

Mr John Pierce
Chairman
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

13 October 2016

Dear Mr Pierce

**Amendments to Chapters 5, 6, 6A and 7 of the National Electricity Rules
In the implementation of Demand Response and Network Support Services**

The Australian Energy Council (the Proponent) is an industry body representing 21 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia, and sell gas and electricity to over 10 million homes and businesses.

The Proponent submits this rule change request to the Australian Energy Market Commission, in line with the requirements of 92(1)(a) of the National Electricity Law and associated regulations. The rule change requests relate to Chapters 5, 6, 6A and 7 of the National Electricity Rules. This submission has been developed with the National Electricity Objective in mind. It is additionally informed by expert advice on the effect of both regulated and contestable services being provided by a single network business or a ring fenced affiliate under the current rules.

The rule change proposal and associated description of the proposed rule are attached for your consideration.

Should you have any questions in relation to this rule change request please contact David Markham, telephone 03 9205 3107 or david.markham@energycouncil.com.au.

Yours sincerely



Matthew Warren
Chief Executive

Executive summary

The current structure of the electricity industry and its regulatory framework follows from the Hilmer review and its conclusions that competition, where practical, is the best mechanism for providing services to customers at an efficient cost, offering them choice of service levels and to drive innovation to continuously improve services. Regulation, as of monopoly network services, is a second-best approach. In other words, the National Electricity Objective is enhanced by the extension of effective competition as enabling technologies evolve. This has recently been demonstrated by the transfer of metering services to the competitive sector.

The competitive delivery of an emerging class of energy services would benefit from clarification in the NER. These services can be characterised as those that can provide benefit to the customers on whose premises they are located, as well as support back to the grid (e.g. peak demand reduction, voltage support). These services may be provided by the likes of embedded generation, storage and demand management tools. These are commonly referred to as behind the meter or BTM services. The dual nature of the services has created ambiguity as to whether NSPs can directly supply and or own the assets that deliver these services on the basis that they contribute to the NSPs provision of direct control services. NSPs are doing this, often using their DMIS allowances to do so.

This emerging class of energy services is not limited to customer side installation. Grid connected storage or demand management assets may also create both active and reactive energy, for either an NSP or TSP. Whilst these will have a functional relationship with distribution or transmission services, they are not exclusively for the conveyance of energy within a distribution or transmission network. Therefore these energy-related services will have to be defined to exclude the conveyance of energy within a distribution or transmission network. Whilst we will refer to NSPs generally throughout this document, we consider that distribution networks are broadly analogous to transmission networks, and consequently include consideration of Chapter 6A in our rule change proposal.

The concern is that when NSPs supply and/or own the assets, competitive neutrality in the provision of these services to customers is compromised. This is because the NSP can in practice access the network support benefits far more easily than other participants in the market, allowing them to offer the customer services at a lower cost. Over time, this could allow NSPs to dominate the market for BTM services in their own service area, which would deny customers the dynamic benefits of effective competition. This is not least because the NSP will seek to retain as much of the value as possible, so any price differential will only be just enough to keep other competitors out. These dynamic benefits outweigh any short-term gains to customers from obtaining NSP provided BTM services slightly more cheaply in the near term, but over time the dynamic efficiency benefit would be expected to overtake the NSP provision benefit.

We are not arguing that NSPs should not have access to the network support benefits that BTM services can offer. In fact it is essential that they do so in order to achieve a lowest cost system for the benefit of customers. But they should be required to procure them from the competitive market, which may of course include an appropriately ring-fenced affiliate of the NSP. Robust competition for the provision of this type of services will in turn allow the network to deliver its direct control services at the most efficient cost. It will also allow for co-optimisation of network support services and customer value, given that the technology cannot necessarily provide both simultaneously.

