulators acknowledge the costs provided by NEMMCO to implement the recommendations of this Review. In doing so, the benefits of implementing the recommendations, as provided in submissions to the Issues Paper, are also noted:

- Economies of scale, and reduced prices for interval meters (Business SA, Nilsen, Country Energy and AGLE);
- Reduced compliance costs and simpler compliance monitoring, leading to greater levels of compliance (Origin Energy, Ergon Network, United Energy): and
- Facilitation of competition across state borders (Business SA, Origin Energy, United Energy, Country Energy).

Additionally, the costs incurred by each of the Jurisdictional Regulators to regulate metering are also expected to reduce.

3.8 Final recommendation

As noted above the draft recommendation has been amended to include the grandfathering of first tier metering. The Jurisdictional Regulators recommend:

3.1 Chapter 7 of the Code should be extended to include first tier metering.

3.2 A single national Metrology Procedure should be developed which should:

(a) Include technical metrology provisions for first and second tier customers;

(b) Ensure that, where necessary, existing first tier metering is grandfathered with respect to compliance with technical metering standards;

(c) Exclude non technical provisions, such as consumer protection, which will continue to be the responsibility of the jurisdictions;

(d) Be similar to the approach adopted in the CATS Procedures[52], whereby:

(i) The jurisdictions continue to be responsible for the key policy decisions underpinning the Metrology Procedure; and

[51] NEMMCO submission, Covering letter

[52] Procedures developed by NEMMCO for the Customer Administration and Transfer System.

(ii) Jurisdictional policy differences are identified in tables in the Metrology Procedure; and

(e) Seek to ensure that obligations that are duplicated in other NEMMCO procedures and/or the Code are harmonised so that wherever possible the obligations appear only once in the combined metrology requirements.

3.3 The Code should be varied to give NEMMCO the responsibility for the single national Metrology Procedure.

4 Responsibility for metering services

Customer metering has assumed an enhanced role in the competitive market. Metering does not just determine the customer bills but settlement between the retailer and the market, and the commercial arrangements between the retailer and the network. Determining who is responsible for, and who can own, the meter is important to the operation of the market and to innovations that benefit customers.

In this section metering services are defined to encompass:

- Meter provision, which includes the supply, installation and maintenance of metering installations; and
- Metering data services, which include the collection, processing and storage of, and provision of access to, energy data.

The related issue of meter ownership is discussed in section 5.

4.1 Current Arrangements

The distributor is currently generally responsible for first tier metering under various jurisdictional instruments[53].

For second tier customers, the 'Responsible Person' has responsibility for the supply, installation and maintenance of meters, under the Code. The Responsible Person may be either the retailer[54], or the distributor, where nominated by the retailer[55]. That is, there is competition as the retailer has the choice of whether the retailer or the distributor is responsible for the metering installation.

Each jurisdiction that has introduced FRC has a transitional derogation[56] to the Code to allow the distributor to exclusively be the Responsible Person for small second tier customers[57]. These transitional derogations are often referred to as the 'exclusivity' derogations. If the derogations expire, and without any other relevant Code changes, metering services for small customers will not exclusively be the responsibility of the distributor as it has been.

Exclusivity was originally introduced as a transitional measure to address issues of cost and complexity which would have arisen had competition for metering services been introduced

[53] The retailer is responsible for prepayment meters in Tasmania.

[54] National Electricity Code, clause 7.2.3

[55] National Electricity Code, clause 7.2.2

[56] In the case of NSW and Victoria, the derogations expired on 1 July 2004, the derogation for South Australia ceases on 1 July 2005, while the derogation for the ACT expires on 28 February 2006.

[57] The derogations apply to second tier customers with metering installation types 5, 6 and 7 in the ACT, South Australia and Victoria, and to second tier customers consuming less than 100 MWh per annum in NSW. The derogations do not apply to customers with type 4 metering installations

simultaneously with the introduction of FRC. This transitional measure was justified on the basis that the benefits provided by exclusivity (over the transitional period) would outweigh the costs. Allowing the exclusivity derogations to expire after the transitory period is predicated on the view that metering competition will facilitate innovation, both in terms of the types of meters installed and the way in which those meters are read. This report considers which customers should have the availability of metering competition in section 4.4.

The current metering services arrangements, emphasising where they are competitive and non competitive are summarised in Table 1.

Table 1: Current responsibilities for metering services

	First tier customers	Second tier customers
Competitive metering services	Competitive metering services are not available to any first tier customer	Customers with a metering installation type 1– 4[58]
Distributor responsible (non competitive metering services)	All 'large' and 'small' customers	Customers with a metering installation type 5, 6 or 7 (see footnote 58)

4.2 Draft recommendation

The Jurisdictional Regulators considered whether the current metering services arrangements act as a barrier to the adoption of economically efficient metering solutions and other technology that will provide net benefits to a greater number of consumers.

Whilst the submissions to the Issues Paper did not agree on whether metering services should be provided on a competitive basis or exclusively by the distributor, some submissions argued that it was the uncertainty associated with the existing transitional arrangements that is a barrier to the adoption of economically efficient metering solutions and other technology. The Jurisdictional Regulator's preferred option would therefore be to conclude these transitional arrangements and proceed with metering services being provided either as a competitive service[59] or as an exclusive service by the distributor.

[58] In NSW customers with a metering installation type 5 and annual consumption greater than 100 MWh per year also have competitive metering services available

[59] A competitive basis is where the retailer has the option to determine whether the person responsible for metering services will be the distributor or the retailer

In the Draft Report[60], the Jurisdictional Regulators recommended that equitable metering services arrangements should apply across first tier and second tier customers.

Whilst the Jurisdictional Regulators support the view that competitive metering services in principle in a properly functioning competitive market can provide net benefits they found that the potential benefits to small customers were likely to be less than the costs of doing so. They were concerned that metering competition for small customers may inhibit churn in the primary retail electricity market.

Accordingly, the following draft recommendations were made:

- **'Large' customers** – in the longer term, extend the current competitive metering services arrangements for second tier customers with metering installation types 1 – 4 to 'large' first tier customers;
- **'Small' customers** - distributors should exclusively be responsible for metering services for all 'small' first tier customers and second tier customers with metering installation types 5 – 7. In the shorter term extensions to the derogations should be sought and in the longer term, the Code should be amended to reflect this position; and
- **Unbundling of metering service charges** - the jurisdictions should unbundle metering service charges from the DUoS charges.

The metering services arrangements recommended in the Draft Report are summarised in Table 2 below.

Table 2: Responsibilities for metering services as recommended in the Draft Report

	First tier customers	Second tier customers
Competitive metering services	'Large' customers	Customers with a metering installation type 1 – 4
Distributor responsible	'Small' customers	Customers with a metering installation type 5 – 7

While submissions[61] to the Draft Report commonly supported equitable metering arrangements across first and second tier customers, there were divergent views on the recommended metering services arrangements for 'large' and 'small' customers, and the unbundling of metering services charges from DUoS charges.

[60] Jurisdictional Regulators, *ibid*, Draft Report, pp.43-44

[61] See, for example, the submissions to the Draft Report by AGLV, Australian Inland, NEMMCO and TXU. No submissions explicitly opposed this recommendation.

4.3 Separation of meter provision and metering data services

Centurion believes that the different types of metering services should be competitively provided, and if they are not to be competitively provided they should be separately regulated. Therefore, Centurion urges the Jurisdictional Regulators to consider its recommendations separately for each area of the meter services functions.

ETSA Utilities believes that the current arrangements for large second tier customers act as a barrier to switching, and provides the following reasoning:

> *It has been our experience in SA that where a retailer either takes over as the responsible person from another retailer or the distributor they change the metering installation even where the installation is NEC compliant. This appears to increase the costs to customers as the retailer must recoup this cost.*

To minimise costs, ETSA Utilities considers that the distributor should obtain the meters, with the meters chosen to provide maximum flexibility to provide additional services to customers. This option would still enable the retailer to choose the preferred Meter Data Agent.

Whilst the Jurisdictional Regulators have considered meter ownership separately in section 5, the responsibility for meter provision and for metering data services have not been considered separately. There is an interdependency between the meter and the provision of metering data. This interdependency is currently managed through the Responsible Person. If the responsibilities for these functions were to be separated then there is a concern that boundary issues may arise. For example, if there is an error in the metering data, then there may be a dispute as to whether this is due to the meter and associated equipment or in the collection and processing of the data.

The retailer has an incentive to provide a cost-effective solution to the customer in the competitive retail market. Where the retailer removes a working meter on the transfer of a customer then there should be either; (1) a perceived benefit to the retailer to do so, (2) an immaterial cost impact relative to energy costs or (3) a barrier to the transfer of the meter responsibility.

4.4 Competitive metering services

AGLV, Australian Inland, Centurion, EnergyAustralia, TXU and Ergon Retail support the draft recommendation to expand contestable metering to all large customers.

Additionally, the distributors[62] generally, as well as the ACA and PIAC, support the draft recommendation that distributors should be responsible for metering services for all 'small'

[62] See, for example, the submissions to the Draft Report by Australian Inland, Country Energy, EnergyAustralia, Integral Energy, Powercor, CitiPower and TXU.

first tier customers and second tier customers with metering installation types 5 – 7. However the retailers (AGLV, Origin Energy and Powerdirect) and Centurion were strongly opposed, believing that only customer choice can result in efficient innovation.

Australian Inland, Country Energy, EnergyAustralia and Origin Energy support achieving a uniform definition of a 'large' customer. Country Energy believes this would facilitate competition across jurisdictions, while reducing compliance and administration costs. Ergon Retail believes that setting a uniform threshold for 'large' customers would complicate retailers' and distributors' obligations under the Metrology Procedures for retailers and distributors that service customers in the ACT and Queensland. For this reason, Ergon Retail recommends that the jurisdictional policy tables in the single national Metrology Procedure be used to define the 'large' customer threshold in each jurisdiction.

In the Draft Report, the Jurisdictional Regulators suggested a single definition across jurisdictions would be preferable, as it would reduce complexities associated with working across jurisdictions and reduce compliance costs[63]. Notwithstanding, it was recommended that each jurisdiction specify a threshold for 'large' customers[64]. It is expected that the development of a national approach to metrology will give further consideration as a matter of course to the question of jurisdictional alignment.

A number of submissions sought clarification on the definition of a 'large' customer. AGLV was uncertain as to whether the threshold would be based on consumption or type of metering installation. TXU believes there should be some certainty provided around the threshold to reduce the risk that the definition of large becomes progressively smaller, thereby subjecting distributors to higher risk of asset stranding.

4.4.1 Which customers should have competitive metering services available?

On the basis of the submissions received, the Jurisdictional Regulators have further considered which customers should have competitive metering services available to them, that is, the appropriate definition of a 'large' customer as considered in the Draft Report. Consistent with the submissions, the definition for a 'large' customer has been considered on the basis of consumption, the meter technology (that is, whether the meter is manually read or remotely read) and frequency of data collection for wholesale market settlement (that is metering installation types 1 to 4 which are read at least weekly and metering installation types 5 and 6 which are read less frequently).

The definition of a 'large' customer and therefore the availability of competitive metering services needs to balance the innovation that might be possible, the economies of scale that may be realised particularly with the manual reading of meters, any barriers to switching retailers that may be created, and the need for a definition that is simple and clear.

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[63] Jurisdictional Regulators, *ibid,* Draft Report, p.40

[64] Jurisdictional Regulators, *ibid,* Draft Report, p.77

The definition of a 'large' customer also needs to consider the downside risks of competition for metering services that were discussed in the Issues Paper. In summary these risks are:

- The operational complexities – maintenance and testing of meters, universal metering, coordination of processes across multiple parties, and load control;
- The potential for increased costs due to loss of economies of scale;
- The continuity of metering services in a Retailer of Last Resort event;
- The risk of errors in metering data because retailers do not necessarily have the appropriate skills; and
- The potential barrier for new entrant retailers and to customers switching retailers, thus diminishing the potential for customers to choose their retailer.

The Jurisdictional Regulators have also been cognisant that the definition must accommodate each of the jurisdictions, noting that the current 'exclusivity' derogation in NSW differs to the derogations in the other jurisdictions (the derogation in NSW is based on metering installation type and annual consumption whereas the derogations in the other jurisdictions are based only on metering installation type). Additionally, it needs to accommodate smaller customers that elect to install a metering installation type 4.

If a 'large' customer was defined on the basis of consumption then, as indicated in the Draft Report, the costs of metering services for these large customers are a small proportion of their electricity bill. Any inefficiencies that may be associated with a competitive metering service are likely to be immaterial. The downside risk of competitive metering services is therefore limited but there is an upside risk with the potential for more innovative metering services for these customers.

If the definition of a 'large' customer is solely on the basis of consumption, then this would accommodate the different exclusivity derogations in each jurisdiction. However, it would result in a distributor exclusively being responsible for metering services for those customers with annual consumption below the threshold determined that have a metering installation type 4.

The Jurisdictional Regulators therefore do not support a definition based solely on the consumption of the customer. Origin in their submission claim there is a substantial tranche of customers consuming less than 100MWh per annum for which there is an 'upside with the potential for more innovative metering solutions'. The economies of scale from non-competitive metering are primarily associated with the manual reading of meters on scheduled meter reads. Meters that meet the requirements of a metering installation type 1, 2, 3 or 4 are generally not read manually. The issue then is whether the responsibility for these meters should be competitive, regardless of the consumption of the customer and regardless of whether the customer is first or second tier.

A definition based solely on the type of metering installation does not accommodate those customers in NSW that have a metering installation type 5 and with annual consumption

greater than 100 MWh. These customers currently have metering services available on a competitive basis.

Ergon Retail sought clarification from the Jurisdictional Regulators that large first tier customers in Queensland who have not moved to market based retail contracts and are consequently subject to regulated retail tariffs, would not have competitive metering services. It is assumed that first tier customers who have not moved to market based retail contracts would have a meter installed that did not meet the requirements of a metering installation type 1, 2, 3 or 4. Under the amended recommendation it is a matter for the Queensland Government whether to make available competitive metering services for 1st tier customers and to choose the associated consumption threshold.

To facilitate innovation by retailers, the Jurisdictional Regulators therefore propose to retain the draft recommendation that the responsibility for metering services for all meters that meet the requirements of a metering installation type 1, 2, 3 or 4, regardless of consumption, should be competitive, and meters that do not meet the requirements of a metering installation type 1, 2, 3 or 4, regardless of consumption, should exclusively be the responsibility of the distributor. Additionally it is proposed that the availability of competitive metering services be based on consumption as well installation type. A customer with an annual consumption greater than z MWh, where z is determined by the jurisdiction, or that has a metering installation type 1, 2, 3 or 4 would have available competitive metering services.

Whilst recommending that distributors have exclusivity for the responsibility for the metering installations for small customers this responsibility involves, primarily, Code obligations. The operational functions of meter provision and meter data services are currently and will continue to be competitively provided to the distributors as meter manufactures and service providers compete to supply these services.

The key advantage of providing for metering competition is that it may facilitate innovation, both in terms of the types of meters installed and the way in which those meters are read. While the existing arrangements may be a barrier to the adoption of economically efficient metering solutions and other technology, there is, however, a counter argument that the economies of scale from exclusivity may minimise costs and enable innovation. Additionally, competitive metering services may inhibit the productive efficiencies associated with retail competition by increasing the potential for:

- Meter churn;
- Reduced efficiencies in meter reading;
- Increased metering costs, including additional costs due to the stranding of assets, resulting in a lack of effective competition; and
- Introducing operational complexities, including maintenance and testing of meters, ensuring universal metering, coordination of processes across multiple parties, and load control.

The benefits of introducing competition in metering services need to be viewed in the context of the relative importance of metering services compared to the total retail service. That is, the costs or benefits to customers of a small change in the effectiveness of retail competition may be greater than the costs or benefits to customers associated with the introduction of retailer choice of Responsible Person for metering services.

Hence, whilst the Jurisdictional Regulators support, in principle, that competitive metering services can provide net benefits, the recommendation for exclusivity for small customers has been adopted for the following reasons:

- For 'large' customers, the costs associated having a new meter installed are relatively small compared to their total electricity bill, and the opportunity for them to benefit from innovations in metering solutions and technologies are high. Therefore, the Jurisdictional Regulators are confident that the potential benefits of competition for these customers are likely to greater than the costs.
- For 'small' customers with only basic meters (the compulsory minimum meter required to participate in the market), however, the potential benefits of competition in metering services appear to be minimal. The costs of providing these services under the current arrangements are already very low[65] so there is little scope for competition to reduce these costs further. There is also little or no scope to 'add value' with a basic meter. Indeed, by reducing the economies of scale that exclusive responsibility currently enables distributors to achieve, introducing competition may increase costs for consumers.
- In addition, there is a risk that introducing competition in the secondary metering services market will result in less competition in the primary retail electricity market as a result of the cost of meter churn exceeding any benefits from switching to a retailer offering lower priced electricity.[66] The Jurisdictional Regulators believe the development and effectiveness of the main retail electricity market is more important than encouraging a sub-market for basic meters at this time.

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[65] For example, the metering service costs for residential customers in Tasmania are $26.72 per annum relative to an annual electricity bill of approximately $800. Even a 50% reduction in metering service costs represents less than a 2% reduction in the customer's electricity bill.

[66] Cap Gemini in their 2004 Complete Survey Report; "*Deregulation: Meeting the delivery and sustainability challenges*", state (page 14), " responses in the UK and New Zealand were highly critical of regulatory initiatives to introduce competition in metering. In addition to doubts about the true benefits of such an approach, significant disadvantages were identified in terms of the overall complexity, and lack of end-to-end control over the data flows of end-user prices – for example".

Furthermore, the Ministerial Inquiry in to the electricity industry in New Zealand found that, "Retail company ownership of meters has impeded the efficient switching of customers, contributing to unnecessary delays and costs that are ultimately borne by consumers. On the other hand, were the meters to have remained with the distribution companies, they would be provided by a monopoly. There are gains to be made in having meters provided in a properly functioning competitive market", Ministry of Economic Development of New Zealand, Report to the Minister of Energy, "*Inquiry into the Electricity Industry*", June 2000, page 52.

Within this framework and in the competitive market there should be an incentive for the retailer to continue to request that the distributor be responsible for metering services where the distributors have significant economies of scale. There is currently a significant cost differential between meters that do and do not meet the requirements of a metering installation type 1, 2, 3 or 4. Assuming that the distributor is providing an appropriate level of service at a fair and reasonable cost for meters other than those that meet the requirements of a metering installation type 1, 2, 3 or 4, it is not expected that the numbers of small customers installing a metering installation type 4 to access a competitive metering service will be significant. The probability of experiencing the risks identified is therefore minimal in the short term.

As this recommendation applies in particular to first tier customers (making their arrangements the essentially same as for second tier customers under the Code) where distributors are currently responsible for metering services, the decision on whether to make available competitive metering services is to be determined by each jurisdiction.

The final recommendations with respect to the provision of metering services – recommendations 4.2 to 4.3 – are summarised in Table 3.

Table 3: Responsibilities for metering services – final recommendation[67]

	First tier customers	Second tier customers
Competitive metering services	Subject to jurisdictional decision, customers that consume more than 'z' MWh per annum and / or customers that have a meter installed that meets the requirements of a metering installation type 1, 2, 3 or 4	Customers with a metering installation type 1, 2, 3 or 4[68]
Distributor responsible	Customers that consume less than 'z' MWh per annum that do not have a meter installed that meets the requirements of a metering installation type 1, 2, 3 or 4	Customers with a metering installation type 5, 6 or 7

[67] The 'z' MWh per year consumption threshold is set by each jurisdiction

[68] Subject to jurisdictional direction, customers with consumption above 'z' MWh per year may be eligible for competitive services for metering installation type 5 as well as type 1– 4.

4.4.2 Prepayment meters

For the purposes of this report, a prepayment meter is a meter located at the customer's premises that incorporates technology that relies generally on the prepayment of credit to supply electricity.

Assigning a metering installation type to prepayment meters depends on the frequency of obtaining metering data and this will depend on the meter technology (smart or magnetic card or keypad, for example). It cannot be assumed that the metering data would be obtained from these meters on a frequency required by a metering installation type 4. Accordingly prepayment meters would be classified either as a type 5 metering installation (if it measures and records interval metering data) or a type 6 metering installation (if it does not measure and record interval metering data). The distributors would therefore be considered to be generally responsible for the metering services for prepayment meters.

United Energy concurs with this view, specifically that:

> *the distributor is best placed to provide such metering to ensure that the customer is not locked into prepayment metering technology at any time and maintains the ability to choose alternative retailers whose service offering may best meet their needs at a particular period in time.*

Despite United Energy's position, prepayment will generally be a retailer initiative involving customer choice and the retailer will need to develop systems to support specific prepayment arrangements. Hence, there is an argument that prepayment metering should be competitive and that a distributor should not be obliged to provide prepayment as part of the default service. Alternatively, a distributor may take a strategic and commercial decision to offer prepayment metering more cost effectively to retailers in its area as a result of its economies of scale. It is likely that distributors will offer a greater range of meters at incremental cost when the current uncertainty surrounding the responsibility for metering services is resolved.

Prepayment metering present some complex issues and involve a range of potential technological approaches to metrology. Jurisdictions are likely to have individual approaches to the application of prepayment meters and their cost recovery given their higher cost, the social factors and the necessary involvement of a retailer. However, the regulators are of the view that there is currently no evidence that the existing arrangements would be a barrier to the adoption of economically efficient metering solutions in the specific case of prepayment metering and that responsibility for prepayment meters should continue to be based on the meter type definitions.

4.5 Unbundling of metering charges from DUoS charges

The distributors and consumer advocates generally opposed the unbundling of metering service charges from DUoS charges, partly on the basis that this was counter-intuitive given distributor responsibility for metering services for small customers. However, the

Jurisdictional Regulators believe this is a necessary prerequisite for enabling customer choice in metering technologies where there is distributor responsibility for metering services. The extension of competitive metering services to all customers with meters that meet the requirements of a metering installation type 1, 2, 3 or 4 will promote greater customer choice. The Jurisdictional Regulators are of the view that this choice should not be constrained, however, by consumers potentially paying for their metering twice, through a metering charge incorporated in network charges and a separate charge to the retailer providing the alternative meter.

Centurion fully supports the recommendation to unbundle charges for meter provision from DUoS charges, as it believes this is an effective way to stimulate competition amongst service providers. Centurion also believes metering charges should be unregulated as there is ample opportunity for other parties to compete against the distributor. Where the distributor provides metering services on an exclusive basis, the metering charges will continue to be regulated. However, where metering services are provided on a competitive basis, the metering charges should not be regulated.

Other recommendations by Centurion are:

- the Code be amended to remove the inclusions contained in clause 7.3.6(a) with the addition of a new provision stating that each participant must cover its own metering data costs; and
- a nomination process between the Financially Responsible Retailer and Distributor be introduced, whereby both must agree to the MDA selection based on previously negotiated contracts and pricing structures.

The Jurisdictional Regulators do not support amending clause 7.3.6(a) of the Code as suggested by Centurion. All costs associated with the metering data services for a particular customer will be charged, one way or another, back to the customer. If these costs are not charged back directly to the Market Participant, they will be incurred by the Market Participant through some other means.

The Market Participant has an incentive to secure the most cost effective metering services for its customers. The Jurisdictional Regulators therefore do not foresee a need to introduce a nomination process as proposed by Centurion. There are moves towards lighter forms of regulation rather than more.

ACA and Country Energy raised some concerns about unbundling metering charges, including that customers would see this as a new charge and that customers may be exposed to price shocks. These arguments are not valid. There should not be any price shocks due to unbundling because metering charges themselves would not change, rather the price of the metering component of DUOS charges would become more transparent to customers. In light of this, it is the retailer's responsibility to ensure that customers do not perceive an unbundled metering charge to be an additional charge.

It is noted that metering charges are currently unbundled in a number of jurisdictions (ACT, Tasmania and partially in Victoria) without any of the problems suggested by ACA and Country Energy having emerged.

4.6 Final recommendation

In conclusion the Jurisdictional Regulators recommend:

4.1 Recognising the moves towards national consistency and the need to simplify the current complex arrangements for metering services, the arrangements for first and second tier customers should, in principle, be the same.

4.2 *(Competitive metering services)* The Code should be amended to provide retailer choice of Responsible Person (that is, the retailer has the choice of whether the retailer or distributor is responsible for the metering installation) for:

(a) where determined by the jurisdiction, all first tier customers with annual consumption greater than z MWh[69];

(b) all second tier customers with annual consumption greater than z MWh;

(c) where determined by the jurisdiction, all first tier customers with annual consumption less than z MWh that have a meter that meets the requirements of a metering installation type 1, 2, 3 or 4; and

(d) all second tier customers with annual consumption less than z MWh that have a meter that meets the requirements of a metering installation type 1, 2, 3 or 4.

4.3 *(Non-competitive metering services)* Consistent with recommendation 4.2, the Code should be amended so that the distributor is exclusively responsible for metering services for all first tier and second tier customers that have a meter that does not meet the requirements of a metering installation type 1, 2, 3 or 4.

4.4 *(Shorter term)* Pending the Code changes referred to in recommendations 4.2 and 4.3, extensions to the current jurisdictional derogations that relate to the Responsible Person for metering installation types 5, 6 and 7 should be sought.

4.5 Each jurisdiction should consider the most practicable option in its jurisdiction for introducing the availability of competitive metering services to first tier customers.

4.6 As the single national Metrology Procedure is developed by NEMMCO, the jurisdictions should monitor that process and consider whether any residual and/or additional obligations should be imposed on licensees.

[69] Where z is determined by the jurisdiction

4.7 ***(Unbundling of metering service charges)*** **The jurisdictions should unbundle metering service charges[70] from the Distribution Use of System (DUoS) charges. Metering service charges that are regulated remain the responsibility of the jurisdiction. Where it has not already done so, the jurisdiction should determine the most practicable timeframe for unbundling the metering service charges, consistent with the timing of distribution price reviews.**

4.8 NEMMCO, when preparing the draft changes to the Code, should review the definitions of metering installation types 4, 5 and 6 to ascertain whether they are still appropriate taking into account the development of the market, the advances in meter technology and data acquisition and management.

[70] Charges for metering services include charges for meter provision (provision, installation and maintenance of the meter) and charges for metering data services (collection, processing and storage of, and provision of access to, metering data).

5 Meter ownership

The Code specifically requires this Review to consider whether 'meter ownership acts as a barrier to customer switching'.[71]

As indicated in section 4, meter ownership is related to the issue of responsibility for metering services. Therefore, if the related metering services arrangements are changed, then it is most likely that meter ownership arrangements also need to be varied.

Whilst the Responsible Person is responsible for providing a meter under the Code, legislation and supporting regulations in each of the jurisdictions generally do not place any restrictions on which party may own a meter[72], however customers generally do not own meters. Under the current regulatory framework, the party responsible for providing a meter does not necessarily have to own the meter although historically, distributors have included meters in their regulatory asset base and have therefore recovered the costs of these meters through their charges. However, there is no reason why the Responsible Person could not be responsible for providing meters that are owned by another party.

If a party, other than the distributor, owns the meters for small customers, then this may create a barrier to those customers switching retailers. This barrier may arise as a result of:

- A meter, owned by a party other the distributor, being of a type that is not commonly used, and:
  - Can only be read by a limited number of Metering Providers, that may not be accessible to the new retailer;
  - Can or will only be tested by a limited number of Metering Providers, that may not be accessible to the new retailer; or
  - Does not provide metering data in a form that is compatible with the new retailer's tariff;
- The potential for meter churn and stranded costs;
- The potential for increased metering costs;
- The potential barrier to entry to retailers that do not have the skills to take responsibility for meter ownership, resulting in reduced choice of retailers and subsequently offers for consumers; and
- The potential for anti-competitive retailer behaviour.

[71] National Electricity Code, clause 7.13(g)(1)(i)

[72] Except in Victoria and Queensland where customers cannot own their meters.

5.1 Draft recommendation

There was no evidence presented to the Jurisdictional Regulators to indicate that meter ownership is acting as a barrier to customers switching retailers. However, the recommendation on meter ownership needs to be consistent with the recommendation on metering services. If the metering services are provided exclusively by the distributor, this infers a distribution-driven meter ownership model. If the metering services are provided on a competitive basis, this infers that a range of parties may own the meters, that is, a market-driven meter ownership model.

Consistent with the draft recommendation on metering services, the Jurisdictional Regulators sought consistent meter ownership models for large and small customers, whether first or second tier. In the Draft Report, the Jurisdictional Regulators recommended:

- For 'large' customers, extend the current arrangements for second tier customers to 'large' first tier customers; and
- For 'small' customers:
  - Distributors should retain ownership of meters for all 'small' first tier customers and second tier customers with metering installation types 5 and 6;
  - Distributors must not unreasonably withhold consent where a customer or retailer has requested a non-standard meter; and
  - Charges for meter provision should be unbundled from DUoS charges.

5.2 Market-driven meter ownership model

AGLV, Centurion, Elster Metering and EnergyAustralia support the draft recommendation to extend contestable meter ownership to large first tier customers. Ergon Retail also supports this draft recommendation, but seeks clarification from the Jurisdictional Regulators that this recommendation does not apply to large first tier customers who have not moved to market based retail contracts and are consequently subject to regulated retail tariffs. The Jurisdictional Regulators have amended the recommendation so that there is more flexibility for a jurisdiction to determine when competitive metering arrangements and thereby market-driven meter ownership models will be available for first tier customers. This flexibility, if applied, should address Ergon Retail's concern.

Powercor and CitiPower note that it will also be necessary to address ownership of associated equipment, such as CTs (current transformers) and VTs (voltage transformers). CTs and VTs are considered by the Jurisdictional Regulators to be connection assets rather than metering assets and should be treated in the same way as other connection assets.

United Energy believes that the draft recommendation which allows jurisdictions to determine the meter ownership arrangements to apply to large first tier customers in the short term, may lead to arrangements that are not equitable between large first and second tier

customers. United Energy believes it may be more prudent to make a clear decision and allow a transition path. Whilst the Jurisdictional Regulators recognise that interim arrangements may not be equitable between large first and second tier customers, they also recognise that the timing of any changes in meter ownership will need to be consistent with the timing of each jurisdiction's price determination and be cognisant of any jurisdictional policy decisions which may impact the timing.

5.3 Distributor-driven meter ownership model

The distributors[73] generally, as well as PIAC, support the draft recommendation that distributors should determine the ownership of meters for all 'small' first tier customers and second tier customers with metering installation types 5 and 6.

AGLV, Centurion, Elster Metering and Powerdirect were strongly opposed to this draft recommendation, and generally believed that meter ownership should be open to any party. Specifically, Powerdirect believes that opening meter ownership to competition would promote the adoption of economically efficient metering solutions and provide the most commercial flexibility on the structure of the market arrangements for customers. It does not believe the cost and convenience arguments to be relevant or correct. AGL believes that removing customer choice in metering in perpetuity is inconsistent with the Code's intent and believes that competition will ultimately ensure the lowest cost outcomes.

The Jurisdictional Regulators continue to be of the view that market-driven meter ownership models are appropriate for customers with competitive metering arrangements. The Jurisdictional Regulators' final recommendation for metering services extends competition beyond that proposed in the Draft Report. Accordingly, a market-driven meter ownership is considered to be appropriate for all small customers with metering installations that meet the requirements of a type 1 to 4 metering installation, in addition to large first and second tier customers.

It is proposed that distributors will continue to be exclusively responsible for metering for small customers with manually read meters. A distributor-driven meter ownership model is considered to be more appropriate for these customers with non-competitive metering services. A distributor-driven meter ownership model is proposed rather than distributor-ownership to recognise that the distributor may adopt alternative ownership models, for example, leasing of meters.

5.4 Obligation to provide non-standard meters

Country Energy believes that distributor ownership is not a barrier to customer choice in metering technologies, as customers are not restricted to the distributor's standard meter:

[73] See, for example, the submissions to the Draft Report by Australian Inland, Country Energy, EnergyAustralia, Ergon Retail, Integral Energy, Powercor, CitiPower, TXU and United Energy.

> *While distributors may have standard meters for each type of meter technology, to gain efficiency in maintenance and support arrangements with manufacturers, distributors also have access to a wide range of metering technology that would ensure all customers' needs could be met.*

Similarly, United Energy believes the distributors' standard offerings should provide a range of functional meter offerings utilising the distributors' preferred suppliers.

Other distributors expressed concerns about this aspect of the draft recommendation:

- Australian Inland believes this should not be imposed, particularly for prepayment metering technology and/or where access to the meter could be expensive or time consuming;
- Powercor and CitiPower noted that such alternative metering is likely to incur higher costs which will need to be reflected in metering charges;
- EnergyAustralia believes the recommendation needs to clarify what constitutes reasonableness, and suggests reasonableness guidelines be developed that reference jurisdictional and distributor installation rules and industry based metering standards;
- EnergyAustralia argues that a fragmented customer approach may undermine the ability to introduce specific technologies, such as automated meter reading and power line carrier, which require economies of scale to be successfully implemented; and
- United Energy believes this obligation should not extend to one-off metering requests, as the distributor is ultimately responsible for technical and regulatory compliance.

AGLV and Origin Energy argued that this recommendation was not a substitute for contestability. AGL believes that this recommendation would place all the risks on the distributor, whereas the risks would be shared between the customer and supplier in an open market environment. Origin Energy believes it fails to impose a commercial impact on distributors.

By opening up competition in metering services the obligation for the distributor to provide non-standard meters is limited mainly only to manually read meters. It is recognised that higher costs are likely to be incurred where non-standard metering is installed and customers would need to accept the distributor's costs for such non-standard metering.

5.5 Unbundling of meter provision charges from DUoS charges

The unbundling of meter provision charges from DUoS charges has been discussed previously in section 4.5. No changes to this specific recommendation are proposed by the Jurisdictional Regulators.

5.6 Final recommendation

The Jurisdictional Regulators are of the view that meter ownership is not acting as a barrier to customers switching retailer. However, recognising that the recommendation on meter ownership should have regard to the amendments to the recommendations on metering services arrangements, the Jurisdictional Regulators recommend that:

5.1 Recognising that meter ownership should have regard to the metering services arrangements, and the recommendations that have been made in relation to metering services, the Jurisdictional Regulators recommend consistent meter ownership models should apply across first and second tier customers.

5.2 *(Market-driven meter ownership model)* In the longer term market-driven meter ownership models are considered to be appropriate for all customers with competitive metering services.

(a) Existing meter ownership arrangements should be retained for second tier customers with competitive metering services currently; and

(b) In the shorter term, each jurisdiction should consider the most practicable option for making available competitive metering services, that is, transitioning from distributor ownership of meters to a market driven meter ownership model.

5.3 (*Distributor-driven meter ownership model*)

(a) Distributor-driven meter ownership models are considered to be appropriate for all customers with non-competitive metering services; and

(b) An obligation should be imposed on the distributor to not unreasonably withhold consent where a retailer or a customer has requested a meter other than the standard meter to be installed.

5.4 *(Unbundling of meter provision charges)* Charges for meter provision[74] should be unbundled from DUoS charges.

[74] Meter provision includes the provision, installation and maintenance of the meter

6 Distribution and retail tariffs

A possible legal and regulatory barrier to the adoption of economically efficient metering solutions and other technology is the flexibility available to distributors to vary the structure of distribution tariffs, and for retailers to vary the retail tariffs for first tier customers, to make them more efficient.

Whilst an appropriate metering technology can enable more cost reflective tariffs, the benefits of these more cost reflective prices can only be fully realised where there are both efficient distribution and retail tariffs.

The distribution tariffs are regulated by the Jurisdictional Regulators. In the first instance, more cost reflective distribution tariffs can assist in achieving efficiencies in the network, and these tariffs need to be reflected in the retail tariffs faced by customers. Where there are restrictions placed on the ability for distributors to develop more cost reflective tariffs, and the ability of those tariffs to be reflected in retail tariffs, the potential benefits of adopting an efficient metering solution or other technology will be diminished.

The same flexibility required in the setting of distribution tariffs is also required in the setting of retail tariffs for first tier customers. The ability to capture allocative efficiencies will, however, be reduced significantly if there are restrictions on retailers in the setting of first tier retail tariffs, because the majority of small customers are still first tier. Additionally, constraints on the setting of first tier retail tariffs will effectively place constraints on second tier retail tariffs.

6.1 Draft recommendation

It is recognised by the Jurisdictional Regulators, the Parer report and in the submissions to the Issues Paper and Draft Report[75] that the constraints currently on distribution and retail tariffs may be a barrier to the adoption of economically efficient metering solutions and other technology. They do not allow potential allocative efficiency gains, which are possible with economically efficient metering solutions and other technology, to be captured.

The Parer report regarded the removal of price caps 'as inevitable'[76] and recommended that the price caps be removed 'as soon as practicable, but in any event within the next three years'[77]. In response, the Ministerial Council on Energy (MCE)[78] in its Communiqué of 1 August 2003 stated that:

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[75] See, for example, the submissions to the Draft Report by AGLV, Australian Inland, Centurion, Country Energy, EnergyAustralia, Powercor and CitiPower, TXU and United Energy

[76] Council of Australian Governments, Energy Market Review, *ibid*, p.182

[77] Council of Australian Governments, Energy Market Review, *ibid*, p.183

[78] The Ministerial Council on Energy is comprised of the relevant Ministers for the Commonwealth and all States and Territories.

> *To enhance the participation of energy users in the markets, including through demand side management and the further introduction of retail competition, and increase the value of energy services to households and business, the MCE recommends ... [that] in all jurisdictions where full retail competition is operating, each jurisdiction align their retail price caps with costs, and periodically review the need for price caps.*

The constraints on distribution tariffs are set as part of the Distribution Price Reviews which are undertaken by the Jurisdictional Regulators on a four or five year basis. Distribution Price determinations are scheduled in each of the jurisdictions, except Tasmania, during 2004 and 2005. In their determinations, the Jurisdictional Regulators currently recognise the balance that is required between the political sensitivity of potential price shocks for small customers and the need to provide efficient price signals. To the extent possible, constraints are set which permit tariffs to be rebalanced, with the rebalancing occurring over a period of time.

In the Draft Report, the Jurisdictional Regulators recommended that, in order to promote the achievement of efficient outcomes, the jurisdictions should consider the balance required between the constraints on regulated distribution and retail tariffs to manage price movements and the need to realign tariffs over time to be more cost reflective.[79]

6.2 Comments from submissions

Centurion notes that the current restrictions have resulted in little price variation, with most retailers competing on branding initiatives and short-term incentives. Centurion believes that easing retail tariffs constraints would stimulate price competition necessitating the need for innovative metering.

In contrast, PIAC does not believe this Review should be concerned with retail tariffs, distribution revenues or the structure of tariffs. PIAC points out that:

> *prices are a separate issue from the meters used to measure consumption. Meters are used to derive a cost for consumption incurred by individual customers and make it possible to construct bills for payment. Of themselves, meters cannot create competition. Yet, the response of the Joint Review on this point reveals an attitude with approaches the fetishisation of competition.*

The ACA believes that changes in metering arrangements must be coupled to consumer protection. There should be no 'real-time' tariffing of consumers; there must be price smoothing. The Jurisdictional Regulators do not expect that the introduction of economically efficient metering solutions and other technology necessarily implies that there will be 'real-time' tariffs for consumers. With additional flexibility in tariffs, retailers would have the flexibility to package price-service offerings that are palatable for consumers.

[79] Jurisdictional Regulators, *ibid*, Draft Report, p.52

Powercor and CitiPower believe that, to promote efficiency, the report should be more forceful in proposing relaxation of the current constraints on distribution and retail tariffs. However, as acknowledged in the Parer report, the issue of price caps on retail tariffs, and by inference the constraints on network tariffs, is a politically sensitive issue[80]. The Jurisdictional Regulators are therefore not necessarily in a position to be able to reduce this barrier as an outcome of this Review.

The MCE's User Participation Working Group Discussion Paper[81] proposes a way forward to relax the constraints on first tier retail tariffs. It proposes:

- The development of overarching pricing principles 'to provide a consistent basis for retail price regulatory decisions and to remove barriers to the cost-effective and contestable operation of retailers in multiple FRC jurisdictions';
- The development of a consistent pricing methodology 'to inform the process for review of pricing and to enable appropriate decision making on cost components for regulated franchise tariffs';
- The establishment of a framework for the review of price regulation 'to guide decisions on the assessment of regulated pricing'; and
- The provision of consumer information to enable consumers 'to easily compare the market offers of competing electricity retailers'.

Centurion does not support unregulated distribution tariffs, as there is no possibility of competition for distribution services within a distributor's geographic area. The Jurisdictional Regulators do not intend for distribution network revenues to be unregulated, as suggested by Centurion. There is, however, scope for more cost reflective network tariffs to be developed within the boundaries of the regulated revenue (or price cap).

EnergyAustralia and TXU believe it is critical that tariff issues be resolved prior to any mandated rollout of efficient metering solutions. Specifically, TXU is of the view that:

> *any mass roll out undertaken without resolving the Retail pricing issues would fail the high level criteria set out in this Draft Report because economic efficiency through productive, allocative, dynamic efficiency will not be achieved if businesses are unable to expose customers to the true cost of their behaviour.*

EnergyAustralia believes that, where the cost-benefit case has been made, innovative tariffs such as time-of-use pricing should be applied by default to franchise customers.

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[80] Council of Australian Governments, Energy Market Review, *ibid*, p.182

[81] Ministerial Council on Energy Standing Committee of Officials, User Participation Working Group, *Improving User Participation in the Australian Energy Market: Discussion Paper,* March 2004, pp.20-21

6.3 Final recommendation

The Jurisdictional Regulators note that meters are a means by which competition may be facilitated, as the metering technology can provide detailed load information on which retailers can base innovative price and service offering. The consideration of the structure of network and retail tariffs is therefore an integral component of any review of barriers to the adoption of economically efficient metering solutions and other technologies.

The setting of distribution and first tier retail tariffs will continue to be a politically sensitive issue for the jurisdictions. However, the Jurisdictional Regulators are of the view that a number of benefits may be captured in the absence of full flexibility in setting retail and distribution tariffs, and recognise the need to transition to more cost effective tariffs over the longer term.

Whilst the Jurisdictional Regulators will continue to be responsible for setting the framework for distribution pricing and the government more generally for first tier retail tariffs, these decisions may be influenced by the recommendations made by the Ministerial Council on Energy.

6.1 Evidence was presented to the Jurisdictional Regulators that constraints on regulated distribution and retail tariffs do not provide an incentive for the adoption of economically efficient metering solutions and other economically efficient technology. To promote the achievement of efficient outcomes, the jurisdictions should consider the balance required between the constraints on regulated distribution and retail tariffs to manage price movements and the need to realign tariffs over time to be more cost reflective.

7 Other legal and regulatory issues

Other possible legal and regulatory barriers to the adoption of economically efficient metering solutions and other technology that were identified in the Issues Paper were:

- The 'non reversion' policies that are applicable to interval meters; and
- Technical metrology issues:
  - Storage of metering data;
  - Access to metering data; and
  - Enforcement of unique Australian metering standards.

7.1 Non reversion policies

The 'non reversion' policies currently in the jurisdictional Metrology Procedures, in the context of a market-based approach to the installation of interval meters, are:

- Interval meters cannot be replaced by accumulation meters[82]; and
- Interval meters must be read as interval meters[83].

Whilst all jurisdictions do not allow interval meters to be replaced by accumulation meters, NSW does not require interval meters to be read as interval meters.

The 'non reversion' policies were originally implemented to ensure the efficient use of interval meters installed, whilst recognising that the costs of collecting and processing data from interval meters are higher than for other meters. In jurisdictions where interval meters are required to be read as interval meters, it has been hypothesised that the higher costs incurred may reduce the rate at which the distributor installs interval meters. However it is unclear as to whether this is a function of the 'non reversion' policy or other factors.

7.1.1 Draft recommendation

Submissions to the Draft Report generally supported the requirement to not replace an interval meter with an accumulation meter.

The policy, which requires an interval meter to be read as an interval meter, is more controversial. Many of the submissions to the Issues Paper were of the view that there would be a greater penetration of interval meters if they could be read as accumulation

[82] Applies in the ACT (second tier only), New South Wales, South Australia and Victoria.

[83] Applies in the ACT (second tier only), South Australia (after 1 January once an interval meter is initially read as an interval meter) and Victoria.

meters, due to the additional costs associated with reading them as interval meters[84]. Allowing interval meters to be read as accumulation meters may result in more distributors routinely installing interval meters for those residential customers with an offpeak load, as they did prior to the introduction of this non reversion policy. However it could be argued that if the costs recovered by the distributor for reading interval meters as interval meters was fair and reasonable, then this should not be a barrier to installing interval meters.

The Jurisdictional Regulators recognise that many of the businesses may not be well placed to read interval meters as interval meters. Accordingly, there is considerable inertia to be overcome for their practices to change. Interestingly, EnergyAustralia is well placed to read interval meters and is electing to install them for customers consuming more than 15 MWh per annum. In its submission to the Issues Paper, it supports reading these meters as interval meters so that the price signals for these customers may be more efficient, and it can receive the benefit from installing the interval meter, regardless of the retailer.

Therefore in the Draft Report there was considered to be merit in only requiring interval meters installed for certain customers to be read as interval meters, with the balance read as accumulation meters. If only interval meters installed for customers that contribute to the maximum demand[85] are read as interval meters, the benefits are that:

- Those customers that contribute to maximising demand management and/or demand response impacts may receive efficient price signals leading to a more efficient outcome;
- From a practical perspective, the number of meters that would be required to be read as interval meters would be small relative to the scenario where all interval meters must be read as interval meters, thus reducing the costs incurred for meter reading and data processing;
- The profile would be improved by netting off the interval data for these customers, and would thus be more representative of the smaller customers and be more equitable; and
- It may facilitate the standard installation of interval meters for smaller customers, particularly for those with a separately metered offpeak load, if the interval meter could be read as an accumulation meter.

It is noted, however, that the efficiencies will not be gained by only reading these meters as accumulation meters.

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[84] If interval meters are read as accumulation meters it is not possible to capture the allocative efficiencies. However, there are occasions where a customer who has elected an interval meter has moved out, and the incoming customer has a very different consumption level and load profile where an interval meter may not be justified.

[85] That is, those customers that have, for example, an air conditioning load, and are able to change their consumption pattern. By inference, this may be defined by the jurisdiction as those consuming more than 10, 15 or 20 MWh per annum.

The Jurisdictional Regulators acknowledge that setting a specific threshold (whether on a jurisdictional or national basis) at this time would provide greater certainty for market participants. However, the Jurisdictional Regulators anticipate that this matter will be considered further in the context of developing a national Metrology Procedure and assessment of the costs and benefits of rolling out interval meters in each jurisdiction.

While there may be merit in setting a national threshold, the Jurisdictional Regulators do not consider this critical.

Over time, the businesses may develop the required infrastructure to read a larger number of interval meters. They would then be better placed to read all interval meters as interval meters. This will depend on the changes in technology over the period, the penetration of interval meters and the certainty that the business may have of recovering any additional costs associated with reading interval meters.

In the Draft Report, the Jurisdictional Regulators recommended that:

- Once installed, interval meters should not be replaced by an accumulation meter, unless specific jurisdictional exceptions are provided for;
- Above a threshold established by the jurisdiction, an interval meter must be read as an interval meter. Below this threshold, it may be read as an accumulation meter; and
- Each jurisdiction be responsible for establishing the threshold to apply in their jurisdiction.

7.1.2 Not replacing interval meters with accumulation meters

Australian Inland, Centurion, Elster Metering, Email Metering, EnergyAustralia, TXU and United Energy support the recommendation that once installed, interval meters should not be replaced with accumulation meters. Ergon Retail also supports this recommendation, but only for jurisdictions where full retail competition has been implemented.

AGLV and Origin Energy both oppose the recommendation on the basis that customers should be free to determine the choice of meter. AGLV believes this recommendation is inconsistent with the Code's intent that economic efficiency will be achieved by allowing customers to make choices, and suggests that instead distributors and retailers be given sufficient flexibility to set tariffs that reflect the true cost of the metering installation.

If an accumulation meter replaces an interval meter, all customers will incur the additional costs associated with installing a new meter to replace an existing working meter. The decision was therefore originally made to not allow interval meters to be replaced by accumulation meters to act as a barrier to such inefficient practices.

Therefore, unless specific exceptions are provided for in a jurisdiction's metrology policy, this approach is recommended. Such jurisdictional exceptions may allow, for example, a

prepayment meter to be replaced by an accumulation meter or an interval meter to be replaced by a prepayment meter (which does not collect interval metering data).

7.1.3 Requirement to read an interval meter as an interval meter

ACA, Australian Inland, Elster Metering, Email Metering, PIAC, Powercor, CitiPower and TXU support the recommendation that interval meters may be read as accumulation meters below a given threshold of consumption.

EnergyAustralia supports this aspect of the recommendation, but sees a need for greater jurisdictional 'granularity' in setting the thresholds and for more certainty for distributors to ensure cost recovery. The Jurisdictional Regulators expect that the thresholds may be more granular based on the specific market-based decisions made by parties within their jurisdiction. A Jurisdictional Regulator could, in consultation with the distributors, set thresholds that are specific to each distributor. It is considered appropriate for this threshold as a jurisdictional policy decision, to be specified in the Metrology Procedure. The recommendation has been amended accordingly.

PIAC is critical of the draft recommendation to allow Jurisdictional Regulators to set thresholds for each jurisdiction. It suggests it is difficult to understand why a threshold chosen in one jurisdiction cannot be appropriate in the others. The Jurisdictional Regulators recognise that the cost-benefit analysis for reading interval meters as interval meters will vary by jurisdiction based on the maturity of the market, the load shape and jurisdictional policy decisions. Accordingly it is not considered to be appropriate to have a single national threshold at this stage.

Centurion, EnergyAustralia, Ergon Retail and United Energy believe that all interval meters should be read as interval meters, that is, there should be no threshold. The Jurisdictional Regulators are of the view that the wording of the recommendation is sufficiently flexible that where it is practical to do so, all interval meters will be required to be read as interval meters, but where it is not practical to do so, there will be a threshold. It would be expected that some distributors would seek a threshold of zero in their areas to support their roll out policy.

AGLV, Origin Energy and Integral Energy believe that customers should be free to determine the manner in which their meters are read. Where interval meters are installed on the basis of either a market-based roll out or a mandated roll out, the benefits of doing so may be undermined in the absence of such a non-reversion policy. Such a policy may therefore be required in association with any roll out. The recommendation incorporates sufficient flexibility that it does not need to be enabled if there is no roll out.

7.1.4 Final recommendation

The jurisdictional non reversion policies need to be consistent with the jurisdiction's approach to interval metering and the recovery of metering costs. On that basis, the Jurisdictional Regulators recommend:

7.1 Once installed, interval meters should not be replaced with accumulation meters unless specific jurisdictional exceptions are provided for.

7.2 Above a threshold established by the jurisdiction and specified in the Metrology Procedure, an interval meter must be read as an interval meter[86].

7.3 Below the threshold established by the jurisdiction and specified in the Metrology Procedure, an interval meter may be read as an accumulation meter.

7.4 Each jurisdiction should establish the threshold referred to above, and should review it from time to time based on the development of the market in that jurisdiction.

7.2 Technical metrology issues

The technical metrology issues that were identified in the Issues Paper as potential barriers to the adoption of economically efficient metering solutions and other technology are:

- The period over which metering data is stored. The costs associated with reading interval meters may be increased if the data from these meters is required to be stored for a longer period than required;
- The provision of access to metering data. The costs associated with reading interval meters may be increased if the data is required to be provided to a range of parties that do not necessarily require the disaggregated data; and
- The enforcement of unique Australian metering standards, which may inhibit the sales of meters available globally, in Australia.