The priority to achieve this outcome is the appropriate definition of direct control services to make clear where the boundary is. Any activity other than the conveyance of energy should in our view be excluded from direct control services, and be the subject of a new classification of energy related or contestable services. The location of the asset on the customer (BTM) side or the NSP (grid connected) side is irrelevant thereafter. The proposal is that NSPs must procure network support services externally where they are provided by an asset that provides services in addition to the conveyance of energy. In practice this requires:

1. Reclassification of Distribution Services, including a new Contestable Services classification.
2. Excluding NSPs from direct investment in BTM assets.
3. Changes to Regulatory Investment Tests (RIT) to ensure competitive non-network solutions are considered for the widest practicable range of investment decisions.

To be truly effective, though, the framework also needs to reinforce competitive neutrality, i.e. maximise the scope for independent competitive providers to supply network support services to networks. To do this they need to be exposed

to the information and price signals that indicate where and when network support services are most valuable. These prices would ideally seek to put monetary values to any and all services that can be provided by BTM assets. A range of regulatory tools are related to this and should be considered as being in scope in this regard, including:

4. Legal separation of unregulated affiliates and strong ring-fencing and cost allocation guidelines. (Please note that throughout this document, all rule change proposals assume that the AER's Ring Fencing Guideline will be entirely implemented unchanged from the current Draft form).
5. Better information provision of where on the network support services may have most value.
6. Review of incentive schemes such as the Demand Management Incentive Scheme (DMIS) and the Efficiency Benefits Sharing Scheme (EBSS) to ensure they cannot be gamed by NSPs to share benefits with an affiliate and thus gain advantage over other providers.
7. Access to cost-reflective tariffs (including for energy injected into the grid).

We recognise that together this represents a broad-ranging suite of reforms. The amendments proposed require careful consideration and should not be undertaken in a piecemeal manner. We also note that the AEMC have recently received rule change proposals on some of these areas from other interested parties. Should the AEMC wish to break this request up into separate rule change processes and combine with other proposals where appropriate, then we are happy for them to do so.

Introduction

The National Electricity Rules (Rules) were developed when the electricity supply chain was entirely characterised by a one-way flow of electricity from large, centralised generators through the transmission and distribution systems to the end user.

At that time, the current and future state of Demand Response (DR) and Network Support (NS) technologies could not have been predicted. It is important today that the views that underpinned the development of the rules for that time, such as Hilmer, should not be used to limit the debate or imply that the existing controls must represent the limits of required regulation thereafter.

The assumption in this rule change proposal is that each of these draft outcomes in the Ring Fencing Guideline will be reflected in their entirety in the final determination. However effective ring fencing requires a broader response than those contained in the draft guideline. The rule changes proposed herein are required, in conjunction with the Draft Ring Fencing Guideline, to address the necessary:

- size, capital requirements and immediacy of the DR/NS investment, and the reliance on competitive markets to deliver;
- efficient pairing of energy with storage for intermittent renewables generation, which requires a broader response than regulated utilities can provide; and
- amendments to the NER necessary to address the emerging problem of NSPs attempting vertical integration.

The advent of beyond the meter (BTM) technologies that have the ability to provide demand response and network support services blurs the traditional boundaries between what is a service that forms part of a Distribution Network Service Provider's (NSPs) monopoly distribution service versus what is a service that should be determined by competitive market forces. The definition of Distribution Services was developed at a time when non market generators were a curiosity and widespread storage as an alternative way of managing peak demand and other services was just an idea.

Energy storage has enormous and immediate potential. In its 2015 report to the AEMC, CSIRO found that energy storage could be viable for households in seven years under current tariff structures¹. CSIRO also estimates that energy storage

¹ CSIRO website: <http://www.aemc.gov.au/Major-Pages/Integration-of-storage/Documents/CSIRO-Future-Trends-Report-2015.aspx>

in the NEM could compete against gas within 20 years². This implies the potential for thousands of dollars of MW of storage, and identifies that the value of storage is large. Consistent with the National Energy Objective (NEO), the long term interests of customers will be best served by arrangements that facilitate the provision of Distributed Generation (DG) and Network Support (NS) investments of the right size, location and operational characteristics that maximise economic welfare. As increasing intermittent generation hits the market, the need to accommodate and allocate the values of the network peak, and the energy peak, mean that the NSP is not the best party to make the investment decision. Dynamic price signals covering all parts of the value chain need to be seen so as markets can respond accordingly.