7.2.1 Draft recommendation

The development of a single national Metrology Procedure, incorporating first and second tier metering, provides an opportunity for obligations associated with the processing, storage and transfer of metering data to be assessed prior to inclusion in the Metrology Procedure to ensure that:

[86] Noting that a retailer may request metering data to be forwarded to it in an aggregated form to match its requirements for customer billing

- The obligations on first tier and second tier metering data are consistent;
- The obligations, particularly for the storage of metering data and access to metering data, are not inefficient resulting in higher costs than would otherwise occur; and
- The obligations meet the needs of the businesses without imposing undue costs on consumers.

NEMMCO, as the body responsible for a single national Metrology Procedure, is well placed to conduct such a review.

Submissions from Integral Energy and NEMMCO indicated that the industry, through Standards Australia, is currently addressing the issue of unique Australian standards and the relationship between the Australian Standards and the National Measurements Act. NEMMCO, as the body responsible for a single national Metrology Procedure for first and second tier metering, and as a member of Standards Australia is well placed to continue to monitor the developments with the Australian metering standards. If NEMMCO is required to consult with the Jurisdictional Regulators on any changes proposed to the Australian Standards that may introduce a barrier to the adoption of economically efficient metering solutions and other technology, then the Jurisdictional Regulators will be able to take any action required to ensure that such a barrier is not introduced.

In the Draft Report, the Jurisdictional Regulators therefore recommended that:

- NEMMCO, when developing a single national Metrology Procedure, should consider the requirements for the storage of metering data and access to metering data; and
- NEMMCO should monitor developments in Australian metering standards and consult with jurisdictions and other interested stakeholders in relation to any proposed changes to the Australian metering standards that may introduce a barrier to the adoption of economically efficient metering solutions and other technology.

7.2.1.1 Storage of and access to metering data

Whilst Centurion and AGLV support any actions that will reduce the cost of metering and will foster customer choice, EnergyAustralia believes the current arrangements for data storage and access to metering data are satisfactory. It believes any decisions relating to Meter Data Providers should remain with the Responsible Person and that NEMMCO should not be able to unilaterally determine data storage and access requirements. In drafting the recommendation, the Jurisdictional Regulators did not intend for NEMMCO to make any 'unilateral' decisions on these matters. Rather, it is anticipated that the national Metrology Procedure will be developed in accordance with the Code consultation procedures and that businesses will be actively involved during this process.

Centurion recommends that NEMMCO be immediately constrained from providing second tier interval data to the Local Retailer. Clause 7.7(a) of the Code[87] requires that second tier metering data be provided to the Local Retailer. To not do so would be a breach of the Code. This requirement is expected to be reviewed when the single national Metrology Procedure is developed in accordance with this recommendation.

7.2.1.2 Technical metering standards

United Energy has reiterated its concern that Total Measurements Victoria and the National Measurements Act may act as a barrier to the adoption of economically efficient metering. This is particularly so with the need to re-certify meters once they are removed from a site which is an incentive to avoid unnecessary meter churn.

Additionally TXU notes that the takeover of Nilsen Technologies by Email Metering may make the adoption of international standards necessary in order to ensure sufficient competition in the Australian meter market.

United Energy believes that NEMMCO and industry are best placed to comment on the barriers these regulation create; however, changes to these requirements are a matter of policy and would be best managed by government. For this reason, the Jurisdictional Regulators when drafting the recommendation included a requirement for NEMMCO to consult with the Jurisdictional Regulators on any changes proposed to the Australian metering standards which may introduce a barrier to the adoption of economically efficient metering solutions and other technology. The Jurisdictional Regulators will then be able to take any action required to ensure that such a barrier is not introduced.

Elster Metering believes:

> *the enforcement of unique Australian metering standards has a diminishing potential to inhibit the sales of meters available globally as Australian Standards increasingly incorporate IEC requirements.*

Email Metering argues that the emergence of at least two interval meters from overseas suppliers proves that Australian meter standards are not a barrier to entry for foreign meter suppliers.

It is noted that the recommendation has been drafted such that if there are no changes to the Australian metering standards which may create a barrier to the adoption of economically efficient metering solutions and other technology, then no action is required.

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[87] Clause 7.7 of the Code states that 'the only persons entitled to have either direct or remote access to metering data from a metering installation, the metering database or the metering register in relation to a connection point are: (1) Code Participants whose NEMMCO account statement relates to energy flowing through that connection point …'.

7.2.2 Final recommendation

The Jurisdictional Regulators therefore do not recommend any change to the draft recommendation, that is:

7.5 NEMMCO, when developing the single national Metrology Procedure, should consider the requirements for:

(a) The storage of metering data; and

(b) Access to metering data; and

7.6 NEMMCO, as the body responsible for the single national Metrology Procedure, should monitor developments in the Australian metering standards having regard to the need to remove barriers to the adoption of economically efficient metering solutions and other economically efficient technology. NEMMCO should consult with the jurisdictions and other interested parties in relation to any changes proposed to be made to the Australian standards which may introduce a barrier to the adoption of economically efficient metering solutions and other economically efficient technology.

7.3 Other legal and regulatory barriers

The Issues Paper sought comment on any additional legal and regulatory issues that may be a barrier to the adoption of economically efficient metering solutions and other technology. In its submission TXU raised a concern about the metrology standards for type 5 metering installations. TXU believed that there are a number of aspects of interval meter metrology for type 5 meters that have been largely copied from the long established rules for type 1 – 4 metering installations. TXU was of the view that some of these are inappropriate for the mass number of relatively small consumption interval meters that will result from a roll out.

7.3.1 Draft recommendation

In the Draft Report, the Jurisdictional Regulators indicated that TXU has a valid concern in relation to provisions in the Code that have been specifically developed for metering installations types 1 – 4 and are not relevant to metering installations types 5, 6 and/or 7.

The need to amend the Code, so that it is more appropriate for metering installations types 5, 6 and 7, has been recognised for some time but has not been a priority. However, with the development of a single national Metrology Procedure, the opportunity exists for the provisions in the Code, that are not relevant to metering installation types 5, 6 and/or 7, to be reviewed.

The Jurisdictional Regulators included a recommendation in the Draft Report that NEMMCO, in conjunction with developing a single national Metrology Procedure, review the provisions in Chapter 7 of the Code to identify provisions that are not applicable to metering installation types 5, 6 and/or 7, and propose amendments to the Code accordingly.

7.3.2 Consideration by the Jurisdictional Regulators

Elster Metering, TXU and United Energy support this recommendation. However, United Energy is;

> *concerned that actions proposed as an outcome of any such review should not impose obligations on participants to unnecessarily alter or amend systems and processes. Where any change is considered necessary there must be a full and transparent assessment of the cost-benefit through industry consultation and agreement.*

The Jurisdictional Regulators acknowledge United Energy's concern that such a review may lead to increased costs. However, it is anticipated that any amendments would reduce (rather than increase) distributors' obligations and costs in relation to metering installation types 5, 6 and/or 7. Any amendments would be the subject of a Code consultation process. The Jurisdictional Regulators expect that all interested parties would participate in such a consultation process.

7.3.3 Additional legal and regulatory barrier

In its submission Centurion identified the meter provider accreditation requirements under the Code as a barrier to competition. It is of the view that the accreditation process is an 'expensive exercise', as well as being quite technical. Centurion recommends that the Code be amended requiring all third party service providers that actually perform metering installation, maintenance and repair work be accredited as Metering Providers.

The Jurisdictional Regulators are concerned that a reduction in the rigour of the accreditation process may undermine the integrity of the metering data and thereby settlement of the wholesale market. It is imperative that metering data is timely and accurate as it is the basis of large and risky financial transactions. It is of utmost importance that the accreditation process for Metering Providers be robust to provide the assurance to all parties that the metering data is accurate.

7.3.4 Final recommendation

Based on the submissions received to the Draft Report, the recommendation remains unchanged, that is:

7.7 The Jurisdictional Regulators recommend that NEMMCO, in conjunction with developing a single national Metrology Procedure, should review the provisions in Chapter 7 of the Code to:

(a) Identify provisions that are not applicable to metering installation types 5, 6 and/or 7; and

(b) Propose amendments to the Code accordingly.

8 Current metering arrangements

8.1 Current jurisdictional metering arrangements

The potential benefits of allocative efficiency via more cost reflective pricing have been recognised by a variety of policy makers and regulators, including the ACCC, IPART, ESCOSA and the ESC. When provided with more cost reflective price signals, customers are in a position to make appropriate decisions about their electricity consumption and decide whether to change, or to not change, their behaviour.

In practice, gaining the allocative efficiencies is predicated on the following assumptions:

- That retailers will offer more cost reflective tariffs to customers in a competitive retail market;
- That customers will choose more cost reflective offers made by retailers; and
- That customers will make informed decisions to either change their consumption pattern, or to pay the resultant more cost reflective tariffs.

Currently large customers that change retailers are required to have an interval meter installed. However smaller customers that change retailers may choose to install an interval meter or retain their basic (non-interval) meter, to which a profile is applied to obtain interval data for wholesale market settlement. Profiling is provided as an option for smaller customers as it provides the data necessary to perform wholesale settlement without requiring existing meters to be replaced with interval meters. Profiling therefore provides a potential opportunity to capture the productive efficiency improvements of competition (that is, some of the benefits), without imposing the costs associated with interval meters, and without the need to roll-out interval meters prior to FRC commencing.

8.2 Metering solutions and other technologies

The metering solutions and other technology options, which may lead to economically efficient outcomes, that were considered in the Issues Paper were:

Option 1 Accumulation meters with additional profiling algorithms, either being profiles prepared and applied over a smaller profile area or more profiles within the same profile area (e.g. Controlled Load Profile).

Option 2 Accumulation meters with improved profiling algorithms by, for example, requiring all customers above 160MWh per annum to install interval meters, and netting off these loads to prepare the profile (effectively netting off large customers that are not representative of other, smaller customers on the profile).

Option 3 Time-of-use meters with the existing profiling algorithms.

Option 4 Time-of-use meters with additional profiling algorithms, which apply only to those customers with time-of-use meters.

Option 5 Interval meters that are manually read.

Option 6 Interval meters that are remotely read.

Option 7 Interval meters with two way communication facilities.

Option 8 Static load control (e.g. time switches) to switch peak and offpeak loads. This could be implemented in conjunction with one of the other options.

Option 9 Dynamic load control (e.g. ripple control) to switch peak and offpeak loads. This could be implemented in conjunction with one of the other options.

Demand management and/or demand response options were not considered in detail. These options, which have previously been consulted on in a number of jurisdictions, supplement the metrology procedures and the Code, but do not impact directly on these instruments.

8.3 Deployment options

The options for deploying metering, or other technology, that were considered in the Issues Paper consisted of:

- 'Market-based' approaches, whereby the customer has the option to install an economically efficient solution. The benefits under 'market-based' approaches principally accrue to an individual. This approach is currently available; or
- Accelerated roll outs, whereby targeted groups of customers are required to have economically efficient metering solutions or other technology installed based on a timetable.

The costs of rolling out such metering solutions or other technology to all customers are likely to be substantial and it is to be determined if such a rollout is cost effective and hence efficient overall.

A number of options for deploying meters were identified and discussed in the Issues Paper. An option for deploying economically efficient metering solutions or other technology may be applied:

Option a To all customers

Option b Only to customers consuming above a determined consumption level, for example, more than the threshold for type 6 metering installations (100 MWh per annum in

NSW and 160 MWh per annum in the other jurisdictions)

Option c Only to specified groups of customers based on type of use, for example, to those with high peak loads

The options for deploying economically efficient metering solutions or other technology that have been identified, which can be applied under one of the above scenarios, are as follows:

Option 1 Continue with the existing 'market-based' approach

Option 2 Implement new profiling algorithms

Option 3 'Market-based' approach where all second tier customers are required to install interval meters

Option 4 Accelerated roll out to all customers over a shorter time frame, say 5 years

Option 5 Accelerated roll out to all customers over a longer time frame, say 10 years

Option 6 Accelerated roll out based on a 'new and replacement' policy, that is economically efficient metering solutions are installed for all new and replacement meters

If an accelerated approach to deploying meters is adopted, it would need to be based on a comprehensive cost benefit study that optimises the costs of the roll out relative to the benefits associated with that roll out.

8.4 Draft recommendation

There was general support for a cost-benefit analysis to be undertaken before any rollout of interval meters proceeds. Some submissions suggested that interval meters are likely to be an economically efficient metering solution in specific circumstances. In those situations a key consideration for the Jurisdictional Regulators is whether regulatory intervention (a mandated approach) is justified to promote a greater penetration of interval meters.

Any decision to proceed with a mandated approach would need to be based on a detailed cost benefit analysis to ensure that there is a net benefit expected from any regulatory intervention. It would appear prudent for each of the jurisdictions to undertake a detailed cost benefit analysis of an accelerated roll out of interval meters, consistent with the 1 August 2003 Communiqué from the Ministerial Council on Energy. The assessment framework in section 2 was recommended in the Draft Report as the basis for this cost-benefit analysis.

Whilst there is concern about the merits of a mandated roll out of interval meters to all customers, particularly small customers who do not have air conditioning, an accelerated roll out to relevant groups of customers is likely to have associated net benefits. A rollout of interval meters to specific groups of customers would reduce the number of interval meters to be installed. This in turn mitigates a number of the risks that have been identified, particularly the logistics associated with manufacturing and installing the meters, the stranded asset risk, and the costs of developing systems to collect and process metering data from a large number of interval meters. It would also enable the technology to be proved on a larger scale than currently, would enable firmer costs for installing interval meters to be obtained and would effectively provide a pilot of the benefits that can be captured by interval meters.

A high proportion of the benefits of interval meters are likely to be obtained by targeting:

- **'Large' first tier customers.** There are a relatively small number of large first tier customers with accumulation meters in each jurisdiction, but the consumption by these customers is significant. In previous sections of the report, recommendations have been made so that the metering services arrangements and meter ownership models are equitable for all large customers, whether first and second tier. A requirement for these customers to have interval meters installed will also ensure that there are equitable metering arrangements for these customers. Furthermore, the metering data from these customers can then be netted from the profile so that the profile is more cost reflective of the customers remaining.
- **Small customers that have high peak loads and therefore have the potential to maximise the demand management and/or demand response impact.** A consumption limit is a more practical threshold to use. This threshold may be 15 MWh per annum, consistent with EnergyAustralia's approach (see below), or a similar threshold. The number of meters would be a small proportion of the total meter population with the objective to optimise the benefits relative to the costs. The metering data from these customers can also be netted from the profile resulting in a profile that is more cost reflective of the customers below this threshold.
- **New and replacement meters.** Assuming that the non reversion policy is amended so that only interval meters installed for customers above the threshold for a mandated roll out (say 15 MWh per annum) are required to be read as an interval meter initially, then the only additional costs incurred by this option are the incremental costs of the meter and installation. As the costs associated with collecting and processing interval metering data decrease in subsequent years, then interval metering data may be collected in the future. This would reduce the stranded asset risk in future years.

  In those jurisdictions where prepayment metering has been installed with an infrastructure that does not support prepayment interval metering, prepayment meters may need to be excluded from the new and replacement policy until the infrastructure does support prepayment interval meters.

The penetration of interval meters may increase in parallel with a market-based approach with the removal of other barriers to the adoption of economically efficient metering solutions and other technology.

The Code specifically directs the Review to consider sunsetting of profiling as an example of the way in which barriers to the adoption of economically efficient metering solutions and other technology may be reduced[88]. However, the Jurisdictional Regulators noted that an assessment of the costs and benefits of rolling out interval meters has not been undertaken for all jurisdictions and therefore the sunsetting of profiling is not recommended at this stage.

Clause 7.3.4(e) of the Code states that:

> *The Metrology Coordinator must advise NEMMCO by no later than 30 April each year of how much longer the Metrology Coordinator proposes to continue allowing its metrology procedure(s) to contain type 6 metering installation(s) within its jurisdiction.*

Type 6 metering installations will continue to be used in the NEM for the foreseeable future. The Jurisdictional Regulators do not see any value in reporting this fact to NEMMCO on an annual basis. It was therefore recommended in the Draft Report that this clause be deleted.

8.5 Cost benefit assessment of interval meter roll out

The submissions[89] generally supported the draft recommendation for the jurisdictions to undertake an assessment of the costs and benefits of rolling out interval meters prior to any such roll out.

EnergyAustralia, Ergon Retail and Email Metering suggest that the Jurisdictional Regulators also set a timeframe for such a review to be completed. However, this Review is not considered to be the appropriate forum for specifying such a date; the MCE is a more appropriate forum.

EnergyAustralia provided details of its market-based approach to installing interval meters. It is currently installing interval meters for customers consuming above 15 MWh per annum over a 5 year period. The decision to do so was based on internal modelling which demonstrated that 'time-of-use pricing will bring sufficient capital deferral to justify the investment cost of type 5 meters'[90].

[88] National Electricity Code, clause 7.13(g)(1)(ii)

[89] See, for example, the submissions to the Draft Report by ACA, Powercor, CitiPower, EnergyAustralia, Ergon Retail, Origin Energy, PIAC, TXU, Email Metering and United Energy.

[90] Energy Australia submission to the Issues Paper, p.3.

The MCE's Discussion Paper[91] does not identify a timeframe at this stage. Its proposed policy direction is to:

- Review the effectiveness of existing interval meters;
- Undertake a study on the roll out of interval meters for particular customer classes;
- Undertake an assessment of low cost remote load control technology; and
- Continue the status quo for load profiling.

It is noted that these policy directions are broadly consistent with the Jurisdictional Regulator's draft recommendations.

Origin Energy believes the analysis of the costs and benefits should be conducted on a national basis and therefore proposes that the Australian Energy Regulator, once established, would be in the best position to conduct the analysis. At this stage the role and timing of the formation of the Australian Energy Regulator is uncertain. If the Australian Energy Regulator replaces the role of the jurisdictions prior to the completion of the assessment by each of the jurisdictions, then the assessment could be undertaken on a national basis.

The ACA believes that the electricity network system should be designed to meet the needs of the customers, rather than forcing the customers to change demand to meet the constraints of the system:

> *The intolerance of peaks or 'peak aversion' can be seen as a form of mental accounting, where the efforts of the human mind are at odds with the way the world really works ... The way to efficiently and effectively meet a peak demand is to create sufficient capacity to service it. Peaks exist because that is the way humans behave in certain circumstances, and markets exist to serve consumers, not consumers to service markets.*

The Jurisdictional Regulators note that an outcome of the assessment of the costs and benefits of interval meters does not necessarily imply 'peak aversion'. However it does imply that consumers may face more cost reflective pricing for consuming during the peak rather than a smearing of the costs, and that consumers will then have a valid choice as to whether they will consume electricity during the peak times. If all consumers continue to choose to consume electricity during peak times then the network will be designed to meet this choice.

8.5.1 Metering technologies

The views expressed in the submissions varied as to the appropriate metering technology to consider and largely reflected the submissions to the Draft Report.

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[91] Ministerial Council on Energy Standing Committee of Officials, User Participation Working Group, *Improving User Participation in the Australian Energy Market: Discussion Paper,* March 2004, pp.15-16

Whilst several submissions support interval meters, AGLV supports improving the use of profiles. C&SS argues that the draft recommendations prevent the adoption of an integrated network metrology, communication and data management model (such as the Italian model). However the Jurisdictional Regulators note that the metering technology adopted in each jurisdiction would be dependent on the outcome of an assessment of the costs and benefits of interval metering in each jurisdiction. It is expected that the outcome will vary by jurisdiction due to differences in the load shapes, market conditions, and policy decisions. As an example, an assessment in one jurisdiction may indicate that the costs of interval meters exceed the benefits and therefore improved profiling should be supported, whereas an assessment in another jurisdiction may indicate that the benefits of interval meters exceed the costs.

The ACA argues that it is misleading to state that a specific metering solution will send a price signal to consumers. The ACA believes that providing price signals to consumers would have to be tempered with the cost impacts such an approach would entail. It is basic to consumer protection that a person should know costs before purchase. The Jurisdictional Regulators note that, in a competitive market, retailers would be unlikely to offer a tariff structure that passed through spot prices to consumers, as consumers would be unlikely to take up any such offers. The Jurisdictional Regulators anticipate that retail tariffs would still be based on smoothed charges to a large extent.

8.5.2 Deployment approaches

Whilst some submissions (Bayard, Email Metering, EnergyAustralia and Ergon Retail) supported a mandated roll out of interval meters across all customers, other submissions were opposed (AGLV, Elster Metering and Powerdirect). Ergon Retail and Australian Inland supported a new and replacement policy. Elster Metering and Powerdirect supported a market-based approach.

As indicated in the Draft Report, a mandated roll out of interval meters (or other economically efficient metering solution) would not occur until an assessment of the costs and benefits in that jurisdiction indicated that it was feasible. In the meantime, the penetration of interval meters may increase through a market-based approach with the removal of other barriers to the adoption of economically efficient metering solutions and other technology.

8.6 Assessment framework

Several submissions recommended amendments to the assessment framework for assessing the costs and benefits of rolling out interval meters:

- The ACA believes the assessment should not only address economic costs, but social impacts together with regulatory and market adequacy to control the change;

- C&SS believes the assessment should not focus on a consumer and cost the meter as a consumer asset, but rather as part of the industry infrastructure required for an economically efficient NEM incorporating a truly competitive wholesale and retail sector;
- EnergyAustralia recommends a full value chain cost analysis be the common economic frame of reference, while ensuring that economies in one segment do not come at the expense of another; while
- TXU believes the assessment framework should also consider the use of risk weightings, as costs are certain, while benefits are based on a number of assumptions that are uncertain.

EnergyAustralia and United Energy expressed concern that the assessment framework does not ensure that consistent and comparable analyses will be conducted across jurisdictions.

The Jurisdictional Regulator's consideration of the assessment framework has been discussed previously in section 2.

8.7 Deletion of clause 7.3.4(e) from the Code

Clause 7.3.4(e) of the Code states that:

> *The Metrology Coordinator must advise NEMMCO by no later than 30 April each year of how much longer the Metrology Coordinator proposes to continue allowing its metrology procedure(s) to contain type 6 metering installation(s) within its jurisdiction.*

United Energy believes that this clause forces a conscious decision on the regulator about the cost-benefit equation of technology options each year and acts as a prompt where assessments of interval meters by some jurisdictions have not yet been made. Removing this clause will thus remove the need for the decision and remove the prompt. United Energy also notes that, in a national regulatory environment, the Australian Energy Markets Commission may be able to take on this policy / rule making role and advise NEMMCO.

Type 6 metering installations will continue to be used in the NEM for the foreseeable future. The Jurisdictional Regulators therefore do not see any value in reporting this fact to NEMMCO on an annual basis and continue to be of the view that this clause should be deleted.

8.8 Final recommendation

Based on the submissions received to the Draft Report, the recommendation remains unchanged, that is:

8.1 The Jurisdictional Regulators are of the view that rolling out interval meters to all customers in a jurisdiction should not proceed before an assessment of the costs and benefits has been undertaken for that jurisdiction. Such an assessment has not yet been undertaken for all jurisdictions and therefore, the sunsetting of profiling is not recommended at this stage.

8.2 Additionally, clause 7.3.4(e) should be deleted from the Code. This clause states that:

'The Metrology Coordinator must advise NEMMCO by no later than 30 April each year of how much longer the Metrology Coordinator proposes to continue allowing its metrology procedure(s) to contain type 6 metering installation(s) within its jurisdiction'.

8.3 Any jurisdictional assessment of the costs and benefits of interval meters[92] should utilise the assessment framework as per recommendations 3.1 and 3.2.

8.4 Any assessment of the costs and benefits of interval meters should have particular regard to the roll out of interval meters to specific groups of customers, such as:

(a) All first tier customers with annual consumption greater than z MWh, where z is determined by the jurisdiction and specified in the Metrology Procedure; and

(b) Maximising the demand management and/or demand response impacts (for example, customers above a determined threshold).

8.5 Any assessment by the jurisdictions should consider whether a new and replacement policy is appropriate for those groups of customers not targeted above.

[92] The Jurisdictional Regulators recognise the Ministerial Council on Energy Communiqué dated 1 August 2003 that recommends the 'examination of options for a demand-side response pool in the NEM, and consideration of the costs and benefits of introducing interval metering. Outcomes to be considered in 2004.'

9 Ring-fencing

In its determination on the FRC Code changes, the ACCC expressed concern that:

> *joint distribution/retail businesses may misuse their position to deter other retailers from entering the market.*[93]

Accordingly, the ACCC added a further requirement to review the effectiveness of the current ring-fencing arrangements with respect to their ability to[94]:

> *(1) prevent anti-competitive conduct;*
>
> *(2) provide transparency; and*
>
> *(3) provide confidence in the integrity of the competitive metering arrangements between the Distribution Network Service Providers, Customers, and Metering Providers.*

The Jurisdictional Regulators decided to include part (3) of the requirement above as part of this joint Review.

Separation (ring-fencing) of monopoly elements of the market from competitive elements may be required to ensure that the power derived from a monopoly business does not lead to adverse outcomes in the competitive sectors. The effective operation of the market may require:

- Ring-fencing between the distributor and its related retailer; and
- Ring-fencing between the distributor's metering business that is provided as a prescribed service, the metering business that is provided as a non-prescribed service and the metering business that is provided as a contestable service.

Ring-fencing can take the form of:

- Legal separation;
- Accounting separation; and
- Operational separation.

In assessing ring-fencing requirements, there was regard to whether the arrangements ensure appropriate operational separation, ensure non-discriminatory access, and apply to a distributor's metering business.

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[93] ACCC, *ibid*, p.24

[94] National Electricity Code, clause 7.13(i)

The current ring-fencing arrangements vary by jurisdiction. The regulators in ACT, NSW, Queensland and South Australia have published ring-fencing guidelines requiring operational separation, however, there are transitional requirements in NSW and South Australia. Furthermore, the guidelines in NSW specifically refer to the ring-fencing of the distributor's services provided by Accredited Service Providers (ASPs), rather than ring-fencing in the broader context. The regulators in Tasmania and Victoria[95] have not published ring-fencing guidelines, but the Victorian distribution licences require non-discriminatory access to distribution services.

9.1 Draft recommendation

There is currently a multiplicity of ring-fencing arrangements.