NSPs have responded to technological advances in small scale generation (particularly solar) and other distributed generation and storage devices by exploring opportunities for growth in revenues and substitutes to traditional network investments. This does not mean networks need to invest directly in these assets. Arguably, regulated businesses benefit from a more competitive market because when the forecast cost of balancing supply and demand in the regulatory period accrue efficiencies in the market, the NSPs pocket that benefit. This makes networks a more sophisticated service, in many ways more relevant to the future.

Networks are fixated on growing the Regulatory Asset Base (RAB). This is an outdated business model that has to be addressed. Assets are not classified, only services. Nothing about the Ring Fencing Guideline prevents *procurement*, and the NSP does not have to create a ring fenced affiliate in order to *procure* either distribution services or alternate services at an efficient price. There is no obvious synergy or scale benefit accruing to consumers from networks shoring up the RAB, or creating “economies of scope”.

Dynamic efficiency benefits are more likely to be realised if the costs of creating a separate legal entity on networks is imposed on the network and is not recoverable through its regulated revenue, and the AER seems to have indirectly enabled this. The AER draft Ring Fencing Guideline points towards the affiliate will incurring the costs of legal and functional separation.

Networks may argue that implementing constraints on their ability to operate in contestable markets constrains network efficiency and this places a greater cost on customers than the incremental benefits of highly competitive markets. In our reading the AER has sought to address this through ensuring the regulated entity is the entity that is ring fenced from other activity, not the other way around. NSPs exist entirely, and only, to provide regulated monopoly services; not to provide economies of scope for their owners.

Finally, in many jurisdictions, legacy metrology is likely to stymie the implementation of cost-reflective network tariffs in the short- and medium-term, and possibly the long-term. Whilst this is the unfortunate reality, smart meters do enable some progress towards cost reflectivity in network tariffs, although full cost reflectivity is possibly a number of years away.

We need to move forward regardless.

1. Reclassification of Distribution Services, including a new Contestable Services classification.

A statement of the nature and scope of the issue that is proposed to be addressed and an explanation of how the proposed Rule would address the issue;

To support the development of competitive markets in services which are or should be contestable, the reclassification of services is paramount. Defining the term “energy related services” in the NER is the foundation of defining the scope of NSP activities.

The AER Draft Ring Fencing guidelines impose obligations on NSPs by reference to “network services” and “distribution services” which are drafted in contradistinction to “energy-related services”. Network Services and Distribution Services are definitions developed when the system was unidirectional, and it was not contemplated that customers might be vendors of services. It would be useful for the definitions to separate the responsibilities from the services that networks

²Ibid

are meant to provide, and define that they can purchase services from customers and third parties. The difficulty today with this is that the guidelines adopt the definitions of these terms that are found in the NER. The definitions in the NER, particularly the definition of “distribution service” are vague and imprecise.

- “Network services” is defined as a “distribution service associated with the conveyance, and controlling the conveyance of electricity through the network”. A “distribution service” is “a service provided by means of, or in connection with a distribution system”.
- “Distribution system” is defined as “A distribution network ... which is connected to another transmission or distribution system”. That is, a distribution network is a thing connected to another network. This is an entirely circular definition.
- “Energy-related”, is a term in the AER Draft Ring Fencing guideline which is not a defined term in the NER. “Energy” is defined as Active Energy and/or Reactive Energy. Active Energy is a measure of electrical energy flow.

The effect of this collection of vague and circular definitions is that the application of the AER Draft Ring Fencing guideline is uncertain, and therefore subject to avoidance.

For example, clause 3.1 of the AER Draft Ring Fencing guideline provides that a NSP must only provide network services. However the definition of that term picks up distribution services which are services provided in connection with a distribution system. This will be scope for considerable avoidance as to whether grid level or beyond the meter storage is in connection with a distribution system. Strictly and literally, services in connection with a distribution system may also include control devices that regulate the use of the “system”.

Energy-related services are services that involve the storage or generation of energy. Our view is that the NER should expressly state that network services do not include energy related services, and further that energy-related services are services that involve the storage or generation of energy. Energy related services will have to be defined so as to exclude distribution services, but at the same time enable distributors to address issues such as local congestion.

To accelerate innovation and efficient investment we propose that a new service classification called “energy-related”, or “contestable”, services be created. We do not think that this new term “energy-related” services is or should be captured by the current definition of unclassified services. The reason for this is that unclassified services appear to constitute what are residual services from the perspective of the Rules. This is because any service that is not otherwise classified as either a Direct Control Service or a Negotiated Service is deemed to be unclassified.

The definition of “energy-related” or “contestable” services would preclude the AER from having a role in regulating the prices charged for contestable distribution services. However the AER would have a role in determining from time to time what services are to be included within this category of services, as well as determining whether a NSPs costs for procuring those services are prudent and efficient.

Networks are traditionally fixated on growing their Regulatory Asset Base (RAB) and in the context of competition to the RAB from Contestable Services this fixation is an outdated business model that has to be addressed. Because assets are not classified, only services are, nothing about the Draft AER Ring Fencing Guideline prevents the procurement of DR and NS services, and the NSP is not required (though not prevented) to create a ring fenced affiliate in order to procure either distribution services or alternate services from a competitive market at an efficient price. There is no obvious synergy or scale benefit accruing to consumers from networks simply shoring up the RAB, or creating “economies of scope”, by direct investment in these opportunities.

If the AER Guideline is accepted in its current form, then the cost allocation obligations explicitly prevent a NSP allocating or attributing to distribution services costs that properly relate to non-distribution services. If a NSP is able to allocate capex and opex associated with its DR and NS services investment to its regulated asset base and regulated revenues, the costs are socialised across all network customers.

Whilst this allocation and attribution must be consistent with the cost allocation principles in NER clause 6.15.2 it is important to note that the cost allocation principles outlined in the Rules are broad, and offer little guidance beyond high level, generic principles. Because of this and the nature of joint costs themselves, there is a range of outcomes that might be deemed to be “economically efficient” that in fact are not. We believe that 6.15.2 requires consequential review if changes outlined above are accepted.

Rule Change Proposal

Amendments to Chapter 6 of the NER to create the new definition of “energy related” or “contestable services.” Clause 6.17.2(b) would be an appropriate place for this class of service to be incorporated.

2. Excluding NSPs from direct investment in Beyond the Meter (BTM) assets.

A statement of the nature and scope of the issue that is proposed to be addressed and an explanation of how the proposed Rule would address the issue;

Beyond the Meter (BTM) activities are a potential competitor to network services in the medium term. Distribution networks are naturally monopolistic; there are prohibitive costs and inefficiencies associated with duplicating a distribution network to create network competition. Conversely, energy storage and generation are able to develop in a largely competitive environment.

Direct investment by NSPs in energy storage and generation is a form of vertical integration. Vertical integration is generally more likely to result in the exercise of market power if at least one of the segments of the integrated entity is a monopoly. NSPs in such circumstances are much more likely to have the incentives and ability to leverage the monopoly power they have to restrict competition in the other market. Rules to protect competition against this kind of vertical integration in transmission and generation already exist in the cross ownership law. Our view is that this principle needs to be applied to NSP investments.

Our objective is to support the long term interests of consumers through the development of competitive markets in services which are or should be contestable. The proposed changes are that NSPs be precluded from (or penalised for) making capex investments in, or taking a direct role in, providing BTM NS or DR services via their end customers to various parts of their electricity supply system.