Consistent with the Parer report's conclusions that there is a need for greater regulatory consistency[96], the Jurisdictional Regulators are of the view that this is an area where there is scope for a greater level of national consistency. Greater consistency would ease compliance with the ring-fencing requirements in different jurisdictions leading to greater levels of compliance, and would provide greater assurance that the ring-fencing arrangements in each jurisdiction are effective. This will be an important consideration if the distributors are to be exclusively responsible for metering services for small customers, and may facilitate more activity by retailers in multiple jurisdictions.

Through the process of achieving nationally consistent ring-fencing arrangements, there is the opportunity to identify and utilise the most effective aspects of the existing jurisdictional arrangements.

Submissions to the Issues Paper raised concerns in relation to the effectiveness of the ring-fencing between a distributor's metering business and its retail business, where a business remains vertically integrated. The Jurisdictional Regulators have various information gathering powers and compliance auditing requirements that may be utilised to follow up on specific issues that may be arising from non compliance with existing ring-fencing arrangements.

In the Draft Report, the Jurisdictional Regulators recommended that:

- The effectiveness of the ring-fencing of each distributor's metering business should be assessed by the relevant regulator periodically; and
- Consistent with the move towards national consistency, the regulators should develop nationally consistent ring-fencing guidelines, to the extent possible.

[95] The ESC released a draft ring-fencing guideline for consultation in March 2004

[96] Council of Australian Governments, Energy Market Review, *ibid*, p.84

9.2 Effectiveness of existing ring-fencing arrangements

Origin Energy and Powerdirect explicitly support the recommendation that the effectiveness of the existing ring-fencing arrangements be assessed periodically.

Centurion is of the view that joint distribution/retail businesses have an advantage over independent retailers. It believes no level of ring-fencing can address this advantage:

> *Only competition between service providers can provide independent retailers with greater price equity.*

An outcome of this Review is potentially increased competition in metering services, as discussed in section 4, thereby partially addressing Centurion's concern.

9.3 Nationally consistent ring-fencing guidelines

Powerdirect, EnergyAustralia, Ergon Retail, Origin Energy and United Energy provided some support for nationally consistent ring-fencing guidelines. However, there were divergent views on the appropriate model for such guidelines:

- EnergyAustralia supports IPART's distribution ring-fencing guidelines;
- Ergon Retail believes the ring-fencing arrangements that are in place in NSW, SA and Victoria should be made more robust; and
- United Energy believes that any move to national consistency should reflect the Victorian position, to avoid imposing unnecessary costs on Victorian customers.

TXU suggests this recommendation may lead to a duplication of effort, given that a single national regulator is scheduled to commence in 2006. Country Energy believes the costs of implementing nationally consistent ring-fencing guidelines would be significant, and a framework would need to be established to allow distributors to fully recover such costs. It believes this would create unnecessary inefficiencies to the delivery and pricing of metering services to customers, significantly outweighing any perceived benefits that may be gained.

Whilst the Jurisdictional Regulators have recommended the development of a nationally consistent ring-fencing guideline, a specific jurisdictional model has not been proposed. It is expected that the most appropriate model will be identified during the development of such a guideline. If the development of the nationally consistent ring-fencing guideline commences prior to the formation of the single national regulator, then it is expected that the single national regulator will subsume any work that has already been undertaken. An earlier commencement of this development will ensure a more timely completion of the nationally consistent ring-fencing guideline.

The costs associated with implementing a nationally consistent ring-fencing guideline would need to be considered during the development of the guideline. The costs would need to be

assessed in conjunction with an assessment of the benefits. The benefits would consider the extent to which competition is facilitated with additional ring-fencing requirements.

9.4 Final recommendation

Based on the submissions received to the Draft Report, the recommendation remains unchanged, that is, the Jurisdictional Regulators recommend that:

9.1 The effectiveness of the ring-fencing of each distributor's metering business should be assessed by the relevant regulator periodically.

9.2 Consistent with the move towards national consistency, the regulators should develop nationally consistent ring-fencing guidelines, to the extent possible.

10 Further review

Clause 7.13(g)(4) of the Code requires that, as part of this Review, the Jurisdictional Regulators are to:

> *specify a date for a further review to be conducted.*

The timing of a further review needs to allow sufficient time between reviews to implement many of the recommendations in this Review, to enable the outcomes to be reviewed. There are a number of recommendations that require a significant amount of time and effort to be implemented, such as:

- The extension of Chapter 7 of the Code to incorporate metrology for first tier customers;
- The development of a single national Metrology Procedure which allows for jurisdictional specific policies;
- To have NEMMCO responsible for the single national Metrology Procedure, and to lead this Code change process;
- To harmonise obligations currently in a variety of instruments;
- To have distributors responsible for ownership and metering services for all small first tier and second tier customers with metering installation types 5, 6 and 7;
- Ensuring retailers have choice of meters by enhancing the obligation on the distributor to supply meters that meet the diverse needs of retailers;
- In the longer term, allowing retailers to choose who shall be the Responsible Person for all large first tier and second tier customers and all customers with remotely read meters; and
- Continuing to assess in each jurisdiction, the mandatory rollout of interval meters to groups of customers, having particular regard to:
  - All 'large' first tier customers;
  - Maximising the demand management and/or demand response impacts (customers above a certain threshold, in the order of say 10, 15, 20 MWh pa); and
  - A new and replacement policy for other customers.

However the date for the review must not be too distant potentially resulting in a loss of momentum, particularly if there is a need to revisit the recommendations due to changes in the industry, changes in technology or other unforeseen changes.

As discussed in section 1.3, in forming the draft recommendations in this report, the Jurisdictional Regulators have been cognisant to:

- Maximise certainty as far as possible,

which may:

- Facilitate a market-based approach to the adoption of economically efficient metering solutions and other technology, to the maximum extent possible, in parallel with any proposed mandated approach.

Consistent with this approach, it is desirable that any further review should not diminish the regulatory certainty that has been provided as part of this Review. Accordingly, it is proposed that the review not revisit the principles established in this Review. Rather the further review should focus on identifying any additional barriers that have not been identified as part of this Review. It is noted that additional barriers may be identified once the barriers that have been identified in this Review have been reduced.

10.1 Draft recommendation

In the Draft Report, the Jurisdictional Regulators recommended that a further review be completed by 30 June 2008, and that this review would:

- Review the outcomes of the current Review;
- Identify any additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology; and
- Where additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology are identified, to make recommendations to reduce those barriers.

10.2 Consideration by the Jurisdictional Regulators

A number of submissions suggested alternative timeframes for the completion of the review:

- Centurion recommends the next review be completed by 30 June 2007;
- Country Energy notes that it is important that the next review take into account the timing of the expiry of ETEF arrangements on 30 June 2007, and the next round of electricity distribution price determinations, which in NSW, will be well and truly underway during the first half of 2008;
- EnergyAustralia recommends a date of March 2010 to ensure that stakeholders have sufficient experience upon which to draw, and that the outcomes of the next Metrology Review will be known prior to the next IPART price determination, allowing additional costs to be included in stakeholder submissions;
- United Energy believes 5 years may generate a level of complacency, and suggests it be completed within 1 – 2 years of implementation of the actions from this Review (expected to take 2 years); and
- Powerdirect suggests a review may not be necessary in less than a five year period, particularly if 'an incremental commercial model is created by appropriate changes to the existing metrology procedures'.

The Jurisdictional Regulators acknowledge that it would be difficult to set a timeframe for the next review that would meet the requirements of all stakeholders. However, the Jurisdictional Regulators believe that the timeframe proposed in the Draft Report achieves an appropriate balance between the need to allow sufficient time for outcomes to be fully implemented and tested, but not so long as to instil any complacency in market participants.

It is noted that completion by 30 June 2008 requires the review to commence approximately 12 months prior to that date. There will thereby be some certainty provided earlier than 30 June 2008.

Powercor and CitiPower support the draft recommendation but believe that the recommendations should also extend to any issues identified in reviewing outcomes from this Review. The Jurisdictional Regulators agree that the next review should also make recommendations to resolve any issues identified in the review of the outcomes of this Review. The recommendations have been amended accordingly.

United Energy supports the principle that further reviews should build on this Review. However, AGL strongly believes that any further review of metrology should be focused on identifying barriers to customer choice, not barriers to the adoption of economically efficient metering. In this Review barriers to the adoption of economically efficient metering have been identified, by identifying barriers to customer choice. Therefore the Jurisdictional Regulators do not propose to amend the scope of the next review. It is also noted that there are other broader mechanisms for identifying barriers to customer choice such as the reviews of the effectiveness of FRC which are undertaken in some jurisdictions.

10.3 Final recommendation

To address the concern raised by CitiPower and Powercor in its submission, the draft recommendation has been amended to specify that the further review make recommendations to resolve issues that have been identified as an outcome of this Review.

10.1 The Jurisdictional Regulators recommend that a further review be completed by 30 June 2008.

10.2 The Code should be amended to specify that the objectives of this further review should be:

(a) To review the outcomes from this Review and where issues are identified, to make recommendations to resolve those issues;

(b) To identify any additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology; and

(c) Where additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology are identified, to make recommendations to reduce those barriers.

10.3 In recognition that regulatory uncertainty is a major barrier to the adoption of economically efficient metering solutions and other economically efficient technology, the further review should have regard to the need to maintain the regulatory certainty provided as an outcome of this Review.

11 Implementation of the recommendations from this Review

The objectives of this Review are to[97]:

- Reduce any barriers to the adoption of economically efficient metering solutions or other technology;
- Consider options for a nationally consistent Metrology Procedure for each of metering installation types 5, 6 and 7; and
- Specify a date for a further review to be conducted.

A number of recommendations have been developed in this report to ensure that these objectives are achieved.

The Code further states that one of the objectives of this Review is to 'propose to NECA any changes to the Code that are necessary to implement the recommendations made by this review'. However the Jurisdictional Regulators are of the view that substantial time and effort is required to draft the specific Code changes that are required to implement the recommendations of this Review. Accordingly, the Jurisdictional Regulators have proposed actions to ensure that the required Code changes are drafted and proposed to NECA in an appropriate time frame.

It is further proposed that the following principles apply in the drafting of any Code changes:

- Barriers to the adoption of economically efficient metering solutions and other economically efficient technology should be reduced;
- The metering arrangements for first tier and second tier customers should be equitable;
- Regulatory instruments should be harmonised so that provisions are not duplicated; and
- The Code objectives and Jurisdictional Regulators' objectives should be considered.

11.1 Draft recommendation

In the Draft Report, it was recommended that the recommendations in the earlier sections of the report be implemented by:

- Amending Chapter 7 of the Code:
  - To include metering for first tier customers;
  - To provide for a single Metrology Procedure;
  - So that the distributor is exclusively responsible for the metering for small customers;
  - To incorporate a non-reversion policy;

[97] National Electricity Code, clause 7.13(g)

- To harmonise regulatory instruments;
- To consider specific technical metrology issues raised; and
- To specify the date and scope of the next review;

- NEMMCO leading the Code change process and the development of a single nationally consistent Metrology Procedure; and
- Submitting draft Code changes to NECA (or replacement body) by 30 June 2005.

11.2 Implementation timeframe

Centurion believes the implementation and review timeframes seem unnecessarily 'lethargic', and recommends a strict implementation timetable be adhered to:

- Code changes agreed and submitted to NECA by 30 September 2004;
- Code changes implemented from 1 July 2005;
- A draft Metrology Procedure should be available for comment by 31 December 2004; and
- The Metrology Procedure should be effective from 1 July 2005.

However, Australian Inland believes any changes to metering services, which affect large numbers of customers, should be gradual and well planned to avoid confusion and failure of the change.

The Jurisdictional Regulators concur with Australian Inland's view rather than Centurion's. The changes that are being proposed to the Code are significant and the time required to draft those changes should not be underestimated. The relationship between the Code and the Metrology Procedure is such that it is most efficient to amend the Code and develop the single nationally consistent Metrology Procedure in parallel. It is therefore proposed that the timeframe remain unchanged.

11.3 Implementation requirements

Based on submissions received, some of the recommendations in the Draft Report have been modified in previous sections in this report. Consequential amendments to the implementation recommendations are also required, specifically those relating to:

- The Responsible Person; and
- The scope of the next review.

United Energy has proposed amendments to the draft recommendations:

- Draft recommendation 7.1.3 - where interval meters are installed, as a principle interval meter data should be utilised with an opportunity to have an exemption from the rule below a certain threshold where requested. As discussed in section 7.1.3, each jurisdiction will have the flexibility to set this limit; and
- Draft recommendation 8.5 - the Metrology Coordinator role (or equivalent) should make a conscious decision and provide guidance to NEMMCO that type 6 metering will continue as part of the metrology procedure, on a more frequent basis than a single proposed review in 5 years. As discussed in section 8.7, the Jurisdictional Regulators do not propose to retain a requirement to review the continuation of type 6 metering installations prior to 30 June 2008.

No changes are proposed to the recommendation based on United Energy's comments.

Subject to the jurisdictional regulators' final determination, the NEMMCO Board has endorsed NEMMCO leading the proposed Code change work, with the objective of meeting the target date for submission of key Code change proposals to NECA or the AEMC[98], as the case may be, and the provision of ongoing operational support where required. NEMMCO has indicated that the cost of undertaking such work is $550,000 in the 2004/05 budget.

The Jurisdictional Regulators note the benefits of implementing the outcomes of the Review, notably the reduction in barriers to the adoption of economically efficient metering solutions and other technology, the efficiencies associated with a reduced number of regulatory instruments, and the removal of the overlap in functions across the jurisdictions. Many submissions indicated the cost savings available to them. When aggregated it is expected that the benefits associated with these changes will exceed the costs.

11.4 Final recommendation

Based on submissions to the Draft Report, the recommendation on implementation has been amended to incorporate changes to the recommendations regarding the Responsible Person and the scope of the next review. In addition, the target date for the submission of the key Code changes to NECA (AEMC) has been varied from 30 June 2005 to 31 December 2005 to account for the passage of time since the Draft Report was released.

11.1 The Jurisdictional Regulators propose that Chapter 7 of the Code be amended to implement certain of the recommendations made by this Review (as set out below). Consequential amendments may be required to other Chapters of the Code.

[98] AEMC is The Australian Energy Market Commission. The AEMC is intended to replace NECA in the management of changes to the National Electricity Code.

11.2 The Jurisdictional Regulators recommend the following process be undertaken to prepare draft Code changes for this purpose:

(a) NEMMCO should lead the Code change process and the development of the single Metrology Procedure;

(b) NEMMCO should report its progress on the Code change process to the Jurisdictional Regulators on at least a monthly basis; and

(c) The draft Code changes addressing recommendation 11.3(c) (iii), as a minimum, should be in a form so as to enable submission of the draft Code changes to NECA by 31 December 2005.

11.3 The recommendations made by this Review that are to be addressed in the draft Code changes are as follows:

(a) (first tier customers) Chapter 7 is to be extended so that it includes metrology for both first tier customers and second tier customers (refer to recommendation 3.1);

(b) (Metrology Procedure) The provisions of Chapter 7 relating to metrology procedures are to be amended to:

(i) provide for a single Metrology Procedure to apply in all jurisdictions in respect of metering installation types 1 to 7 (refer to recommendation 3.2);

(ii) make NEMMCO responsible for the Metrology Procedure (refer to recommendation 3.3); and

(iii) expressly recognise that the jurisdictions retain responsibility for key policy decisions underpinning the Metrology Procedure and provide for jurisdictional policy differences[99] to be reflected in the Metrology Procedure (refer to recommendation 3.2(d))[100];

(c) (Responsible Person) Chapter 7 is to be amended so that:

(i) the current approach to the choice of Responsible Person be retained for second tier customers with metering installation types 1 to 4 with

[99] As discussed in section 3.5

[100] It is noted that this approach was taken in relation to the CATS Procedures. There may be value in amending the provisions in Chapter 7 relating to the CATS Procedures, to expressly recognise that this approach was (and in the future may continue to be) taken in relation to jurisdictional differences within the CATS procedures.

the provision to extend this approach to all first tier customers with annual consumption greater than z MWh, with the decisions on the value of z and whether to make available competitive metering services for these customers being made by the jurisdiction;

(ii) the choice of Responsible Person is provided to all first tier and second tier customers with annual consumption less than z MWh with a meter that meets the requirements of a metering installation type 1, 2, 3 or 4, with the decision on whether to make available competitive metering services for these customers being made by the jurisdiction (refer to recommendation 4.2);

(iii) the distributors are the exclusive Responsible Person for all first and second tier customers with annual consumption less than z MWh and with a meter that does not meet the requirements of a metering installation type 1, 2, 3 or 4 (refer to recommendation 4.3);

(d) (Non reversion policy) Chapter 7 is to be amended to provide that:

(i) an interval meter must not be replaced with an accumulation meter. Any specific jurisdictional exceptions are to be specified by each jurisdiction in the Metrology Procedure (refer to recommendation 7.1); and

(ii) for customers above a certain threshold (to be specified by each jurisdiction in the Metrology Procedure) an interval meter must be read as an interval meter (refer to recommendation 7.2);

(e) (NEMMCO reviews) Chapter 7 is to be amended to:

(i) harmonise, and remove duplication between, the provisions of Chapter 7, the Metrology Procedure and other NEMMCO procedures in relation to metrology (refer to recommendation 3.2);

(ii) implement any outcome of the consideration to be given by NEMMCO to the current requirements for storage of, and access to, metering data (refer to recommendation 7.5); and

(iii) specify which provisions of Chapter 7 apply to which metering installation types (refer to recommendation 7.7);

(f) (Profiling) Clause 7.3.4(e) is to be deleted (refer to recommendation 8.2); and

(g) (Next review) Chapter 7 is to be amended to:

(i) require a further review to be undertaken by the Jurisdictional Regulators, to be completed by 30 June 2008, having the following objectives:

- **to review the outcomes from this Review and where any issues are identified, to make recommendations to resolve those issues;**
- **to identify any additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology; and**
- **where additional barriers to the adoption of economically efficient metering solutions and other economically efficient technology are identified, to make recommendations to reduce those barriers; and**

(ii) require the Jurisdictional Regulators in undertaking the further review, to have regard to the need to maintain the regulatory certainty provided as an outcome of this Review (refer to recommendations 10.1, 10.2 and 10.3).

A Appendix: Parties that made submissions to the Issues Paper and/or Draft Report

The following table lists the parties that made submissions to the Issues Paper and/or Draft Report.

Name of party	Issues Paper	Draft Report	Abbreviation Used in Final Report	Stakeholder Group
ActewAGL	X	--	ActewAGL	Distributor/Retailer
Advanced Power Management	X	--	APM	Supplier
AGL Electricity	X	--	AGLE	Distributor/Retailer
AGL Victoria	--	X	AGLV	Distributor/Retailer
Aurora Energy	X	--	Aurora Energy	Distributor/Retailer
Australian Consumers Association	--	X	ACA	Consumers
Australian Inland	--	X	Australian Inland	Distributor/Retailer
Bayard Capital	--	X	Bayard	Supplier
Business SA	X	--	Business SA	Industry Association
Centurion Metering Technologies	X	X	Centurion	Supplier
Commercial & Strategic Solutions	X	X	C&SS	Consultant
Country Energy	X	X	Country Energy	Distributor/Retailer
Elster Metering	--	X	Elster Metering	Supplier
Email Metering	X	X	Email Metering	Supplier
Energex	X	--	Energex	Distributor/Retailer
Energy Action Group	X	--	EAG	Consumers
Energy and Water Ombudsman of NSW	X	--	EWON	Consumers
EnergyAustralia	X	X	EnergyAustralia	Distributor/Retailer
Ergon Energy Corporation Limited	X	--	Ergon Network	Distributor
Ergon Energy Proprietary Limited	X	X	Ergon Retail	Retailer
ETSA Utilities	--	X	ETSA Utilities	Distributor
Ezikey	X	--	Ezikey	Supplier
Hugh Outhred	X	--	Outhred	Academic

Name of party	Issues Paper	Draft Report	Abbreviation Used in Final Report	Stakeholder Group
Integral Energy	X	X	Integral Energy	Distributor/Retailer
Intermoco	X	--	Intermoco	Supplier
Landis + Gyr	X	--	L+G	Supplier
national electrical & communications association	X	--	neca	
National Electricity Market Management Company	X	X	NEMMCO	NEM
Nilsen Technologies	X	--	Nilsen	Supplier
Origin Energy	X	X	Origin Energy	Retailer
Powercor and CitiPower	--	X	Powercor and CitiPower	Distributor
Powercor, CitiPower and ETSA Utilities	X	--	Powercor, CitiPower and ETSA Utilities	Distributor
Powerdirect	--	X	Powerdirect	Retailer
Pubic Interest Advocacy Centre	X	X	PIAC	Consumers
TXU	X	X	TXU	Distributor/Retailer
United Energy	X	X	United Energy	Distributor

Note: 'X' indicates a submission was made.

B Appendix: Summary of submissions to the Issues Paper

A detailed summary of submissions to the Issues Paper is provided in this Appendix. The submissions are summarised in the order in which the issues are discussed in this Final Report, that is:

- Developing an assessment framework;
- Nationally consistent Metrology Procedures;
- Responsibility for metering services;
- Meter ownership;
- Distribution and retail tariffs;
- Other legal and regulatory issues;
- Current metering arrangements; and
- Ring-fencing arrangements.

B.1 Developing an assessment framework

The Issues Paper sought comments in relation to the assessment framework. Was the assessment framework complete? Was the interpretation of economic efficiency appropriate for this Review? Were there any additional assessment criteria that should be considered? Considering the interrelationship of different concepts associated with the Review, was the approach to assessing the issues appropriate?

B.1.1 The assessment framework

NEMMCO, Powercor, CitiPower, ETSA Utilities Aurora Energy, Email Metering, Intermoco, Business SA, TXU and Country Energy each expressed general support for an assessment framework based on economic efficiency, practicality and equity, as presented in the Issues Paper. NEMMCO believes that:

> *the jurisdictional Issues Paper correctly identified complex metrology issues that need addressing and provides an appropriate model for the analysis of these issues in the NEM.*

Other stakeholders also supported this type of assessment framework, but suggested that weightings be applied to the assessment criteria. Integral Energy suggested that the application of weightings to the three assessment criteria, or the ranking of issues (e.g. Negligible, Minor, Significant, Major, Extreme, etc), would facilitate the analysis in the absence of firm costing data. EnergyAustralia suggested that overriding consideration should be given to practicality and the objectives of the market and other reforms, while PIAC considered the social equity aspects of utmost importance.

Ergon Network suggested that the assessment framework was overly emphasising the pure economic aspects, which it considers less relevant than the practical issues, such as:

- What customers really want;
- What are the realistic technological developments; and
- At what cost and who's prepared to pay.

TXU considers the assessment framework acceptable, but is concerned that it is high level and could be interpreted differently by each of the Jurisdictional Regulators. Therefore, TXU recommends further debate about the relative importance of both the high level criteria and the lower level considerations contained in the appendices of the Issues Paper.

Origin Energy believes 'barriers' are any impediment to maximising efficiency, which emanates from a market failure(s), where market failure includes monopoly and market power, and imperfect information. Origin Energy argues that:

> *[t]here should be a presumption that markets will deliver optimal outcomes in the absence of market failures, and an onus on those seeking government intervention, to demonstrate that such failures exist. Intervention in the name of equity need not pass this test, but the method used, should seek to minimise the impact on efficiency.*

AGLE was strongly opposed to the approach presented in the Issues Paper and disagreed fundamentally with the assessment criteria:

> *AGL fundamentally disagrees with the assessment criteria developed in the paper. The paper assumes that it is the role of the metrology procedures to determine and then require the solutions and procedures that deliver economic efficiency. AGL does not agree with this view, nor is this view supported by economic theory.*

AGLE suggested:

> *the report should focus on determining how the current metrology procedures can be changed to expand and enhance customers' ability to make choices, rather than on the false belief that regulators can determine the processes and technologies that will deliver economic efficiency. Such regulatory intervention may itself lead to market failure.*

Other submissions also suggested that there was insufficient consideration provided to consumers, particularly their needs and ability to participate in the market:

- ActewAGL argued that the concept of economic efficiency needs to concentrate on the consumer and the ability of the industry to deliver the consumer's requirements. The consumer's behaviour should not be changed to meet the industry's requirements unless the consumer is willing and the consumer will generally benefit from the change;

- Intermoco suggested that the consumer's ability to participate in the market does not appear to have been given sufficient weight in the assessment framework and criteria. Intermoco submitted that until the consumer is made aware, in a reasonable period of time, of their usage and the factors that drive their usage, they have a limited ability to make decisions;
- Ergon Network was concerned that there was undue economic analysis as opposed to customer requirement and willingness to pay analysis. Ergon Network suggests that lack of consumer uptake of retail contestability may be due to general apathy, lack of understanding of the market and a distaste for making complex decisions;
- Outhred considers that the assessment framework fails to adequately discuss how end-users could contribute to improved economic efficiency and what measures could be implemented to support effective end-user participation; and
- ActewAGL notes that consumer lifestyles have an impact on consumers loads and, therefore, it may be necessary to consider whether consumers would modify their lifestyles in response to spot prices.

However, C&SS believes that the assessment framework places too much emphasis on the consumer choosing a metering solution, rather than being the ultimate beneficiary from market participants having access to relevant and timely interval data. C&SS argues that consumers do not have the necessary information to make an informed decision, nor do they have an understanding of the potential impact of the availability of interval data.

Additional assessment criteria

- Some of the stakeholders proposed that additional criteria be included in the assessment framework:
- L+G noted that a type 5 meter has never been manufactured and deployed in large numbers and suggested that technological risk be considered in the assessment framework;
- Ergon Network believes that physical environmental conditions warrant significant weighting in the assessment criteria as certain environments are not necessarily compatible with intelligent meters that rely on electronic transfer of data;
- Energex suggested that the assessment criteria need to accommodate a wider objective set. Assessment criteria that concentrate on Code objectives alone ignore other drivers, such as State based government objectives, State based regulations on tariff caps, jurisdictional network pricing determination and reforms in allied areas such as gas, privacy laws, etc.;
- Energex suggested that the assessment criteria should also acknowledge the often different objectives of State based governments in respect of electricity, which include factors such as rural/urban subsidy, true cost reflectivity for the various market sectors, embedded subsidies, tariff flexibility and community service obligations;

- United Energy was concerned that the assessment criteria give little consideration to actual market dynamics. In Victoria in particular, the oligopolistic nature of aspects of the market, the limited availability of electricity hedges for new entrants and the fact that most distributors are not vertically integrated means that there is little or no incentive to go after market share or restrict retail switching. Such market dynamics are equally relevant in any consideration of barriers to end users switching retailers;
- C&SS suggested that the assessment criteria did not adequately accommodate the issue of meter accuracy;
- EnergyAustralia suggested that issues such as governance, practicality, certainty of cost recovery and long term cost benefit analysis were also useful drivers and criteria; and
- Country Energy argued that the assessment criteria should consider the objective of revenue recovery for the distributor.