These proposed changes are necessary due to:

- A number of unique characteristics of these services (relative to other individual services that are utilised to provide Standard Control Services), including, but not limited to:
 - the technologies used to provide these services are fairly immature, and hence there are likely to be sizable cost reductions/technology improvements and business model innovations obtainable in the future that market dominance by the NSP could delay or inhibit;
 - the potentially large size of the BTM market itself, as well as the business-as-usual network costs that BTM services may be able to offset, and;
 - it is a potential competitor to network services in the long-term.
- The apparent nature of Shared Asset Guidelines to skew the upfront incentives for NSPs to invest in assets that can provide both shared network and unregulated services and which have feasible economic alternatives (e.g., a network investment).

The AEC assumes that the AER's Ring Fencing Guideline will be fully implemented unchanged from its current Draft form, though we are concerned that the AER Guideline does not go far enough and still enables the direct investment of NSPs in NS and DR services³ that would provide a superior solution through competitive markets.

We also note the AEMC decision on Local Generator Network Credits, considering the long-term benefits provided by embedded generators, is not available until after September 2017. The AEC assumes that the rule change proposal would require NSPs to pay when there is a net benefit, but would not allow them to charge discreetly when there is a net cost (though those costs would still be recoverable by NSPs).

Rule Change Proposal

Amendments to Chapter 6 of the NER to create an absolute prohibition on direct BTM investment by NSPs. This may accompany the proposed new definition of "energy related" or "contestable services." Clause 6.17.2(b) would be an appropriate place for this class of service, and the prohibitions that apply, to be incorporated.

3. Changes to Regulatory Investment Tests (RIT) to ensure competitive non-network solutions are considered for the widest practicable range of investment decisions.

A statement of the nature and scope of the issue that is proposed to be addressed and an explanation of how the proposed Rule would address the issue;

The RIT-D is a cost-benefit test that NSPs must apply when assessing the economic efficiency of different investment options. Our view is that because network peak and energy peak should both be monetised in an efficient DR or NS investment, then a different procurement option is now required. The high threshold value of the RIT-D, when applied in addressing (or not addressing) both network peak and energy peak, compromises both allocative efficiency and dynamic efficiency. Part of the solution is that the threshold must be reduced from \$5 million for distribution network investments to \$50,000⁴.

We do not assess the costs of a suitably truncated RIT-D threshold, whereby, the business just needs to list the asset, its location, and its annualised cost on a website in reasonable advance of it having to be replaced/augmented to be material. There is no obligation on the NSP to develop any technology alternatives, but simply for the NSP to undertake the truncated RIT-D above. One example is the cost of the transformer upgrade to meet load growth in a residential area. Whilst a standard transformer upgrade doesn't create an unregulated revenue stream – consistent with the definition of a distribution service, if an alternative solution to the transformer upgrade can be found that is lower cost and creates an unregulated revenue stream then that should be undertaken as a competitive activity. The reasoning here is that competitive markets are the best way to allocate all resources.

The arrangements that will promote the achievement of the NEO should encourage productive, allocative and dynamic efficiency in both the market for regulated network services, as well as the market for NS and DR services. The regulatory framework should not inadvertently lead to less efficient businesses being able to obtain market share over more efficient businesses. Therefore NSPs should not be able to use their monopoly position or their ability to obtain benefits from NS and DR services that cannot be obtained by other parties to reduce competition for the provision these services which could also reduce efficiency in the market in potentially both the short and long terms.

One enabler of the dynamic efficiency benefit is to impose the costs of creating a separate legal entity on networks, and the AER Draft Guideline attempts to enable this through requirements for legal separation. In contrast to the Networks argument, the AER appears to have correctly assumed that the incremental benefits of competitive markets outweigh the costs imposed from ring fencing which may constrain 'network efficiency'. The AER has enabled ring fencing costs to be appropriately levied on the affiliate rather than being charged to all customers through distribution costs.