Powercor, CitiPower and ETSA Utilities argued that:

> *[t]he Review must incorporate all the issues, costs and long term benefits, and subject these to open and transparent consultation, before any decision is made.*

United Energy argued that any decisions must be supported by a full cost benefit analysis of the short and long term impacts on both beneficiaries and those impacted detrimentally. Other submissions also highlighted the need for detailed cost benefit analysis to be undertaken, particularly in relation to the assessment of deployment options.

B.2 Nationally consistent Metrology Procedures

The Issues Paper sought comments on:

- Whether there should be greater consistency across the jurisdictional metrology procedures for metering installation types 5, 6 and 7;
- The benefits that are realisable from greater consistency across the metrology procedures;
- Whether the responsibility for some or all of the metrology procedures should be transferred from the Jurisdictional Regulators to NEMMCO;
- Whether there are any additional options for developing a greater level of national consistency across the metrology procedures for metering installation types 5, 6 and 7 that should be considered; and
- Whether the discussion in the Issues Paper adequately considered the issues relating to further consistency across the metrology procedures.

More than half of the submissions[101] were generally supportive of greater consistency across the jurisdictional metrology procedures for metering installation types 5, 6 and 7. The expected benefits of greater national consistency included:

- Economies of scale, and reduced prices, for interval meters (Business SA, Nilsen, Country Energy, AGLE);
- Reduced compliance costs and simpler compliance monitoring, leading to greater levels of compliance (Origin Energy, Ergon Network, United Energy); and
- Facilitation of competition across state borders (Business SA, Origin Energy, United Energy, Country Energy).

Those submissions that were supportive of greater national consistency for the metrology procedures were also generally supportive of transferring some or all of the responsibility for metrology procedures to a single national body, such as NEMMCO.

Specifically, Country Energy believes:

> *NEMMCO is best placed to deliver nationally consistent metrology procedures, given their current responsibility for types 1 - 4 metering installations, technical expertise and ability to view the national market as a whole rather than as a group of separate jurisdictions.*

Country Energy also suggested that Jurisdictional Regulators could still retain responsibility for key policy decisions relating to metrology procedures, without having to be burdened with managing technical provisions.

NEMMCO noted that it:

> *is well placed to manage the various technical metrology standards and procedures that affect the efficiency of participant businesses in the NEM. Extending this role to include all first-tier and second-tier metering and related metering services would maximise the benefits summarised in … the Issues Paper.*

TXU, EnergyAustralia, Integral Energy, Powercor, CitiPower, ETSA Utilities and United Energy each supported Option 7. NEMMCO also supported this option, with the following modification (added at the end): 'In addition, obligations that are duplicated in other NEMMCO procedures and/or the Code will be harmonised to ensure that wherever possible the obligations appear only once in the combined metrology requirements'.

Integral Energy believes that Option 7:

[101] Business SA, Integral Energy, NEMMCO, Powercor, CitiPower, ETSA Utilities, Ergon Network, Ergon Retail, United Energy, Nilsen, Origin Energy, TXU, Intermoco, EnergyAustralia, Country Energy and

> *would not only facilitate alignment across jurisdictions, but would greatly reduce the complexity and confusion associated with multiple sources of obligations and also ensure consistency between first and second tier metering rules.*

While generally supportive of greater national consistency in metrology procedures, Ergon Retail believes that:

> *Jurisdictional Regulators should be mindful of the need to balance the individual policy position of each Jurisdiction in relation to the Metrology Frameworks against the quest for consistency.*
>
> *… the Review … should not be used as a platform to deliver the 'one size fits all' so often advocated within the [NEM], under the guise of consistency.*

PIAC agreed that there is merit in a more uniform national metrology procedure, but noted that this would not be supported if it resulted in a lessening of the consumer protection provisions. Further, PIAC suggested that the jurisdictions should retain the option to 'opt-out' of a national document.

Only ActewAGL was explicitly opposed to greater national consistency in the metrology procedures:

> *ActewAGL has a significant investment in meters and metering procedures. This metering system meets the metering requirements of the ACT. There is no need for the metering system in the ACT to meet the requirements of other jurisdictions. It is more efficient for the regulations to accommodate the metering systems of the different jurisdictions than for the metering systems in each and every jurisdiction to adopt national uniformity.*

B.3 Responsibility for metering services

The following options for removing any barrier that the current metering services arrangements may be creating to the adoption of economically efficient metering solutions or other technology were considered in the Issues Paper:

Option 1 Introduce competitive metering services for small second tier customers as required under the Code, that is, allow exclusivity to lapse as per the current derogations.

Option 2 Distributor continues to exclusively provide metering services for small second tier customers for a further transitional period, that is, extend the exclusivity period.

Option 3 Distributor continues to exclusively provide metering services for small second tier customers in perpetuity, that is, amend the Code to remove the option for competitive metering services for small second tier customers.

Option 4 Distributor continues to exclusively provide metering services for small second tier customers, except those customers that have elected to pay for a meter, other than the distributor's standard offering.

Option 5 Distributor continues to exclusively provide metering services for small second tier customers, but only for meter provision.

Option 6 Distributor continues to exclusively provide metering services for small second tier customers, but only for metering data services.

Option 7 Distributor exclusively provides metering services for all second tier customers consuming less than 160 MWh per annum, that is, NSW is consistent with the other jurisdictions.

Option 8 Distributor continues to exclusively provide metering services, but only for second tier customers consuming less than 100 MWh per annum, that is, all jurisdictions are consistent with NSW.

Option 9 Introduce competitive metering services for first tier customers that consume above the threshold level of the exclusivity derogation.

The Issues Paper sought comments as to whether:

- The current metering service arrangements are a barrier to consumers adopting economically efficient metering solutions and other technology;
- The discussion in the Issues Paper adequately considered the issues related to metering services; and
- There are any other options that should be considered in relation to the responsibility for metering services.

B.3.1 Barriers to adopting economically efficient metering solutions or other technologies

Business SA, Centurion, Origin Energy and AGLE believe that the current metering services arrangements are a barrier to consumers adopting economically efficient metering solutions or other technology. Origin Energy believes that monopoly responsibility for metering services may hinder the customer / retailers' ability to select metering technologies, beyond the distributor's standard installation. This is because of the compatibility required between meter service providers and metering technology.

On the other hand, Integral Energy, Aurora Energy, TXU, Country Energy, United Energy ActewAGL and Ergon Network believe that the current metering services arrangements do not pose a barrier to the adoption of economically efficient metering solutions or other

technology. United Energy noted that the regulations allow consumers to choose a metering installation other than the distributor's standard offering, albeit at an additional cost.

B.3.2 Allow derogation exclusivity to lapse (Option 1)

Business SA, Origin Energy, AGLE, Intermoco, EziKey and Centurion expressed support for competition in metering services. Specific comments in support of this include:

- Business SA argued that if competitive metering services improve the effectiveness of retail competition, the consumer gain is likely to exceed the metering service costs. Business SA believes that the issue of meter churn has been overstated and points out that changing meter service provider does not mean a change of service provider;
- Origin Energy believes that providing all second tier customers / retailers the option of not using the distributor is likely to be an effective rigour on distributors in terms of the level of service they provide to retailers; and
- EziKey believes the introduction of competitive pressures will reward those service providers that adopt efficient and progressive solutions that are able to facilitate market strategies of innovative retailers. By exercising their option to accept or reject a new market offering customers will adjudicate on the success or otherwise of the retailer's strategy.

AGLE also supported contestability as it would encourage the development of new technologies and processes that in turn will lead to reduced costs, but suggested that distributors be required to provide the metering services as a regulated service until the contestable market for the provision of these services develops.

Intermoco suggested that if a mandated roll out was adopted, distributors retain exclusivity until the deployment is completed.

EWON is concerned that this option would increase the potential for operational complexity and the risk of greater problems being experienced by small retail customers in NSW. EWON is of the view that the disadvantages of competition in metering services will outweigh any advantages.

PIAC agreed that the costs of introducing competition are likely to exceed the benefits, at least for the smaller customers, and pointed out that the NSW situation demonstrates that innovation does not rely on the introduction of competition to metering services.

Powercor, CitiPower and ETSA Utilities believe there is a real danger that customers will experience reduced customer service through late or inaccurate bills, and that the viability of the industry be put at risk by a corresponding interruption to cash flow. Furthermore, the businesses believe that:

> *[t]he introduction of meter services contestability would arguably generate a negligible reduction or increase in meter services charges but more importantly would create barriers to retail contestability through added complexity, cost and inconvenience.*

Country Energy also provided similar comments.

B.3.3 Extend exclusivity derogation for a further period / into perpetuity (Options 2 and 3)

Distributors (namely Integral Energy, United Energy, Country Energy, EnergyAustralia, Ergon Network, TXU, Powercor, CitiPower and ETSA Utilities) and Email Metering were generally in favour of extending exclusivity for the provision of metering services into perpetuity. Specifically, Integral Energy argued:

> *Given the significance of these difficulties [associated with responsibility for metering services], and the impact uncertainty of future responsibility has on innovation and installation of innovative metering technology, Integral urges the Jurisdictional Regulators to propose a permanent Code change to assign the responsibility for small customer metering to distributors.*
>
> *it is clear from the analysis undertaken in the paper, that the benefits of the Distributor continuing to provide metering services for small customers in perpetuity far exceed any potential benefits of introducing competition.*

United Energy provided similar comments.

Powercor, CitiPower and ETSA Utilities noted that the reasons for originally introducing exclusivity are still relevant today and agreed that:

> *an extension of the current exclusivity arrangements into perpetuity would appear to deliver the best outcome for customers, both in terms of efficiency and practicality. In addition, an exclusivity arrangement provides a simple mechanism by which equity can be maintained amongst different customer groups.*

To ensure that distributor exclusivity for metering services does not present a barrier, Integral Energy suggests that an obligation be placed on the distributors to provide the functionality required by the customer / retailer at a reasonable cost. Similarly, EnergyAustralia suggested that competitive principles be enshrined in the market rules.

B.3.4 Other options / comments

NEMMCO notes that the influences on service provider roles (i.e. the wide range of national and jurisdictional requirements) have made it difficult to establish a consistent definition of

service requirements and have produced conflicting requirements that reduce the efficiency of the NEM, participant businesses and service provider businesses. There is a need to review metering service arrangements and to define the basic requirements in a consistent manner across all NEM jurisdictions, for all metering types and metering services. NEMMCO suggests that it could facilitate this review if its role were to span all metering, including first tier metering.

NEMMCO also suggested two additional options:

- Option 10 – Distributor provides metering services that meet agreed service requirements (e.g. defined through a NEMMCO facilitated process) for all consumer-load metering (Types 1-7), for all consumers in their network area (first-tier and second-tier), to support NEM settlement, network billing and retail billing.
- Option 11 – Introduce competitive metering services that meet agreed service requirements (e.g. defined through a NEMMCO facilitated process) for all consumer-load metering (Types 1-7), for all consumers (first-tier and second-tier), to support NEM settlement, network billing and retail billing.

NEMMCO believes the benefit of these options would be similar to those expressed in section 8.6 of the Issues Paper.

C&SS submitted that the Review needs to focus more on the need for access to timely data (rather than the physical meter), as it is the data that is required for an effective and efficient NEM. Furthermore, the Issues Paper does not adequately consider the potential and opportunity for competition in the relevant and separate areas of:

- Physical 'infrastructure' i.e. competition in the supply of: metering solution hardware and software; metering solution manufacturing services; and metering solution installation, maintenance and testing services; and
- Data management, manipulation and supply services.

United Energy raised other points that they believe have been overlooked:

- There is little discussion regarding type 7 metering services;
- The complexity of embedded networks in a contestable meter and meter data services environment could be expected to increase significantly; and
- In the event that the Joint Regulators deem the market contestable in the provision of metering and meter data services then distributors should no longer need to be a default provider.

United Energy argued that the Joint Regulators must stand by their convictions and allow distributors to exit service provision in aspects of the market where it is uneconomic for them to remain.

Ergon Network noted that the Code has bundled technical responsibility with customer transfers and suggests that it would support the concept of a new role – the 'Responsible Service Provider' – that would take on the obligations of delivering the technical areas of responsibility.

B.4 Meter ownership

The Issues Paper considered a range of meter ownership options, which may be applied to small and /or large customers:

Option 1 Meter ownership is vested with the retailer.

Option 2 Meter ownership is vested with the customer.

Option 3 Meter ownership is vested with the distributor.

Option 4 Meter ownership is vested with a third party.

Option 5 Meter ownership may be vested with the retailer, the customer, the distributor or a third party.

The Issues Paper sought comments as to:

- Whether the existing meter ownership model is a barrier to consumers switching retailers or a barrier to consumers adopting economically efficient metering solutions or other technology;
- Whether there are any other options for meter ownership that should be considered;
- Which party should own meters; and
- Whether the discussion of the meter ownership options in the Issues Paper adequately considered the issues related to meter ownership.

Powercor, CitiPower, ETSA Utilities, Aurora Energy, United Energy, Nilsen, Ergon Network and Country Energy stated that there is no evidence that the current meter ownership model acts as a barrier to customer switching. Specific comments included:

- Powercor, CitiPower and ETSA Utilities stated that this is not unexpected in Victoria and South Australia, particularly, given the majority of distributors there no longer have retail operations;
- Ergon Network believes there would be greater barriers if parties other than the distributor owned the meter, as distributors have nothing to gain by creating barriers to customer retail transfers;
- Country Energy believes the greatest impediments and barriers to switching are the communication of expectations between retailers, customers and meter providers and

operational complexity. These issues are likely to be heightened and get even more difficult, problematic, complex and costly under competition if more and more parties become involved in meter ownership.

United Energy, Country Energy, Ergon Network and Origin Energy believe that meter ownership by the distributor is a not a barrier to the adoption of economically efficient metering solutions or other technology. Origin Energy noted that, once selected and installed, the distributor can in theory own any meter types.

The majority of submissions[102] agreed that meter ownership should remain with the distributors. Country Energy's view, which was also reflected in submissions from these other stakeholders, was that:

> *there would be a significant loss in economies of scale if the ownership of meters for small customers were transferred from the distributor to another party in the market, resulting in increased costs. Meter ownership and the provision of asset management services are inextricably linked, and is a fundamental distribution service that is more efficiently allocated to distributors in terms of minimising costs.*

United Energy also noted:

> *it is the distributor that acts as the common thread throughout the life of the metering installation; while consumers, retailers and even site usage change the distributor remains, able to maintain relevant site, meter and meter installation information.*

However, other stakeholders believe that meter ownership should be opened up to competition:

- Centurion believes that meter ownership should be opened to any legal entity prepared to invest in the asset and its ongoing maintenance. In fact, the role of Meter Owner should be a recognised market role in itself with the right to operate throughout the NEM;
- Ergon Network acknowledged that there are economies of scale in distributor ownership of meters, but that the customer should have the option to 'opt out' of this arrangement;
- EziKey believes that meters should be owned by any party, thereby guaranteeing maximum competition and technical innovation in this field. By exercising their option to accept or reject a new market offering customers will adjudicate on the success or otherwise of the retailer's strategy;
- Aurora Energy believes anyone should be able to own the meter, so as to avoid introducing artificial signals into the market;

[102] See, for example, the submissions to the Issues Paper by APM, Nilsen, Centurion, PIAC, EWON, C&SS, Powercor, CitiPower, ETSA Utilities, Email Metering, Ergon Network, Ergon Retail, United Energy, EnergyAustralia, Integral Energy, TXU and Country Energy.

- Energex believes that the market should decide an appropriate ownership model (i.e. allow ownership by any party); and
- AGLE believes any suitably qualified and certified party should be able to own meters.

Intermoco also believes that meter ownership should be opened up to competition so as to encourage innovation and to allow retailers to gain cost efficiencies from standardising their meter technology, but suggested that distributors retain ownership until after the completion of a roll out of the preferred metering technology.

To ensure data integrity and security, AGLE noted that it would be necessary to ensure that meter owners have the appropriate processes and systems. This could be done through a process of certification and auditing of compliance. Consequently, the responsibilities of a meter owner would, in most cases, preclude ownership by customers and retailers, unless they were prepared to undergo certification as a meter provider.

Business SA, Ergon Retail and United Energy suggested that retailers should not be meter owners. United Energy highlighted a Ministerial Inquiry in New Zealand, which found that meter ownership by retailers impeded the efficient switching of customers. United Energy believes that this was not surprising because retailers are competing amongst each other for the same customer.

Energex believes customers should not own meters because of their perceived vested income in the outcome. United Energy considers that customer ownership of meters is not appropriate because consumers cannot be expected to understand all the regulations relating to meter ownership, as well as the Code requirements.

Business SA believes that distributors should not own meters and argues that ownership and control of meters by distributors creates serious barriers to entry for retailers and is a source of conflict with customers.

NEMMCO does not have a preferred position on who should own the meter, and is more concerned with ensuring that parties with a valid need for access to a metering installation and its data are provided a right of access regardless of the commercial 'ownership' of each installation.

NEMMCO suggested that the following related issues have not been explored in the Issues Paper, and may need further consideration:

- A weakness in the current metering access arrangement is that end-use consumers are not Code participants and the definition of their right of access to metering has been left to each jurisdiction. Consequently, there is confusion in the industry about the facilitation of such access by NEM participants.
- The meter is a component of the electrical connection between a network and a consumer and, hence, a significant question may be 'who owns the connection point' and should the meter be treated in the same manner as other connection assets?

- Connection point management requirements for distribution network connections are not well defined in the NEM. Jurisdiction derogations have either removed or reduced the need for participants to comply with the connection point management obligations defined in Chapter 5 of the Code. The lack of connection point management procedures to be overseen by the jurisdictional regulator has reduced the ability to raise a dispute and hence the need for networks to comply.

B.5 Distribution and retail tariffs

The Issues Paper sought comments as to whether the setting of distribution and first tier retail tariffs is a barrier to the adoption of economically efficient metering solutions and other technology.

Business SA, EziKey, Integral Energy, Powercor, CitiPower, ETSA Utilities, Aurora Energy, United Energy, Origin Energy, TXU, AGLE and Country Energy agreed that regulatory restrictions on distribution and retail tariffs act as a barrier to the adoption of economically efficient metering solutions and other technologies, and that these restrictions would need to be lifted to facilitate a demand side response.

Origin Energy believes that restrictions on distribution and retail tariffs are the single largest barrier to the adoption of economically efficient metering solutions and other technologies:

> *While there is retail price regulation, price signals to customers are unlikely to be dynamically reflective of costs. The benefits of removing barriers in other areas of regulation to free up prices are severely thwarted if retail regulation (and to a lesser degree monopoly distribution prices) are removed (or phased out) at the same time.*

Aurora Energy noted that:

> *Retailers need to be provided with a framework that allows them to provide flexibility in pricing, which permits customers to signal their preferences as to the nature, level and quality of service to be provided.*

Business SA submitted that state-wide pricing policies for distributors inhibited the installation of interval meters. If distributors could charge for congestion, then customers could react by shifting demand to less congested and costly times. TXU agreed that time and locational based pricing by distributors could potentially encourage more efficient use of the network, but noted that introducing new price structures would not be equitable for those customers who have made location and investment decisions based on current price levels.

United Energy believes that the tight rebalancing constraints and price caps have limited the ability of both distributors and retailers in tariff innovation. Country Energy argued that the incentive to move towards more efficient pricing structures has been undermined in NSW by the highly prescriptive side constraints placed on distributors in that jurisdiction. However, PIAC strongly advocated the retention of effective side constraints in both retail and

distribution pricing. PIAC is concerned that the removal of these side constraints 'will guarantee' price rises for the bulk of residential consumers since most consumers will continue in a quasi-monopoly relationship with their first tier retailer.

Both Energex and Origin Energy disagreed with the assertion in the Issues Paper (p.62) that second tier tariffs 'are not constrained by non-market forces'. Origin Energy argued that the regulated first tier retail tariffs act as a ceiling on second tier tariffs. Energex also suggested that decisions made about first tier tariffs by governments and regulators can determine whether second tier retailers actually compete in the affected market sectors.

B.6 Other legal and regulatory issues

Other possible legal and regulatory barriers to the adoption of economically efficient metering solutions and other technology that were identified in the Issues Paper were:

- The 'non reversion' policies that are applicable to interval meters; and
- Technical metrology issues:
  - Storage of metering data;
  - Access to metering data; and
  - Enforcement of unique Australian metering standards.

The Issues Paper sought comments as to whether these legal and regulatory issues are barriers to the adoption of economically efficient metering solutions and other technology.

B.6.1 Non reversion policies

The non reversion policies in South Australia and Victoria were considered by Integral Energy, Origin Energy, TXU and AGLE to act as a barrier to the adoption of economically efficient metering solutions and other technology options.

AGLE believes that a non reversion policy may act as a barrier to customer choice:

> *Customer choice should allow the customer to choose any type of metering, within technical constraints. Should the market find it undesirable for a customer to revert from an interval meter to an accumulation meter, distributors and retailers should have the flexibility to reflect the economic cost to the market of the reversion in price signals sent to such customers.*

However, Integral Energy, Origin Energy and TXU, as well as Email Metering, Ergon Network, Nilsen, United Energy and EAG expressed support for the non reversion policy in NSW, where interval meters may not be replaced by accumulation meters, but may be read as accumulation meters. Specifically:

- Integral Energy believes this to be a cost effective method of obtaining network benefits, by allowing the meters to be read as time-of-use meters while retaining the flexibility for retailers to choose to obtain interval metering data at their discretion and cost;
- Origin Energy believes that interval meters are far more likely to be installed if customers / retailers could elect how to read them, and therefore choose to read them as interval meters when there are net benefits in doing so. Similar comments were provided by TXU and Email Metering;
- United Energy noted that NSW distributors have chosen to install interval meters because they can be read as an accumulation meter;
- Nilsen believes that distributors in other jurisdictions would increase the installation rate of interval meters if the NSW reversion policy was adopted in those jurisdictions; and
- EAG suggested that, once sufficient interval meters have been rolled out, the next steps can then be taken to have them read as interval meters.

Ergon Retail believes that the adoption of a non reversion policy in all jurisdictions would facilitate the delivery of effective competition. Business SA supported a non reversion policy as this would, over time, ensure retailers offered the most appropriate and market reflective tariffs. Similarly, EnergyAustralia argued that interval data should be extracted from all interval meters and used as the basis for billing, so as to allow for the use of economically efficient tariffs. Furthermore, EnergyAustralia believes that allowing interval meters to be read as accumulation meters would erode the benefits of type 5 meters whilst still incurring the costs.

Centurion also supports a non reversion policy and noted that it is not sufficient to rule that metering assets can be redeployed, as the cost of tracking and reinstalling removed assets would become a significant and unnecessary metering cost component.

B.6.2 Technical metrology issues

The technical metrology issues that were identified in the Issues Paper as potential barriers to the adoption of economically efficient metering solutions and other technology are:

- The period over which metering data is stored. The costs associated with reading interval meters may be increased if the data from these meters is required to be stored for a longer period than required;
- The provision of access to metering data. The costs associated with reading interval meters may be increased if the data is required to be provided to a range of parties that do not necessarily require the disaggregated data; and
- The enforcement of unique Australian metering standards, which may inhibit the sales of meters available globally, in Australia.

B.6.2.1 Storage of metering data

Business SA, C&SS and TXU do not consider the data storage requirements to be a barrier to the adoption of economically efficient metering solutions and other technologies. C&SS believes that, given the advancements in information technology over recent years, the costs of data storage are commonly overstated by industry participants. While Business SA does not consider this issue a barrier, it nevertheless believes that more consideration should be given to this matter to ensure that retailers are not unduly burdened.

United Energy noted that this issue needs to be considered in the wider context of business obligations. For example, this data may be required for taxation or other financial requirements.

Other comments received in relation to data storage include:

- Origin Energy believes that storage times should be as short as possible because the customer ultimately pays for excessive storage;
- Ergon Network suggested that a data storage period of between 13 to 24 months would be appropriate as it seems unnecessary to retain interval meter data for a 7-year period when all that is required may be the billing quantities;
- Intermoco considered a graded approach, under which detailed data is kept for relatively brief periods of time and data is progressively aggregated and the aggregated data is kept for longer periods of time, is appropriate; and
- AGLE supported the review of any constraints, such as an excessively burdensome requirement for data storage, which increase the cost of providing metering services. Any action to remove such unnecessary costs will support customer choice.

B.6.2.2 Access to metering data

Integral Energy believes the data access requirements are not a barrier to the adoption of economically efficient metering solutions and other technologies as the additional cost to provide this data to the local retailer is insignificant.

NEMMCO noted that retailers already have several levels of access to data stored in MSATS, including aggregated load data at transmission node level, load data at NMI level and non-aggregated data for each data stream associated with a NMI.

Other comments received in relation to data access include:

- Centurion believes a user pays mechanism must be introduced for the provision of metering data. It is inequitable to levy charges against one user of the data, as currently required by the Code, which must cover the costs of providing data to other participants;

- Ergon Network believes that, in practice, it would only be necessary to gain access to the relevant billing quantities data. The principle should be to allow access to data from the metering data database on request – and that the information should not be a free service;
- United Energy believes the proposal that the local retailer obtain metering data through NEMMCO may be appropriate, but notes that it does not address where replication may occur to support financial and tax records;
- TXU believes the availability of second tier interval data is necessary for first tier retailers to reconcile settlement statements; and
- AGLE supported the review of any constraints, such as an excessively burdensome requirement for data provision, which increase the cost of providing metering services. Any action to remove such unnecessary costs will support customer choice.

B.6.2.3 Enforcement of unique Australian metering standards

Business SA and Email Metering do not consider the Australian Standards to be a barrier to the adoption of economically efficient metering solutions and other technologies.

C&SS believes the Australian standards are a barrier to the adoption of economically efficient metering solutions and should therefore be revoked.

Integral Energy believes that, in some instances, unique Australian standards can be a barrier to the adoption of international metering equipment. However, Integral Energy believes this matter is more appropriately considered by Standards Australia, who has a mandate to minimise any differences to international standards. NEMMCO also believes this issue is best left to industry processes.

Other comments received in relation to unique Australian metering standards include:

- L+G is of the view that the IEC standard is the appropriate standard to use in regulatory instruments;
- PIAC is concerned that relaxing Australian standards would reduce the certainty consumers have about the accuracy of the measurement of their electricity consumption;
- TXU agreed with the concern raised by the Issues Paper regarding Australian standards for meters. The requirements for meters should aim wherever possible to fall in line with the international standard;
- Origin Energy believes that enforcement of unique Australian metering standards must be conducted with a view to cost effectiveness. That is, only where the uniqueness adds value to our market over and above the loss of scale economies and range caused by departing from global standards; and
- Ergon Network believes that, regardless of the standard adopted, it would be prudent for a meter purchaser/owner to include additional technical requirements, such as some of

those in the Australian Standard. These have evolved because the Australian distribution environment is different from many overseas environments.

B.7 Current metering arrangements

The Issues Paper sought comments in relation to whether the current jurisdictional metering arrangements are a barrier to all consumers, or to groups of consumers, adopting economically efficient metering solutions or other technology options. Are there allocative efficiencies that may be captured by adopting alternative metering solutions or other technology options?

B.7.1 Current jurisdictional metering arrangements

C&SS argued that the current metering arrangements are a barrier to the adoption of economically efficient metering solutions and other technologies. This is because the flat load consumer, while likely to gain an economic advantage, is most likely not in a position to afford an interval meter. On the other hand, the consumer with a peaky load has an incentive not to acquire an interval meters as this would unbundle the cross-subsidy currently enjoyed. Centurion and ActewAGL expressed similar views.

Other criticisms of the profiling solution include:

- Ergon Retail argued that:
  - Profiling does not provide true price signals to customers as retailer load profiles are developed on the flawed premise that a large number of differing customers would essentially have the same consumption patterns;
  - The profiling solution prevents a customer from gaining a reward by changing its consumption and thus fails to reward demand side management;
  - The delivery of efficient and competitively driven retail markets in all customer segments will not be achieved under the current Jurisdiction Preferred Trading Arrangement utilising accumulation metering with profiling; and
  - A lack of product diversity has stifled retailer differentiation and, hence, competition;
- EnergyAustralia and EAG also argued that profiling does not send price signals to customers;
- EAG argued that the profiling solution is inequitable because low-volume, non-air-conditioning customers subsidise high usage, air-conditioned customers. The cross-subsidies inherent in the profiling solution were also noted in other submissions, including those from Centurion, Ergon Retail, ActewAGL and C&SS;
- ActewAGL noted that the profiling solution in the ACT has resulted in less cost reflective tariffs and raised the retail cost of energy for residential consumers relative to commercial customers; and

- United Energy believes profiling is, at best, a half hearted attempt at linking the wholesale and retail markets, and is not a positive move towards the original intent of half-hour pricing in the NEM.

C&SS believes that there is a serious flaw in the current market settlement process and notes that there has been no attempt to quantify the impact of this flaw, which could be in the millions of dollars. C&SS believes this flaw represents a material barrier to new entrant retailers and further example of market failure. On the other hand, AGLE does not believe that there is anything wrong with the use of profiling for market settlement per se. However, AGLE would support some relatively simple and low cost improvements that could be made to the current profiles.

ActewAGL suggested that allocative efficiencies may be improved by adjusting the net system load profile for the off-peak load (as is the case in NSW). ActewAGL believes these benefits may exceed those obtained from interval metering.

Intermoco believes that the wide scale deployment of interval meters and automated meter reading technology will lead to capturing higher levels of allocative efficiency. This claim is supported by the results of the ESC's Position Paper on Installing Interval Meters for Electricity Customers – Costs and Benefits.

United Energy believes interval meters will deliver allocative efficiencies, with time-of-use meters being the next best option to realise allocative efficiencies.

Ergon Network, United Energy, Aurora Energy, L+G, ActewAGL and AGLE were of the view that the current metering arrangements do not present a significant barrier to the adoption of economically efficient metering solutions and other technologies.

Specifically, United Energy noted:

> *customers, first or second tier, have the ability to adopt the metering solution which they feel best fits their needs. While there may be an initial cost associated with the decision, the consumer would only make such a decision when there is sufficient benefit to be achieved either through the retail tariff or changed consumption pattern.*

TXU argued that it is not possible, on the analysis to date, to determine whether the lack of demand side response is due to the current arrangements or because the benefits of demand side management through interval metering are insufficient to justify the cost.

While the metering arrangements were not necessarily seen as a significant barrier to the adoption by consumers of specific metering solutions or other technologies in theory, stakeholders suggested that, in practice, there were other barriers:

- Centurion noted that the current industry structure does not reward retailers, distributors or consumers for investment in interval meters – no one market participant has compelling enough commercial reasons to singularly bear the additional cost of the

technology. For example, it is in the interest of the incumbent retailers not to install interval meters to maintain, as best they can, an effective monopoly of indifferent customers. TXU agreed that there is no party in the market with sufficient incentives to justify the cost of replacing meters prior to the end of their design life;

- Integral Energy believes that the main barriers to retailers installing interval meters are:
  - The short-term nature of the customer supply contracts compared to the life of the metering asset, which requires the cost of the asset to be recovered over a shorter period;
  - The lack of information available on individual customer load shapes, which means that a customer is unaware as to whether they would be better (or worse) off under an interval metering arrangement;
  - Existing contracts, which are based on net system load profile settlement; and
  - Billing systems, which are designed to process accumulation meter data;
- Integral Energy believes that the main barriers to distributors installing interval meters are:
  - Uncertainty of future responsibility, which limits investment in long-term innovative products;
  - Uncertainty of cost recovery, which limits the willingness of distributors to invest in innovative technology (also cited as a barrier by NEMMCO); and
  - Network tariff restrictions, which limits the benefits of interval metering;
- NEMMCO also cited uncertainty about cost recovery as a potential barrier and suggested that an issue that may warrant further investigation is how to improve the certainty and consistency around cost recovery associated with alternative metering solutions;
- Intermoco believes a lack of consumer awareness of their usage in a timely manner and of the factors that influence their usage is a barrier to the adoption of economically efficient metering solutions or other technologies;
- AGLE believes the major barrier is the cost differential between the distributor's offering and metering from another provider. A customer who chooses a metering solution other than the distributor's standard offering does not save the full cost of the distributor's standard offering. Rather, that customer will pay the full cost of their chosen metering solution and will continue to pay a contribution towards the distributor's metering costs through DUoS; and
- Powercor, CitiPower and ETSA Utilities believe the major impediments are the absence of regulatory certainty, the absence of demand for alternative metering solutions and the regulatory review process. In addition:
  - On-going regulatory restrictions on retail and network tariffs negate any benefit retailers or customers would receive from installing an interval meter; and

- Current regulatory arrangements actively discourage distributors investing in new metering solutions – the cost benchmarks used to build up capital expenditure forecasts are typically based on cost benchmarks that are not realistically achievable.

L+G suggested that the changes to the regulation, as proposed in the Issues Paper, are more likely to present barriers to efficient outcomes than is the case at present.

A number of submissions commented on the assumptions underpinning the realisation of allocative efficiencies. Specifically, Business SA believes that, given the opportunity, retailers will offer more cost reflective tariffs, customers will choose more cost reflective tariffs and customers will change consumption or pay. Centurion also believes these assumptions will be proved in a competitive market, but expects that customers will prefer simple structures with fixed rates.

However, L+G stated that there is no uncertainty as to whether retailers would offer more cost reflective tariffs and whether customers would accept these offers. L+G argued that the large contestable market has shown that customers prefer simple one or two rate accumulation tariffs, perhaps with a maximum demand component. Similarly, ActewAGL's experience is that large customers do not respond to variations in the spot price. TXU also agreed that consumers generally prefer simple tariffs that they can easily understand.

Energex believes that market acceptance of more innovative retail products using sophisticated metering technology, and perhaps involving active participation by end-use consumers in altered load patterns, will be a slow process.

Ergon Network argued that, whilst the Issues Paper discusses price signals, it is somewhat vague in discussing the purpose and nature of the price signals. Ergon Network believes that these decisions will trigger the technological solutions needed, which may not necessarily be interval metering alone. Furthermore, irrespective of meter type, a meter provides only historical data and in themselves may not deliver the price signalling that may be envisaged.

B.7.2 Metering solutions and other technologies

The metering solutions and other technology options, which may lead to economically efficient outcomes, that were considered in the Issues Paper were:

Option 1 Accumulation meters with additional profiling algorithms, either being profiles prepared and applied over a smaller profile area or more profiles within the same profile area (e.g. Controlled Load Profile).

Option 2 Accumulation meters with improved profiling algorithms by, for example, requiring all customers above 160MWh per annum to install interval meters, and netting off these loads to prepare the profile (effectively netting off large customers that are not representative of other, smaller customers on the profile).

Option 3 Time-of-use meters with the existing profiling algorithms.

Option 4 Time-of-use meters with additional profiling algorithms, which apply only to those customers with time-of-use meters.

Option 5 Interval meters that are manually read.

Option 6 Interval meters that are remotely read.

Option 7 Interval meters with two way communication facilities.

Option 8 Static load control (e.g. time switches) to switch peak and offpeak loads. This could be implemented in conjunction with one of the other options.

Option 9 Dynamic load control (e.g. ripple control) to switch peak and offpeak loads. This could be implemented in conjunction with one of the other options.

The Issues Paper sought comments as to whether there are other metering solutions or technology options that should be considered, consistent with increasing economic efficiency. Each of the metering and other technology options was also discussed within the assessment framework. The Issues Paper questioned whether the discussion adequately considered the options related to metering solutions and other technology.

B.7.2.1 Accumulation meters (Options 1 and 2)

Email Metering argued that electromechanical accumulation meters provide no opportunities for innovation. Ergon Retail believes that efficient and competitively driven retail markets in all customer segments will not be achieved utilising accumulation metering.

ActewAGL suggested that the net system load profile could be split into a residential profile and a commercial profile, thereby providing a more cost reflective profile for each customer class. NEMMCO provided two options for improving the load profiles, namely:

- Netting off large first tier customer loads; and
- Increasing the frequency of collection of accumulation metering data (e.g. weekly), using low speed, low cost remote communications technology.

L+G believes the option of creating additional profiles warrants further consideration.

United Energy does not support the option of creating additional profiling algorithms for the reasons specified in the Issues Paper as it considers that, at best:

> *profiling is a half-hearted attempt at linking the wholesale and retail markets and is not a positive move towards the original intent of half-hour pricing in the national electricity market.*

Furthermore, United Energy believes the time switches installed for heating loads are not sufficiently accurate to provide meaningful input into an alternative profile for load-controlled customers.

TXU does not support any of the profiling solutions, as committing resources to this solution would create additional hurdles to ultimately moving to interval meters, and would represent a move down what Trowbridge termed 'the slippery slope' of increasingly sophisticated and complex profiling outcomes. EnergyAustralia is also opposed to the introduction of geographic or TNI based profiling, as the introduction of more profiles will only complicate existing processes and little benefit will be derived.

B.7.2.2 Time-of-use meters (Options 3 and 4)

EnergyAustralia argued that there appears to be very limited future benefit to the purchase of meters with time-of-use functions only. However, L+G believes that, all things being equal, a time-of-use meter is cheaper to manufacture and sell than an interval meter.

United Energy believes that, should a decision be made not to roll out interval meters, then a time-of-use meter is the next best option to realise allocative efficiencies.

Country Energy is currently investigating the introduction of mandatory time-of-use network prices for all new connecting small customers (presumably with time-of-use or interval meters). Country Energy believes:

> *time-of-use pricing enables customers to better manage their electricity consumption and will assist Country Energy to more efficiently operate and manage its distribution assets, particularly aimed at controlling peak demand in those parts of the network experiencing the highest level of new customer connection and demand growth and emerging constraints.*

The comments on Options 1 and 2 in relation to additional profiles also apply to Options 3 and 4.

B.7.2.3 Interval meters (Options 5, 6 and 7)

Business SA, Email Metering, Nilsen, Intermoco, C&SS, EAG and Ergon Retail expressed support for interval metering. Specifically:

- Business SA believes interval metering will improve market competition and maturation, and encourage product innovation;

- Nilsen believes interval metering is the only solution that provides real equity for all stakeholders. While Nilsen believes that interval meters with online communications capability provide a number of advantages over manually read interval meters, it believes this functionality should be optional for smaller consumers;
- Intermoco argued that the benefits to the customer and the utility of remotely read interval meters are significant;
- Email Metering believes that cost effective interval metering with adequate functionality and on-board communications, which are already commercially available, will enable the development of products and systems for demand management;
- Centurion believes interval metering is the only logical option for the industry to pursue. The whole industry will operate more efficiently with an increased use of interval meters; and
- EAG believes that interval meters with two way communications will allow a range of price / load management options to be implemented.

PIAC expects that interval meters would result in higher prices for small customers, but believes there is merit in considering the use of interval meters for demand management.

United Energy believes that:

> *[if] there were a move to remove accumulation meters, it would seem prudent to replace them with an interval meter, where there is an economic incentive to do so.*

United Energy noted that this would provide the flexibility to read the meter either as an interval meter or a time-of-use meter and provide the option to revert to interval data as data management costs reduce. Furthermore, where data storage and data management are believed to be cost barriers to interval metering, the constraints should be removed to allow cheaper single channel interval meters to become the logical standard meter rather than imposing higher cost (initial and ongoing) two channel accumulation meters.

EnergyAustralia advised that it will be replacing all meters at sites down to about 15MWh per annum with interval meters over a five year period. In addition, all new installations with either an offpeak load or requiring three phase load, and all non-domestic installations will have an interval meter installed as the default meter type. EnergyAustralia noted that the rationale for this program is modelling, which demonstrates that time-of-use pricing will bring sufficient capital deferral to justify the cost and for the ability for demand side response.

C&SS believes an integrated interval meter infrastructure model (i.e. the Italian model) facilitates superior economically efficient services, including distributed services, real time access to data, remote connect and disconnect, load related tariffs, prepayments, remote device control and customer-specific service contracts. C&SS also noted that interval meters facilitate greater certainty for retailers in energy contracting and the development of hedging

strategies and derivative products. The resultant tariffs are an alternative and more appropriate form of price signal than time-of-use as it is more closely correlated to price drivers in the wholesale market.

However, C&SS has some concerns with the manually read interval metering Option 6, as proposed in the Issues Paper:

> *As this interval metering solution is likely to be delivered by multiple service providers on an ad hoc basis there will be no standard functionality and service level available to customers. The range of products and service offerings available will depend upon the type of meter installed at the physical premise. Accordingly, new customers at the premise will be restricted as to product and service restraints agreed by the previous tenant or will be faced with an additional cost through meter churn.*

Ergon Network does not support interval meters, as there are numerous operational issues with type 5 meters deployed to date in Australia, particularly in relation to manual meter reading. Ergon Network believes the remote reading option would have a very high risk – these meters rely on technologies that appear to be not universal and hence will not replace all type 6 metering, while the two way communications option is considered an extremely high-risk option, as it does not have a universal delivery communications infrastructure.

B.7.2.4 Other options

Other options that were suggested in the submissions include:

- A patent pending meter data collection system developed by APM, which can collect data at 5 minute intervals and does not generate any stranded assets as it overlays on top of existing meters. APM believes this option allows distributors to choose the best meter that offers the lowest cost, longest service life, lowest maintenance costs and best utilisation of existing facilities and expertise;
- Prepayment metering, which EziKey noted has demonstrated to be a useful mechanism for shifting consumption and managing budget constraints for a proportion of the Tasmanian market. While recognising this is not suitable for everyone, EziKey believes the Tasmanian experience demonstrates that a targeted, optional offer that delivers benefits to both industry and consumers will be successful. EWON also suggested that prepayment meters should be considered in any review of changes to metrology procedures in NSW.
- AGLE believes there is a place in the market for prepaid meters but that there is currently a barrier to the adoption of these meters because, as type 6 meters, they can only be provided by distributors. However, these meters are not part of a distributor's standard offering. AGLE believes that the provision of these meters should be contestable;
- Non-reconcilable mechanisms, such as flat or stepped rate tariffs with time-of-use metering, which Ergon Network suggested would be aimed at smaller customer groups or categories;

- Non-metering options, such as summer or inclining block tariffs, government policy changes, incentives for more efficient appliances and greater penetration of gas, which TXU believes should be considered before moving to interval metering solutions;
- A dynamic system utilising telemetry systems to control devices so that the distributor can switch loads to avoid a local system or mid system peak that is not coincident with a wholesale market pricing peak (suggested by TXU); and
- Time-of-use meters with maximum demand, which L+G believes to be a reasonably practical and cost-effective method of identifying high usage at times of high system load.

B.7.2.5 General comments

Powercor, CitiPower and ETSA Utilities do not have a preference for a particular technology; however, they believe there needs to be standardisation of the interfaces between meters and meter reading devices to ensure meter reading costs do not escalate unnecessarily. These businesses also believe that:

> *[t]he system integration of metrology systems with other network systems, including demand side and outage management systems, would improve efficiencies and facilitate the delivery of innovative tariff products, such as, load control tariffs, load switching tariffs and dial up prepayment options. It is critical that an appropriate balance is reached between innovation and the need for some level of standardisation.*

Integral Energy believes the options presented in the Issues Paper are adequate for this Review and further expansion would only increase complexity with minimal additional value. Country Energy, Energex, Origin Energy, TXU, Intermoco and United Energy expressed similar views.

AGLE believes it is not appropriate for the Review to determine the metering technology that will deliver economic efficiency. Rather, it is the role of the Jurisdictional Regulators to identify the barriers to customers identifying and choosing the metering technology that best suits their circumstances.

AGLE noted that each type of meter has its advantages and disadvantages and believes it should be up to the customers to choose the most efficient metering solution for themselves, and this may well vary between, and even within, different consumer classes.

EziKey agreed that different customers may wish to adopt different metering solutions or other technologies and believes that mandating technological solutions will not further the cause of a competitive electricity market. Rather than mandating a technological solution, EziKey believes retailers should be given every opportunity to develop innovative products.

Business SA believes that the coverage of the demand side management issues is very limited.

B.7.2.6 Comparison of options

Energex, United Energy, Origin Energy and TXU agreed that the options identified in Appendix B of the Issues Paper are appropriate. Specifically, Origin Energy noted that:

> *the Issues Paper appears to have adequately considered a wide range of options related to metering solutions and other technology options.*

Intermoco also considered that the range of metering options discussed is appropriate as a basis for consideration in the Review, but notes that the discussion in Appendix B is inherently deficient in that the consideration needs to be undertaken in the context of a cost benefit analysis.

C&SS also agreed that an 'end to end' cost analysis is required for each option. Specifically, the assessment framework should take into account the specific costs for the establishment, further development and maintenance of metrology procedures, profiling algorithms and customer allocation to a profile, should dynamic profiling be adopted.

Other submissions believed that the comparison of options was not adequate, specifically:

- Outhred believes consideration should be given to meter functionality beyond energy metering and associated economic benefits, as this would strengthen the case for:
  - Electronic metering with provision for measuring key indicators of availability and quality of supply; and
  - Implementing a standard metering functionality across jurisdictions and rolling out complying meters to all end-users;
- Integral Energy believes further consideration should be given to an analysis of the efficiency gains from improvement of power factor. Integral Energy believes a programme to roll out interval or time-of-use metering should include investigation into including power factor functionality, as the magnitude of such benefits could be significant;
- L+G noted that no overseas jurisdictions have embarked upon a wholesale rollout of interval metering to small customers and believe that technological risk should also be considered;
- ActewAGL believes the comparisons need to be revised to take account of actual wholesale purchasing arrangement, rather than the assumption that retailers purchase electricity in the spot market;
- C&SS argued that meters should not be assessed on the basis of direct benefits at the consumer level, as they are required to deliver 'timely interval data' to a number of parties for an efficient and effective NEM. Accordingly, the assessment should consider the meter as part of the 'Industry Infrastructure' required for an 'economically efficient' NEM incorporating a 'truly competitive' wholesale and retail sector; and

- EAG believes that the assessment should link the treatment of regulated distributors' investment with the cost of the electricity market, and that appropriate consideration of these costs would strongly add to the case for a full roll of interval metering with easy-to-use, low-cost, remotely activated, automatic communications and load-management infrastructure.

B.7.3 Deployment options

A number of options for deploying meters were identified and discussed in the Issues Paper. An option for deploying economically efficient metering solutions or other technology may be applied:

Option a To all customers

Option b Only to customers consuming above a determined consumption level, for example, more than the threshold for type 6 metering installations (100 MWh per annum in NSW and 160 MWh per annum in the other jurisdictions)

Option c Only to specified groups of customers based on type of use, for example, to those with high peak loads

The options for deploying economically efficient metering solutions or other technology that have been identified, which can be applied under one of the above scenarios, are as follows:

Option 1 Continue with the existing 'market-based' approach

Option 2 Implement new profiling algorithms

Option 3 'Market-based' approach where all second tier customers are required to install interval meters

Option 4 Accelerated roll out to all customers over a shorter time frame, say 5 years

Option 5 Accelerated roll out to all customers over a longer time frame, say 10 years

Option 6 Accelerated roll out based on a 'new and replacement' policy, that is economically efficient metering solutions are installed for all new and replacement meters

The Issues Paper sought comments as to whether there are other deployment options that should be considered. Each of the deployment options was also discussed within the assessment framework. The Issues Paper questioned whether the discussion adequately considered the issues related to deployment options.

Aurora Energy agreed that there are benefits in providing customers with innovative metering solutions, but believes that market forces should dictate the technology innovation and the timing of the roll out. AGLE, EziKey and L+G also believe that the roll out of economically efficient metering solutions and other technologies should be left to market forces, as mandating a particular metering solution would preclude other options and carries

the risk of stifling innovation. L+G noted that manufacturers cannot economically produce niche products for the small Australian market.

EziKey believes that, given the timeframes required to enact and implement large scale changes, the ultimate result may be the delivery of a technologically redundant solution. Furthermore, the mandating of a technological solution will not further the cause of a competitive electricity market.

PIAC also supported a market-based approach, as it represents the most favourable outcome for the bulk of residential consumers, especially those with low consumption or on low incomes.

Business SA believes that a mandated meter rollout would provide significant volume purchasing advantages and, therefore, that a basic level of compulsion in a rollout is necessary. Business SA suggested this may include changes to planning legislation to provide for the installation of interval metering for either newly constructed buildings or existing buildings undergoing remodelling as a first step.

Ergon Retail believes that an interval meter roll out (accelerated or other) should be undertaken across all jurisdictions as part of a long term objective to deliver more cost reflective pricing, electricity product development and enhanced demand side management. These should be introduced with appropriate rules and education programs.

Nilsen believes there are compelling arguments for an accelerated roll out, including that benefits are realised sooner and deregulation of meter provision / management can be implemented. C&SS suggested that an accelerated roll out be undertaken to reduce the barriers and access the economic efficiencies available from appropriate metering solutions.

United Energy supported an accelerated rollout similar to that proposed by the ESC if there was regulatory certainty regarding metering obligations and cost recovery, and flexibility to implement more cost reflective network and distribution tariffs. Similarly, Powercor, CitiPower and ETSA Utilities agreed that the issues surrounding cost recovery, metering responsibility and ownership require resolution before deployment can be considered.

Intermoco, Email Metering, Centurion, United Energy and EnergyAustralia also supported an accelerated roll out strategy. Email Metering believes the roll out should be mandatory for all customers as this is the only equitable solution.

Ergon Network has the following concerns in relation to a mandated, accelerated roll out:

- It would create a continuing wave of work, as interval meters will need to be replaced every 15 years;
- There are numerous issues associated with legacy installation practices across the NEM, which will require rewiring in many instances; and

- The level of resources required to install the meters, process the paper work for final reads and billing adjustments, updating meter register databases, notifying customers of outages, negotiating with difficult to access customers and following up on customers where the metering box needs to be modified or replaced.

TXU believes the best demand side response overall will be achieved when customers with discretionary loads (i.e. those with peaky loads) are targeted for interval meter installation, assuming appropriate tariffs are available and take up obligations applied. However, TXU agreed that the practical issues may make such an option unworkable. Similarly, Intermoco suggested that the greatest benefits will be achieved by targeting the high energy users first.

While recognising the benefits of an accelerated roll out, Country Energy prefers the gradual roll out of time-of-use meters under a new and replacement strategy (Option 6). Country Energy argued that this approach would involve less risk to the distributor in terms of overall revenue recovery and a more prudent capital expenditure program as compared to an accelerated rollout to a much wider mandated group.

Email Metering also believes it is sensible to purchase interval meters for all new and replacement requirements, as there would be no additional installation costs. Outhred also supports a new and replacement policy for advanced electronic meters.

B.7.3.1 Comparison of options

Origin Energy believes the Issues Paper has adequately considered a wide range of deployment options. However, Origin Energy suggested that geography and demography should also be included as criteria for assessing the deployment options, as demand side opportunities may be greater in some areas, depending on consumer behaviours and other characteristics.

NEMMCO suggested that it may be appropriate to consider network benefits when assessing deployment options. These network benefits may include improved network management, but also the less tangible benefits delivered to all consumers as a consequence of technology implemented for consumers that switch retailers.

ActewAGL noted that the deployment of interval meters would involve replacing meters with a life of 40 years with meters with a life of 10 years, increased data management and processing costs. Furthermore, ActewAGL also has some health and safety issues related to installing new meters in meter boxes with asbestos.

TXU acknowledged the scale efficiencies of a widespread roll out, but believes that:

> *[w]hilst achieving minimum cost per meter change is important, the ultimate decision regarding rollout must be made on a total cost to overall benefits analysis and hence focusing costs to achieve maximum relative benefits is the key consideration.*

TXU also believes that stranded assets will be a certainty, rather than the uncertain risk suggested in the Issues Paper.

B.8 Ring-fencing arrangements

The Issues Paper sought comments in relation to the effectiveness of the jurisdictional ring-fencing arrangements in preventing anti-competitive conduct between the distribution business, retail business and metering business.

There were mixed views as to the adequacy of the current ring-fencing requirements in each of the jurisdictions.

Integral Energy considers that the current arrangements are adequate where the distributor retains responsibility for metering. However, if metering responsibility were to be passed to the retailer, there would be scope for anti-competitive behaviour.

EnergyAustralia supported ring-fencing guidelines similar to those applying in NSW, but noted that not all market participants have embraced the principles to the same extent.

United Energy believes the ring-fencing requirements in Victoria are sufficient to prevent anti-competitive conduct between distributors and their affiliated retail businesses. The approach in Victoria is considered to be a practical approach with due regard to cost efficiency. TXU also believes the Victorian ring-fencing requirements are adequate and, where the distributor provides both contestable and regulated metering services, ensure that there are no cross-subsidies between the different aspects of the business.

Origin Energy believes that the current lack of effective ring-fencing requirements is a barrier to efficiency generally, and submits that:

> *there have been examples of cost allocation methods and the sharing of functional activities that cast doubt on the integrity of the current ring-fencing arrangements in some jurisdictions, despite the legal separation and accounting separation in place at the business unit level.*

Origin Energy suggested that businesses that own both distribution and first tier retailing rights over the same area be required to provide full public disclosure of financial information and cost allocation methodologies.

Ergon Retail believes the ring-fencing requirements in NSW, South Australia and Victoria are not robust enough to ensure the incumbent retailer does not gain an unfair competitive advantage over other retailers. Ergon Retail suggested that the ring-fencing requirements in these jurisdictions be brought into line with those applying in Queensland and the ACT. Ergon Network agreed that the adoption of ring-fencing guidelines that are no more or less onerous than those applying in Queensland should be effective.

Other comments received in relation to ring-fencing include:

- Business SA believes a nationally consistent ring-fencing guideline that separates distributors from metering is a preferred solution as it would provide service specialisation, efficiency and improved transparency;
- NEMMCO stated that experience indicates that significant improvements to retail market business processes are being stimulated by businesses that function in one participant category only. This includes, for example, retailers and metering service providers challenging network business processes associated with connection point management;
- Powercor, CitiPower and ETSA Utilities believe that some form of ring-fencing is necessary given that some market participants may be able to leverage off other markets where they may hold substantial market power. However, it is equally important to ensure the inclusion of ring-fencing provisions does not result in reduced efficiencies through a loss of economies of scale;
- Origin Energy believes the review should also look at the effectiveness of ring-fencing with respect to its ability to prevent anti-competitive conduct at the business-to-business (B2B) level, as independent and second tier retailers already potentially face a severe disadvantage when negotiating with a monopoly business that they don't share ownership of; and
- Country Energy believes that if metering services were opened up to competition, ring-fencing should only apply to the access and communication requirements, and the financial operations of the metering business. Requirements relating to physical, staff and information technology separation are not supported and would be far too onerous, costly and impractical for a regionally based organisation to implement.

C Appendix: Summary of submissions to the Draft Report

A more detailed summary of the submissions to the Draft Report is provided in this Appendix. The submissions are summarised in the order in which the issues are discussed in this Final Report, that is:

- Developing an assessment framework;
- Nationally consistent metrology procedures;
- Responsibility for metering services;
- Meter ownership;
- Distribution and retail tariffs;
- Other legal and regulatory issues;
- Current metering arrangements;
- Ring-fencing arrangements;
- Further review; and
- Proposed Code changes.

C.1 Developing an assessment framework

Elster Metering noted that the draft recommendation was acceptable.

Both PIAC and the ACA believe that social equity should be part of the assessment framework, rather than an optional jurisdictional-specific criterion. ACA believes that:

> *potential for impaired social equity seems to be one of the major potential negative impacts of changed metering arrangements, and this facet should be given more assessment weight and at a national level.*

PIAC believes that the strong suggestion that emerges from this recommendation is that the Jurisdictional Regulators believe it is acceptable for consumers in different jurisdictions to be subject to different consumer protection mechanisms. PIAC believes this to be untenable and notes that:

> *If social equity is to have any meaning at all then it must be taken into account equally by each of the jurisdictional regulators.*

There were divergent views as to the appropriateness of jurisdictional-specific assessment criteria more generally. Origin Energy did not support jurisdictional-specific criteria on the basis that this runs counter to the general trend of regulatory convergence and a national electricity market. Ergon Retail, however, indicated that it has:

> *long been an advocate of the need to balance the quest for consistency across jurisdictions with individual jurisdictional market development and policy preferences.*

Ergon Retail, United Energy and TXU, while generally supporting the draft recommendations, expressed concerns that they were high level and may therefore be interpreted and applied differently by the Jurisdictional Regulators, thus leading to different outcomes in the different jurisdictions. For these reasons, stakeholders called for further clarification on the:

- Definition of efficiency, practicality and equity and priorities attached to these; and
- Requirements for criteria and criteria weighting consistency in sequential reviews.

Similarly, EnergyAustralia also supported the draft recommendation, but noted that it could go further towards Best Practice Utility Regulation in the areas of communication, consistency, predictability and transparency. EnergyAustralia believes it will be important for participants to understand each jurisdiction's approach to weighting, social equity and other jurisdictional-specific factors, and therefore called for the publication of jurisdictional assessment frameworks as soon as possible.

Origin Energy expanded on its submission to the Issues Paper, stating that 'institutional' barriers, as a form of existing government intervention, must also pass the market failure test if they are to remain. In its view, any regulatory or institutional restriction on a customer's ability to choose price or level of service represents a barrier requiring assessment (in net benefit terms).

AGLV believes the assessment framework should focus on barriers to customer choice in metering, rather than economic efficiency, as it is the removal of barriers to choice that will lead to more efficient outcomes.

In contrast, C&SS believes the assessment framework places too much emphasis on the consumer choosing a metering solution rather than being the ultimate beneficiary from market participants having access to relevant and timely interval meter data.

C.2 Nationally consistent metrology procedures

C.2.1 Extension of Code Chapter 7 to first tier metering

AGLV, Australian Inland, Elster Metering, EnergyAustralia, Integral Energy and TXU explicitly supported the extension of Code Chapter 7 to include first tier metering.

United Energy also supported this draft recommendation, but only on the condition that there would be no changes to the existing obligations that would require systems and processes to be updated. United Energy argued that:

> *Even a reduction in obligations can result in costs to modify systems and any proposed changes must be fully evaluated to ensure no disadvantage to individual participants.*

C.2.2 Development of a single national Metrology Procedure

Most of the submissions to the Draft Report supported the development of a single national Metrology Procedure[103]. Interested parties commonly believe that this recommendation would reduce the potential for confusion and misunderstanding potentially resulting from having multiple metering documents. For example, Centurion notes:

> *Centurion has long held the view that the current excess of documents has thwarted intending participants. Unless versed in the industry for several years, it is virtually impossible to untangle the web of roles, accountabilities, regulations, rules, processes, guidelines, interfaces and transactional specifications to identify opportunities and enter the market. Any simplification of the rules and documentation can only be of ultimate benefit to consumers.*

Country Energy believes that the draft recommendation would:

> *lead to reduced costs and administration for participants, support competition across state borders, deliver economies of scale and efficiencies in metering activities, and eliminate duplication of obligations covered in various instruments and the National Electricity Code.*

Conditional support for this draft recommendation was provided by some submissions. For example, Powercor and CitiPower support the draft recommendation provided an appropriate mechanism is established to provide for the recovery of any additional costs incurred. Similarly, United Energy is concerned that a review of other related procedures may impact on systems and processes resulting in additional costs to consumers.

Ergon Retail also supports the draft recommendation, but believes that

> *jurisdictions that are still developing their metrology framework should not be forced to conform to the metering decisions taken by other jurisdictions, at the expense of implementing policy that delivers optimal outcomes.*

Australian Inland and Ergon Retail explicitly support the exclusion of non-technical provisions, such as consumer protection, from the single national Metrology Procedures, on the basis that these were politically sensitive issues and there were likely to be divergent opinions on these matters between the jurisdictions.

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[103] See, for example, the submissions to the Draft Report from AGLV, Australian Inland, Centurion, Country Energy, Elster Metering, Email Metering, Energy Australia, Integral Energy, NEMMCO, Origin Energy, TXU and Powerdirect.

However, the ACA believes consumer protection should also be nationally consistent and is therefore concerned about this draft recommendation:

> *In one view it is a good thing, particularly for states that have achieved a reasonable level of consumer protection. However in the context of a drift towards a national regulatory framework, it also smacks of consigning consumer protection to a residual category along with social equity. Consumer protection measures vary, and will deliver a patchy result. The pressing issue for us is the transition of consumer protection from a state-by-state basis to create a national highest common denominator network of protection for the whole of Australia.*

There was also support for the use of tables to identify jurisdictional differences in the Metrology Procedures. However, support for this aspect of the draft recommendations was conditional for some parties making submissions:

- Origin Energy and TXU believe that the aim in the long term should be to minimise the extent of jurisdictional differences;
- Ergon Retail seeks clarification on who is responsible for managing the technical aspects of jurisdictional policy differences (e.g. technical aspects of profiling) and which issues are considered policy; and
- Powerdirect believes that any derogation 'should take into account real and factual jurisdictional differences rather than self serving submissions which would not benefit the customer in general'.

NEMMCO identifies two additional jurisdictional policy areas which should be included in the tables identifying jurisdictional differences. These are:

- First-tier metering data to be used within the profile for each jurisdiction; and
- Matters related to re-selling within embedded networks.

Ergon Retail believes the issues to be covered in the jurisdiction-specific tables need to be identified, and suggests that the following policy areas be included:

- Interval meter roll out timing;
- Distributor ownership of large first tier customer metering;
- Distributor responsibilities; and
- An obligation to list metering services, as distinct from DUoS charges.

Origin Energy suggests that the removal of duplicated or inconsistent obligations in other NEMMCO procedures and/or the Code be extended to regulations and guidelines under jurisdictional regulators (e.g. the Electricity Customer Metering Code). Further, where differences remain, it should be because there was not a net benefit in aligning the requirements.

C.2.3 Giving NEMMCO responsibility for the single national Metrology Procedure

AGLV, Country Energy, Australian Inland, Elster Metering, EnergyAustralia, Integral Energy and TXU support giving NEMMCO the responsibility for the single national Metrology Procedure.

Subject to the Jurisdictional Regulators' final recommendations, the NEMMCO Board has endorsed NEMMCO providing ongoing operational support for the new NEM functions. NEMMCO understands that this includes a role as Metrology Coordinator for the single national Metrology Procedure.

C.3 Responsibility for metering services

While submissions[104] commonly supported equitable metering arrangements across first and second tier customers, there were divergent views on the recommended metering services arrangements for 'large' and 'small' customers, and the unbundling of metering services charges from DUoS charges.

C.3.1 Metering services for large customers

AGLV, Australian Inland, Centurion, EnergyAustralia and TXU support the draft recommendation to expand contestable metering to all large customers. Australian Inland believes:

> *[t]here is competitive inequality between equivalent consumption customers in the market depending whether they are first or second tier, and whether they have an interval or accumulation meter installed. All large customers should have the same metering obligations applied, with the metering cost applied to their retailers (and onto the customers) irrespective of who their retailer is.*

Ergon Retail also supports this draft recommendation, but seeks clarification from the Jurisdictional Regulators that this recommendation does not apply to large first tier customers who have not moved to market based retail contracts and are consequently subject to regulated retail tariffs.

ETSA Utilities believes that the current arrangements for large second tier customers act as a barrier to switching, and provides the following reasoning:

> *It has been our experience in SA that where a retailer either takes over as the responsible person from another retailer or the distributor they change the metering*

[104] See, for example, the submissions to the Draft Report by AGLV, Australian Inland, NEMMCO and TXU. No submissions explicitly opposed this recommendation.

> *installation even where the installation is NEC compliant. This appears to increase the costs to customers as the retailer must recoup this cost.*

To minimise costs, ETSA Utilities considers that the distributor should obtain the meters, with the meters chosen to provide maximum flexibility to provide additional services to customers. This option would still enable the retailer to choose the preferred Meter Data Agent.

Powerdirect also recommends the removal of restrictions on who may be a Responsible Person to promote the adoption of economically efficient metering solutions.

Centurion notes that the Draft Report[105] (footnote 48) refers to small customers that may have chosen to install type 4 metering but the recommendations make no explicit statements that type 4 metering will remain contestable across small customers also. In fact, under the recommendations as drafted by the Jurisdictional Regulators, type 4 metering would be disallowed below the set threshold. This is not the case now and is a fundamental change that prevents smaller customers enjoying the benefits of future technological innovations

C.3.2 Definition of large customers

Australian Inland, Country Energy, EnergyAustralia and Origin Energy support achieving a uniform definition of a 'large' customer. Country Energy believes this would facilitate competition across jurisdictions, while reducing compliance and administration costs.

Country Energy and TXU both suggest setting the threshold at 160 MWh per annum. Country Energy believes this appropriate

> *given the lack of market churn to date for customers consuming 100 – 160 MWh per annum and the fact that NSW is currently the only jurisdiction to have moved below the 160 MWh per annum threshold.*

TXU believes there should be some certainty provided around the threshold to reduce the risk that the definition of large becomes progressively smaller, thereby subjecting distributors to higher risk of asset stranding.

EnergyAustralia believes the threshold should be set by meter type:

> *EnergyAustralia believes the current metrology review is the right time to bring the NSW Metrology threshold mechanism into harmony with the rest of the NEM by tying it to meter type rather than the annual consumption level. The [distributor] should be responsible for all customers with type 5 or 6 meters rather than all customers below 100 MWh per annum. Doing so would achieve greater national consistency in both mechanism and customer size than the current arrangements.*

[105] Jurisdictional Regulators, *ibid*, Draft Report, p.44

This implies that the threshold would be set at 160 MWh per annum, consistent with Victoria and South Australia.

Origin Energy queries simply applying a threshold based on the current consumption thresholds, as there is a substantial tranche of customers consuming less than 100 MWh per annum for which there is an 'upside with the potential for more innovative metering services'. Origin Energy believes that:

> *[i]f a threshold is going to be used to determine which customers receive competitive metering service arrangements and which customers receive monopoly metering service arrangements, its rationale ought to be carefully considered (and quantified to the extent possible) before a decision is reached.*

Ergon Retail believes that setting a uniform threshold for 'large' customers would complicate retailers' and distributors' obligations under the Metrology Procedures for retailers and distributors that service customers in the ACT and Queensland. For this reason, Ergon Retail recommends that the jurisdictional policy tables in the single national Metrology Procedure be used to define the 'large' customer threshold in each jurisdiction.

AGLV sought clarification as to how jurisdictions will define a 'large' customer, as it was not clear from the Draft Report whether the threshold would be based on consumption or type of metering installation.

Centurion points out that distributors currently have exclusive responsibility for metering installation types 5 – 7, rather than 'small' customers. Under the Draft Recommendation, distributors' exclusive responsibility would change to include all 'small' customers. Centurion believes that any correlation between the original tranche thresholds and the application of specific metering installations is purely coincidental.

Centurion believes that the defining factor should be the method of data collection, rather than the size of the customer, and strongly urges the Jurisdictional Regulators to abandon using the terms 'large' and 'small' customers. Centurion believes using artificial thresholds only serves to stifle competition and innovation, to the eventual detriment of all customers.

C.3.3 Metering services for small customers

The distributors[106] generally, as well as the ACA and PIAC, support the draft recommendation that distributors should be responsible for metering services for all 'small' first tier customers and second tier customers with metering installation types 5 – 7.

TXU's view, which was similar to the views expressed in other submissions supporting this recommendation, is that:

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[106] See, for example, the submissions to the Draft Report by Australian Inland, Country Energy, EnergyAustralia, Integral Energy, Powercor, CitiPower and TXU.

> *the certainty provided by this action will enable [distributors] to invest in metering assets with confidence of recovery of investment. In turn this will enable customers to enjoy the benefits of economies of scale for metering and associated services and allow meters and services to be costed with full engineering life time as the basis and with minimal allowance for meter removal, retesting, storage, etc. This risk reduction is also appropriate given the regulatory assumption that [distributors] are low risk businesses.*

Furthermore, Powercor and CitiPower argued that, as many of these services are sourced through competitive tender arrangements, the benefits of competition in metering are not eliminated by making distributors responsible for metering services for small customers.

Origin Energy believes that, while the competitive sourcing of meter service providers may go some way to driving an efficient cost (price) for such services, there is no competition driving quality or level of innovation. Origin Energy believes only customer choice can determine innovation efficiently.

Powerdirect and Centurion question why the protection of a regulated monopoly is required if claims that distributors are already efficient are true. Centurion believes that if they are efficient, that there should be no risk in opening up metering services to competition.

Centurion also argues that the statement that distributors maintain economies of scale does not hold true. Rather, it is independent service providers that operate over much larger geographic areas and across multiple utilities that have the economies of scale.

Australian Inland believes that distributor responsibility for metering services will also allow for value-added services at minimum cost that may not otherwise be available in a competitive environment focused on energy settlement only.

AGLV, Centurion, Origin Energy and Powerdirect are strongly opposed to this draft recommendation. Specifically, AGLV believes:

> *[t]he arguments for contestability are that the market is the most effective way of delivering the most efficient outcome for customers. That is, competition will ultimately ensure the lowest cost outcomes. Where there remains a monopoly service, there is no incentive to reduce costs. Although it can be argued that regulation can be used to reduce the price for monopoly service, regulatory intervention is a very crude and blunt instrument that can lead to market failure itself.*

AGLV, Origin Energy and Powerdirect are also strongly opposed to amending the Code to reflect distributor responsibility for metering services for small customers, and believe that market forces should determine meter ownership for all customers. AGLV believes this is against the Code's intent (i.e. that economic efficiency will be achieved by allowing customers to make choice), while Origin Energy believes this:

> *implies that there will never be an efficiency case for removal of this barrier to competition, which sends a signal to meter service providers that a market cannot emerge (despite the possibility of technology improvements and greater potential gains for smaller customers).*

Further, Origin Energy believes that the recommendations relating to metering services and meter ownership 'cater to the interests of distributors at the expense of customers' interests'. It believes that distributors should remain the default responsible party, with retailers and customers free to elect alternative meter service providers.

C.3.4 Unbundling of metering charges from DUoS charges

Distributors (Powercor, CitiPower, Country Energy, EnergyAustralia, ETSA Utilities, United Energy) and consumer advocates (ACA, PIAC) believe that metering service charges should not be unbundled from DUoS charges. The reasons provided include:

- It is unnecessary and counter-intuitive given distributor responsibility for metering services for small customers (Powercor and CitiPower, Ergon Retail, United Energy);
- Smearing of charges for interval metering would be easier if charges were recovered through the DUoS charge (Powercor and CitiPower); and
- It will be a costly and complex exercise, which will have minimal impact or benefit on customers' bills (ACA, Country Energy, EnergyAustralia, ETSA Utilities, PIAC, United Energy).

The ACA believes that:

> *the average consumer will simply be outraged that companies want to charge them for measuring how much they are going to charge them – most reasonable people would see this as a simple cost of doing business that should be absorbed by the firm.*

This view was explicitly supported by PIAC.

Country Energy notes that metering charges could be unbundled from DUoS charges, but questions the benefit of doing so in light of the potential costs, namely:

- Specification changes to billing and finance systems;
- Establishment of administration processes;
- Customer education;
- Tariff establishment and adjustment;
- Customer exposure to cost reflective metering charges (price shocks);
- Geographic variation in price; and
- Liaising with numerous meter providers and meter data agents.

These costs were also highlighted by TXU and Integral Energy, who believe these costs could be a barrier to retail competition.

However, several submissions (Elster Metering, Origin Energy, Powerdirect) strongly believed that metering charges should be unbundled from DUoS charges. Elster Metering and Origin Energy support the unbundling of metering charges as it will facilitate transparency and the ability of customers to 'shop-around'. Origin Energy believes there is little scope for efficiency improvements in metering services without such transparency.

ETSA Utilities believes that metering service charges should be unbundled for large, contestable customers to enable customers to compare costs, but it sees little value in unbundling charges for prescribed services.

ETSA Utilities also notes that it already unbundles charges for other than prescribed metering services (for example, monthly meter reading costs in excess of quarterly meter reading costs are charged as an excluded service). Integral Energy believes such a charging system would satisfy the goal of providing customers the necessary information to make an appropriate choice of metering. TXU recommends further analysis be undertaken on the relative costs and benefits of unbundling metering charges and providing specific charges for non-standard metering.

TXU would reluctantly support the unbundling of charges on the basis that the determined 'fair and reasonable' charges are truly cost reflective and take into account metering type, data management costs and geographical costs.

C.3.5 Other comments

Centurion believes that the three types of metering services (i.e. meter provider services, data management services and meter ownership) can be separately regulated – or not regulated, given that Centurion supports competition for each type of service. Therefore, Centurion urges the Jurisdictional Regulators to consider its recommendations separately for each of these three service areas.

C.4 Meter ownership

While submissions[107] commonly supported equitable metering arrangements across first and second tier customers, there were divergent views on the recommended metering services arrangements for 'large' and 'small' customers, and the unbundling of meter provision charges from DUoS charges for 'small' customers.

[107] See, for example, the submissions to the Draft Report by AGLV, EnergyAustralia, NEMMCO and United Energy. No submissions explicitly opposed this recommendation.

C.4.1 Meter ownership arrangements for large customers

AGLV, Centurion, Elster Metering and EnergyAustralia support the draft recommendation to extend contestable meter ownership to large first tier customers. Further, Centurion recommends a Code change requiring meter ownership to remain open to competition for metering types 1 – 4.

Ergon Retail also supports this draft recommendation, but seeks clarification from the Jurisdictional Regulators that this recommendation does not apply to large first tier customers who have not moved to market based retail contracts and are consequently subject to regulated retail tariffs.

Powercor and CitiPower note that it will also be necessary to address ownership of associated equipment, such as CTs and VTs.

Australian Inland argues that distributor ownership of meters should be extended to large first tier customers also, for the same reasons for distributor ownership of meters for small customers (i.e. economies of scale in purchasing, meter reading, consistency in programming and asset management).

United Energy believes that the draft recommendation to allow jurisdictions to determine the meter ownership arrangements to apply to large first tier customers in the short term may lead to arrangements that are not equitable between large first and second tier customers. United Energy believes it may be more prudent to make a clear decision and allow a transition path.

C.5 Distributor ownership of meters for small customers

The distributors[108] generally, as well as PIAC, support the draft recommendation that distributors should retain ownership of meters for all 'small' first tier customers and second tier customers with metering installation types 5 and 6.

Australian Inland believes that this is required to ensure economies of scale in purchasing, meter reading, consistency in programming and asset management. Ergon Retail believes this is necessary:

> *to ensure that non-standard meter types are not used, meter churn and stranded costs are limited, meter costs are kept low and barriers to entry and anti-competitive behaviour are minimised.*

In relation to prepayment metering specifically, United Energy considers that:

[108] See, for example, the submissions to the Draft Report by Australian Inland, Country Energy, EnergyAustralia, Ergon Retail, Integral Energy, Powercor, CitiPower, TXU and United Energy.

> *the distributor is best placed to provide such metering to ensure that the customer is not locked into prepayment metering technology at any time and maintains the ability to choose alternative retailers whose service offering may best meet their needs at a particular period in time.*

AGLV, Centurion, Elster Metering and Powerdirect were strongly opposed to this draft recommendation, and generally believed that meter ownership should be open to any party. Specifically, Powerdirect believes that opening meter ownership to competition would promote the adoption of economically efficient metering solutions and provide the most commercial flexibility on the structure of the market arrangements for customers. It does not believe the cost and convenience arguments to be relevant or correct. AGL believes that removing customer choice in metering in perpetuity is inconsistent with the Code's intent and believes that competition will ultimately ensure the lowest cost outcomes.

Centurion rejects arguments that it may be difficult to find an alternative party willing to own meters, as it itself is prepared to do so. Further, Centurion suggests a Code change requiring meter ownership to be opened up to competition for metering installation types 5 and 6, or alternatively for meter installation types 5 and 6 where a connection point is to be converted to remotely polled interval metering.

Centurion recommends amendments to the Code requiring that the role of 'Meter Owner' be recognised and that the 'Meter Owner' appoints the Meter Provider (given the current practice in the market for the owners of metering assets to outsource work to third party service providers).

C.5.1 Obligation to provide non-standard meters

Country Energy believes that distributor ownership is not a barrier to customer choice in metering technologies, as customers are not restricted to the distributor's standard meter:

> *While distributors may have standard meters for each type of meter technology, to gain efficiency in maintenance and support arrangements with manufacturers, distributors also have access to a wide range of metering technology that would ensure all customers' needs could be met.*

Similarly, United Energy believes the distributors' standard offerings should provide a range of functional meter offerings utilising the distributors' preferred suppliers.

Other distributors expressed concerns about this aspect of the draft recommendation:

- Australian Inland believes this should not be imposed, particularly for prepayment metering technology and/or where access to the meter could be expensive or time consuming;
- Powercor and CitiPower noted that such alternative metering is likely to incur higher costs which will need to be reflected in metering charges;

- EnergyAustralia believes the recommendation needs to clarify what constitutes reasonableness, and suggests reasonableness guidelines be developed that reference jurisdictional and distributor installation rules and industry based metering standards;
- EnergyAustralia argues that a fragmented customer approach may undermine the ability to introduce specific technologies, such as automated meter reading and power line carrier, which require economies of scale to be successfully implemented; and
- United Energy believes this obligation should not extend to one-off metering requests, as the distributor is ultimately responsible for technical and regulatory compliance.

AGLV and Origin Energy argued that this recommendation was not a substitute for contestability. AGLV believes that this recommendation would place all the risks on the distributor, whereas the risks would be shared between the customer and supplier in an open market environment. Origin Energy believes it fails to impose a commercial impact on distributors.

Elster Metering notes that:

> *[t]he extent to which a meter owner is exposed to a 'stranded asset' risk is related to the type of meter which he chooses to install. Such choices would be based on commercial assessments at the time of acquisition of the assets. These assessments and risks are integral components of a free market.*
>
> *In a truly competitive market, no customer, large or small should be barred from enjoying the benefits of competition simply because his prescribed meter owner has installed a meter which has inadequate functionality to meet the operational requirements of an evolving market.*

Australian Inland suggests it may be appropriate to allow for retailer ownership of a meter where the retailer requests a meter that is not recommended by the distributor.

Australian Inland recommends that prepayment meters be considered a separate type of meter in the NEM. Prepayment meters have been successfully tested in a number of jurisdictions, and should not be overly regulated, but perhaps excluded from the general responsibility and ownership obligations applying to standard metering.

C.5.2 Unbundling of meter provision charges from DUoS charges

Centurion fully supports this recommendation, as it believes this is an effective way to stimulate competition amongst service providers. Centurion also believes metering charges should be unregulated as there is ample opportunity for other parties to compete against the distributor. Other recommendations are:

- Amendment of the Code to remove the inclusions contained in clause 7.3.6(a) with the addition of a new provision stating that each participant must cover its own metering data costs; and
- Introduction of a nomination process between the Financially Responsible Retailer and Distributor, whereby both must agree to the MDA selection based on previously negotiated contracts and pricing structures.

EnergyAustralia, Ergon Retail and ETSA Utilities did not support this recommendation for the same reasons as outlined in relation to metering services.

C.6 Distribution and retail tariffs

Submissions[109] commonly agreed that the current constraints on distribution and retail tariffs are a barrier to the adoption of economically efficient metering solutions and other technologies, and support this draft recommendation. Other reasons for supporting this draft recommendation are that it is required to:

- Provide customers with choice in their consumption (AGLV);
- Facilitate demand side management (Australian Inland, Country Energy); and
- Allow the development of innovative pricing structures that are efficient and cost-reflective (Country Energy).

Centurion notes that the current restriction has resulted in little price variation, with most retailers competing on branding initiatives and short-term incentives. Centurion believes that easing retail tariffs constraints would stimulate price competition necessitating the need for innovative metering and:

> *the best way for Regulators to achieve the* dual *desired outcomes of tariffs which support demand side management and economically efficient metering is to gradually ease Retail tariff restrictions by sector (eg. Commercial -v- residential) and tranche.*

However, Centurion does not support unregulated distribution tariffs, as there is no possibility of competition for distribution services within a distributor's geographic area.

EnergyAustralia and TXU believe it is critical that tariff issues be resolved prior to any mandated rollout of efficient metering solutions. Specifically, TXU is of the view that:

> *any mass roll out undertaken without resolving the Retail pricing issues would fail the high level criteria set out in this Draft Report because economic efficiency through productive, allocative, dynamic efficiency will not be achieved if businesses are unable to expose customers to the true cost of their behaviour.*

[109] See, for example, the submissions to the Draft Report by AGLV, Australian Inland, Centurion, Country Energy, EnergyAustralia, Powercor and CitiPower, TXU and United Energy

PIAC does not believe this Review should be concerned with retail tariffs, distribution revenues or the structure of tariffs. PIAC points out:

> *prices are a separate issue from the meters used to measure consumption. Meters are used to derive a cost for consumption incurred by individual customers and make it possible to construct bills for payment. Of themselves, meters cannot create competition. Yet, the response of the Joint Review on this point reveals an attitude with approaches the fetishisation of competition.*

The ACA believes that changes in metering arrangements must be coupled to consumer protection. There should be no 'real-time' tariffing of consumers; there must be price smoothing.

Other comments made in relation to distribution and retail tariffs include:

- Powercor and CitiPower believe that, to promote efficiency, the report should be more forceful in proposing relaxation of the current constraints on distribution and retail tariffs;
- Centurion does not consider the recommendations regarding distribution and retail tariffs to be clear or meaningful;
- EnergyAustralia believes that, where the cost-benefit case has been made, innovative tariffs such as time-of-use pricing should be applied by default to franchise customers; while
- United Energy believes political considerations regarding tariffs should be dealt with through other means, such as measurable and transparent community service obligations.

C.7 Other legal and regulatory issues

C.7.1 Non reversion policies

C.7.1.1 Non reversion policy

Australian Inland, Centurion, Elster Metering, Email Metering, EnergyAustralia, TXU and United Energy support the recommendation that once installed, interval meters should not be replaced with accumulation meters. Ergon Retail also supports this recommendation, but only for jurisdictions where full retail competition has been implemented.

Australian Inland expects that, over time, the cost and reliability of interval meters would be such that accumulation meters would cease to be installed.

AGLV and Origin Energy both oppose this recommendation on the basis that customers should be free to determine the choice of meter and the manner in which it is read. AGLV

believes this recommendation is inconsistent with the Code's intent that economic efficiency will be achieved by allowing customers to make choices, and suggests that instead distributors and retailers be given sufficient flexibility to set tariffs that reflect the true cost of the metering installation.

C.7.1.2 Threshold for reading an interval meter as an interval meter

ACA, Australian Inland, Elster Metering, Email Metering, PIAC, Powercor, CitiPower and TXU support the recommendation that interval meters may be read as accumulation meters below a given threshold of consumption. The ACA believes this aspect of the draft recommendations is important because it is the premises, not the customers that are metered for electricity consumption:

> *When the customer changes, then the premise's metering must change to reflect the choices, status and circumstances of the incoming consumers.*

EnergyAustralia supports this aspect of the recommendation, but sees a need for greater jurisdictional 'granularity' in setting the thresholds and for more certainty for distributors to ensure cost recovery. PIAC is critical of the draft recommendation to allow Jurisdictional Regulators to set thresholds for each jurisdiction. It suggests it is difficult to understand why a threshold chosen in one jurisdiction cannot be appropriate in the others.

A number of submissions were opposed to this recommendation, albeit for different reasons:

- AGLV, Origin Energy and Integral Energy believe that customers should be free to determine the manner in which their meters are read; while
- Centurion, EnergyAustralia, Ergon Retail and United Energy believe that interval meters should be read as interval meters.

Integral Energy also believes that allowing customers to choose how their meter is read would avoid the creation of unnecessary cost impediments to customers adopting time-of-use pricing. Integral Energy suggests that such a policy could be reviewed when there is a sufficient penetration of interval metering to convert to interval data collection. Further, this policy could be implemented by either removing the requirement to collect interval data above a certain threshold or by requiring the threshold to be aligned to any mandated interval meter roll out.

Centurion does not support this aspect of the draft recommendation on the basis that it:

> *promotes inertia in the effective use of data to achieve demand side management and creates uncertainty regarding effective metering investment strategies.*

Ergon Retail also believes that interval meters should be read as interval meters. However, it is cognisant of the transitional issues associated with interval meter roll outs and therefore recommends jurisdictions, as part of a replacement or roll out strategy, place a sunset on

allowing interval meters to be read as accumulation meters. Ergon Retail believes this will ensure that jurisdictions:

- Establish the appropriate tariffs and regulatory framework under which to manage interval meter customers; and
- Implement the accelerated rollout of interval meters as soon as possible, thus minimising equity issues between customers. A sunset date of July 2008 is recommended.

EnergyAustralia believes a reversion policy is inextricably linked with interval meter roll outs and their underlying economic rationale. Alignment must therefore be maintained between reversion levels and interval meter roll outs. Further, EnergyAustralia recommends that reversion thresholds be set on a network area basis in consultation with the relevant jurisdictional regulator.

C.7.2 Technical metrology issues

C.7.2.1 Storage of, and access to, metering data

AGLV supports any actions that will reduce the cost of metering and will foster customer choice.

EnergyAustralia believes current arrangements for data storage and access to metering data are satisfactory. It believes any decisions relating to Meter Data Providers should remain with the Responsible Person and that NEMMCO should not be able to unilaterally determine data storage and access requirements.

Centurion notes that market participants, as competitors, seem unwilling to explore avenues to improve data integrity and introduce storage efficiencies. It suggests that this has led to data costs being significantly higher than they need to be, and that this effect will be exponential with interval metering data. Centurion also recommends that NEMMCO be immediately constrained from providing second tier interval data to the Local Retailer.

C.7.2.2 Technical metering standards

Elster Metering believes:

> *the enforcement of unique Australian metering standards has a diminishing potential to inhibit the sales of meters available globally as Australian Standards increasingly incorporate IEC requirements.*

TXU notes that the takeover of Nilsen Technologies by Email Metering may make the adoption of international standards necessary in order to ensure sufficient competition in the Australian meter market. Otherwise, a seller's market rather than a buyer's market may

arise. It believes this is particularly relevant if a mandated roll out of interval meters is considered.

However, Email Metering argues that the emergence of at least two interval meters from overseas suppliers proves that Australian meter standards are not a barrier to entry for foreign meter suppliers.

United Energy believes that Total Measurements Victoria and the National Measurements Act may act as a barrier to the adoption of economically efficient metering. Particularly the need to re-certify meters once they are removed from a site is an incentive to avoid unnecessary meter churn. United Energy believes NEMMCO and industry are best placed to comment on the barriers these regulation create; however, changes to these requirements are a matter of policy and would be best managed by government.

C.7.3 Other legal and regulatory barriers

Elster Metering, TXU and United Energy support the recommendation to review the provisions in the Code for metering installation types 5, 6 and 7. TXU believes this is appropriate, as part of the Metrology Procedure review, to ensure that the requirements for type 5 meters are in line with the materiality of the installations that are being metered.

Despite supporting the recommendation, United Energy is

> *concerned that actions proposed as an outcome of any such review should not impose obligations on participants to unnecessarily alter or amend systems and processes. Where any change is considered necessary there must be a full and transparent assessment of the cost-benefit through industry consultation and agreement.*

In relation to other legal and regulatory barriers, Centurion believes that the meter provider accreditation requirements under the Code are a barrier to competition, as the accreditation process is an 'expensive exercise', as well as being quite technical. Centurion recommends the Code be amended requiring all third party service providers that actually perform metering installation, maintenance and repair work be accredited as Metering Providers.

C.8 Current metering arrangements

C.8.1 Cost benefit assessment of interval meter roll out

The submissions[110] generally supported the draft recommendation for the jurisdictions to undertake an assessment of the costs and benefits of rolling out interval meters prior to any such roll out. Specifically, TXU notes:

> *While TXU agrees that benefits are shared across a number of participants and this may represent a barrier to economically efficient metering, regulators should not intervene without a high level of certainty that society will enjoy a net benefit.*

EnergyAustralia, Ergon Retail and Email Metering suggest that the Jurisdictional Regulators also set a timeframe for such a review to be completed. EnergyAustralia suggests a 'near-term' timeframe in order to accelerate the roll out of time-of-use technologies and increase regulatory predictability, consistency and transparency. Email Metering also suggests a timeframe is required to provide regulatory certainty. Ergon Retail suggests a date of 1 July 2005 for completion of the assessments.

Origin Energy believes this analysis should be conducted on a national basis and therefore proposes that the Australian Energy Regulator, once established, would be in the best position to conduct the analysis.

Bayard believes that a mandated roll out should commence immediately, and argues that there are four factors leading to this conclusion:

- Infrastructure imperatives: as electricity demand becomes 'peakier', many distribution networks across the NEM are becoming constrained. Until interval meters are in place, it will be difficult to harness the many cost-effective demand side alternatives that have been identified in a plethora of technical assessments during the past decade;
- Technology developments: the technologies available to service smart metering needs have increased significantly, deployment has grown and prices for both hardware and communications have reduced dramatically. This will improve further with scale;
- Regulatory responsibility: regulatory intervention would be welcomed by business as most business prefer regulatory clarity and national consistency to ambiguity, uncertainty and shifting goal posts. A national mandatory interval meter roll out would provide this sector with clarity to reduce investment risk and proceed with business development; and
- International experience: there is increasing experience globally in demand side response as well as recognition of the importance of equipping power users with interval meters.

[110] See, for example, the submissions to the Draft Report by ACA, Powercor, CitiPower, EnergyAustralia, Ergon Retail, Origin Energy, PIAC, TXU, Email Metering and United Energy.

The ACA believes that the electricity network system should be designed to meet the needs of the customers, rather than forcing the customers to change demand to meet the constraints of the system:

> *The intolerance of peaks or 'peak aversion' can be seen as a form of mental accounting, where the efforts of the human mind are at odds with the way the world really works ... The way to efficiently and effectively meet a peak demand is to create sufficient capacity to service it. Peaks exist because that is the way humans behave in certain circumstances, and markets exist to serve consumers, not consumers to service markets.*

The ACA believes this applies to air conditioning use also. That is, the supply system needs to meet consumers' requirements, including cooling on hot days, even if that is a challenge for the industry.

C&SS notes that no formal assessment of the likely economic efficiencies of the alternative metrology options and associated infrastructure has been or will be undertaken as part of this Review. Further, no assessment of the 'net public benefit' resulting from retention of the current arrangements when compared to the known and identified alternative metrology options has been or will be undertaken.

C&SS is of the view that the timely delivery of relevant metrology data is critical for such outcomes as:

- Management of price risks inherent in the wholesale market;
- Avoidance of material financial impacts from the settlement process on a new entrant retailer under the current arrangements in settlement of the wholesale market (this is calculated in the $ millions);
- Development of relevant derivative products and markets;
- Differentiation of tariffs in the retail market-based on the above;
- Development of service and tariff orders with customers based on agreed load levels (specifically discretionary load) allowing informed customer choice;
- Improved management of network assets (interestingly, the payback period of 4 years for the cost of the Italian metering infrastructure is understood to be based on this outcome alone!); and
- Development of Network tariffs that recognise discretionary load behaviour.

C.8.1.1 Metering technologies

The views expressed in the submissions varied as to the appropriate metering technology to consider.

AGLV was strongly opposed to any attempt by the Jurisdictional Regulators to determining and then mandating the metering technology that will deliver economic efficiency. Rather, AGLV believes the role of Jurisdictional Regulators is to identify the barriers to customers identifying and choosing the metering technology that best meets their needs.

AGLV also believes that opportunities for improving the use of profiles should be investigated. However, Ergon Retail believes that competitive and efficiently operating retail markets will not be achieved under the accumulation metering with profiling arrangements. Ergon Retail argues that the profiling solution fails to provide appropriate signals to consumers and creates cross-subsidies within and between customer profiling segments. For these reasons, Ergon Retail believes that the adoption of interval metering is a vital step in the evolution of the NEM.

However, the ACA believes that:

> *Interval metering and subsequent billing for variable usage patterns is a species of price discrimination. Price discrimination is something of a holy grail for economists and is regarded as the mark of an efficient market. However analysis from a behavioural economics perspective shows that consumers generally detest the consequences.*

Elster Metering believes that interval meters are the best and only metering technology for measuring load patterns, which can vary dramatically. However, Elster Metering notes that it has been demonstrated that time-of-use metering, using four carefully selected time-of-use periods, enables the reliable synthesis of demand patterns, without the burden of a large volume of interval meter data.

AGLV believes that there is also a place in the market for prepayment metering, but that there is currently a barrier to the adoption of this metering technology, as these meters are classed as type 5 or 6 meters, which can only be provided by distributors.

C&SS argues that the draft recommendations prevent an integrated network metrology, communication and data management model (such as the Italian model), which provides two-way communications, which facilitate superior economically efficient services, and a much broader range of services than accumulation meters. C&SS understands that a solution equivalent to the Italian solution for the Australian NEM would have an annualised installed cost of between AUD $15 - $20 per customer (based on a 15 year model, with a discount rate of 7%).

The ACA argues that it is misleading to state that a specific metering solution will send a price signal to consumers. The ACA believes that providing price signals to consumers would have to be tempered with the cost impacts such an approach would entail. It is basic to consumer protection that a person should know costs before purchase. If the intention is to influence consumers in a dynamic market, then their right to be informed about price before committing to usage must not be ignored.

C.8.1.2 Deployment approaches

Bayard, Email Metering and Ergon Retail support a mandated roll out of interval meters across all customers. Bayard believes this would allow financial and environmental benefits of demand side options to be realised without further delay, while Email Metering believes it is not only cost effective, but the only way to achieve a fair and equitable retail market.

Ergon Retail believes that an accelerated roll out of interval meters should commence as soon as is reasonably possible, with priority given to churned, churning or prone-to-churning customers. In the meantime, Ergon Retail believes that the installation of accumulation meters should cease, to ensure that any consolidated roll out of interval meters is less cumbersome.

Based on its experience with manually read interval meters, EnergyAustralia also recommends a mandated interval meter roll out across the market. However, EnergyAustralia suggests that the impact of interval meter data be limited to the network segment for the time being. It believes this will:

> *greatly improve network project economics by eliminating risk management and settlement costs, increasing meter installation density, reducing field force duplication, and eliminating the need for retracing installation routes in the future as compared to a staged roll-out.*

Australian Inland prefers a gradual roll out of interval or time-of-use meters, such as a new and replacement meter strategy. It notes that this strategy is partially in place where multi-function, single-phase meters are installed in new and replacement controlled-load installation, instead of two individual meters and a controlled load switching device.

AGLV, Elster Metering and Powerdirect are opposed to a mandated roll out of any particular metering solution. AGLV believes the costs of this exercise would be high and that the benefits would not materialise. Further, it would be against the Code's intention of providing customer choice. Elster Metering believes a mandated roll out of interval meters would run the risk of incurring unnecessary costs to some consumer groups. A market driven approach would overcome such inequities.

Powerdirect believes that mandating a particular technological solution would not further competition, but that the incremental additional of new solutions would lead to lower costs and better service, provided that current minimum standards of accuracy and quality are met.

Further, Powerdirect believes that a mandated solution will not necessarily provide price signals from the wholesale market, as this market is more profile and risk driven, than necessarily price sensitive on timeliness and accuracy of meter data.

C.8.2 Assessment framework

Several submissions recommended amendments to the assessment framework for assessing the costs and benefits of rolling out interval meters:

- The ACA believes the assessment should not only address economic costs, but social impacts together with regulatory and market adequacy to control the change;
- C&SS believes the assessment should not focus on a consumer and cost the meter as a consumer asset, but rather as part of the industry infrastructure required for an economically efficient NEM incorporating a truly competitive wholesale and retail sector;
- EnergyAustralia recommends a full value chain cost analysis be the common economic frame of reference, while ensuring that economies in one segment do not come at the expense of another. EnergyAustralia lists the system wide benefits as:
  - Greater retail and wholesale competition;
  - Potentially lower wholesale and retail prices;
  - Reduced capital expenditure for network and generation businesses;
  - Increased capacity utilisation; and
  - An enhanced scope for innovation above and below the meter;
- EnergyAustralia believes the analysis should be undertaken:
  - Separately for metropolitan and rural networks, as their manual interval meter reading costs, which are driven by density economics, are likely to differ substantially; and
  - For the retail segment also, to determine whether market settlement is justifiable given the significantly greater costs associated with market settlement, billing and risk management of manually read interval meter data; and
- TXU should also consider the use of risk weightings, as costs are certain, while benefits are based on a number of assumptions that are uncertain. Further, the Jurisdictional Regulators should consider the following in the assessment and decision making process:
  - A list of pre-requisites for the benefits to be delivered;
  - Ensuring that sufficient resources and time are allowed for proper planning and change (both operational and regulatory);
  - Ensuring expectations of demand management strategy are realised; and
  - Determining in advance what the success criteria are and measuring them.

EnergyAustralia and United Energy expressed concern that the assessment framework does not ensure that consistent and comparable analyses will be conducted across jurisdictions.

C.8.3 Deletion of clause 7.3.4(e) from the Code

Clause 7.3.4(e) of the Code states that:

> *The Metrology Coordinator must advise NEMMCO by no later than 30 April each year of how much longer the Metrology Coordinator proposes to continue allowing its metrology procedure(s) to contain type 6 metering installation(s) within its jurisdiction*

United Energy believes that this clause forces a conscious decision on the regulator about the cost-benefit equation of technology options each year and acts as a prompt where assessments of interval meters by some jurisdictions have not yet been made. Removing this clause will thus remove the need for the decision and remove the prompt. United Energy also notes that, in a national regulatory environment, the Australian Energy Market Commission may be able to take on this policy / rule making role and advise NEMMCO.

C.9 Ring-fencing arrangements

C.9.1 Effectiveness of existing ring-fencing arrangements

Origin Energy and Powerdirect explicitly support the ring-fencing recommendation. Further, Origin Energy believes that:

> *To the extent that the various regimes are ineffective, market competition is being discouraged and outcomes distorted. For these reasons, recommendations in the Draft Report concerning ring-fencing should be acted upon as soon as possible by Jurisdictional Regulators (ahead of establishment of the AER).*

However, TXU suggests this recommendation may lead to a duplication of effort, given that a single national regulator is scheduled to commence in 2006.

United Energy is of the view that the ring-fencing obligations in Victoria are sufficient to ensure there is no anti-competitive behaviour between distribution and retail businesses. Further, United Energy:

> *sees no need for further ring-fencing between a distributor and its meter provision function as it is required under licence to provide non-discriminatory access to its distribution services.*

Centurion is of the view that joint distribution/retail businesses have an advantage over independent retailers. It believes no level of ring-fencing can address this advantage:

> *Only competition between service providers can provide independent retailers with greater price equity.*

It is presumed by Powercor and CitiPower that the ring-fencing of the 'distributor's metering business' is in relation to the retail business and not in relation to the other activities of a distribution business.

C.9.2 Nationally consistent ring-fencing guidelines

Powerdirect, EnergyAustralia, Ergon Retail, Origin Energy and United Energy provided some support for nationally consistent ring-fencing guidelines. However, there were divergent views on the appropriate model for such guidelines:

- EnergyAustralia supports IPART's distribution ring-fencing guidelines;
- Ergon Retail believes the ring-fencing arrangements that are in place in NSW, SA and Victoria should be made more robust; and
- United Energy believes that any move to national consistency should reflect the Victorian position, to avoid imposing unnecessary costs on Victorian customers.

EnergyAustralia also proposes that NSW's Accredited Service Provider model be adopted nationally, thereby:

> *increasing transparency for service providers and their customers while maintaining service levels, and reducing transaction costs associated with offering cross border services to LNSPs, retailers and customers.*

Country Energy believes the costs of implementing nationally consistent ring-fencing guidelines would be significant, and a framework would need to be established to allow distributors to fully recover such costs. It believes this would create unnecessary inefficiencies to the delivery and pricing of metering services to customers, significantly outweighing any perceived benefits that may be gained.

C.10 Further review

In relation to the timing of the next review, a number of submissions suggested an alternative timeframe for the completion of the review:

- Centurion recommends the next review be completed by 30 June 2007;
- EnergyAustralia recommends a date of March 2010 to ensure that stakeholders have sufficient experience upon which to draw, and that the outcomes of the next Metrology Review will be known prior to the next IPART price determination, allowing additional costs to be included in stakeholder submissions;
- United Energy believes 5 years may generate a level of complacency, and suggests it be completed within 1 – 2 years of implementation of the actions from this Review (expected to take 2 years); and

- Powerdirect suggests a review may not be necessary in less than a five year period, particularly if 'an incremental commercial model is created by appropriate changes to the existing metrology procedures'.

In relation to the timing of the next review, Country Energy agrees that:

> *the next review of metrology needs to balance the need for allowing sufficient time for any recommendations from this review to be implemented and their impact analysed, and the need for the next review to be close enough so that the momentum gained for reform in this review is not lost. However, it is also important that the next review take into account the timing of the expiry of ETEF arrangements on 30 June 2007, and the next round of electricity distribution price determinations, which in NSW, will be well and truly underway during the first half of 2008.*

Elster Metering noted that the draft recommendation was acceptable.

Powercor and CitiPower support the draft recommendation but believe that the recommendations should also extend to any issues identified in reviewing outcomes from this Review. Further, Powercor and CitiPower believe the recommendations:

- Rightly require the further review to make recommendations in relation to any additional barriers found; and
- Have appropriately carried forward the need for regulatory certainty.

United Energy supports the principle that further reviews should build on this Review and assist to increase certainty. However, it believes it is unclear what timeframes the Jurisdictional Regulators are considering when actions for large first tier customers are being considered 'in the longer term' and how these actions may integrate with the timing of any proposed interval meter roll out.

AGLV strongly believes that any further review of metrology should be focused on identifying barriers to customer choice, not barriers to the adoption of economically efficient metering. Given the ability to choose, AGLV believes that the market will deliver the lowest cost outcome for customers, in accordance with the Code.

C.11 Proposed Code changes

Elster Metering notes that the draft recommendation on proposed Code changes is acceptable. However, Centurion believes the implementation and review timeframes seem unnecessarily 'lethargic', and recommends a strict implementation timetable be adhered to:

- Code changes agreed and submitted to NECA by 30 September 2004;
- Code changes implemented from 1 July 2005;

- A draft Metrology Procedure should be available for comment by 31 December 2004; and
- The Metrology Procedure should be effective from 1 July 2005.

However, Australian Inland believes any changes to metering services, which affect large numbers of customers, should be gradual and well planned to avoid confusion and failure of the change.

United Energy recommends the following alterations to the proposed code amendments:

- Draft recommendation 7.1.3 - where interval meters are installed, as a principle interval meter data should be utilised with an opportunity to have an exemption from the rule below a certain threshold where requested; and
- Draft recommendation 8.5 - the Metrology Coordinator role (or equivalent) should make a conscious decision and provide guidance to NEMMCO that type 6 metering will continue as part of the metrology procedure, on a more frequent basis than a single proposed review in 5 years.

Subject to the jurisdictional regulators' final determination, the NEMMCO Board has endorsed NEMMCO leading the proposed Code change work, with the objective of meeting the target dates for submission of identified Code change proposals to NECA (AEMC), and the provision of ongoing operational support where required.