³ Case study 16 on page 64 of the AER's Explanatory Statement highlights this issue.

⁴ This lower threshold of \$50,000 is set to capture activities such as distribution substation (transformer) upgrades where either small scale or BTM generation or storage may represent an equivalent technical and superior financial alternative to any asset upgrade.

The AER has taken the view that the regulated entity is the entity that is ring fenced from other activity, not the other way around. Ring fencing is not about restricting the legitimate competitive activities of a related entity. Not everybody can be a natural monopoly, but anybody can have or be a commercial business. This is an important distinction because networks will argue that they cannot obtain available efficiencies from their monopoly network business when they are strictly ring fenced and therefore that constitutes somehow an inefficiency in the competitive market. This is also a useful paradigm shift, as historically regulators have struggled with the reverse burden of accommodating situations where competition may not reach some perceived efficiency threshold because of the cost of ring fencing, rather than instead facilitating true competition to promote efficiency and economic growth. This approach by the AER appears to recognise that NSPs exist entirely and only to provide regulated monopoly services, not to provide economies of scope for their owners.

In substance of course, a NSPs ring fenced affiliate (should it choose to invest in one) has the same opportunities as something like AGL's New Energy group to provide the services that any NSP needs to procure. Proxies for the cost of ring fencing, such as the \$20 million AGL invested in establishing New Energy/Activestream at AGL, are in fact a proxy for what a commercial business will invest to enter the market. This investment is also a proxy for the extent of that market.

The National Electricity Amendment (Distribution Network Planning and Expansion Framework) Rule 2012 includes a dispute resolution process that would be open to all projects subject to the RIT-D⁵. Our contention is that what the high threshold value of the RIT-D does with NSP investments is actually create uncertainty. This is because for investments below the \$5 million threshold there is no reasonable assurance that:

- A NSP will negotiate in good faith, or;
- A third party will be able to monetise any of the benefits.

In fact below the \$5 million threshold how do we know the costs at all?

For example, a transformer upgrade may be considered primarily driven by the need to provide Distribution Services, and the NSP might then consider the upgrade against one form or another of NS or DR. The AER has considered this within its Ring Fencing review, in its Draft Guideline, as the NSP being able to provide these Distribution Services by beyond the meter (BTM) direct investment. However this fails to recognise that a transformer upgrade and (for example) a battery installation are not the same, as the transformer upgrade does not create an unregulated revenue stream. Under the AER Draft, the NSP could capture the unregulated revenue stream provided by the battery in lieu of the transformer, via the shared asset guidelines. How this is accounted for by the Shared Asset Guidelines causes part of the issue because it potentially skews the incentives to invest in the battery.

Rule Change Proposal

To support the development of competitive markets in services which are or should be contestable the following is required *in addition to* the full implementation of the AER's draft Ring Fencing Guideline:

- Amendment to Chapters 6 and 6A of the NER to provide that expenditure on NS and DR may only be added to capex and opex allowances after those proposed expenditures have been subject to a reduced RIT-D test;
- Amendments to Chapters 6 and 6A (6A.5.5.c) of the NER to include new principles developed in consultation for the allocation of costs that are common to both prescribed network services/direct control services and NS and DR investments;
- Amendments to Chapters 6 and 6A creating powers in the NER authorising the Australian Energy Regulator (AER) to remove investments in the regulatory asset base (RAB) which have not been subject to the RiT-D above a new \$50,000.00 threshold (6.2.1.e);

⁵ National Electricity Amendment (Distribution Network Planning and Expansion Framework) Rule 2012, Final Determination

- Amendments to Chapter 6 creating a prohibition on including costs in the RAB in excess of those revealed through the RiT-D processes (6.2.1.e);

Related Regulatory Tools

As outlined in the summary, to be truly effective the framework needs to more broadly reinforce competitive neutrality. To maximise the scope for independent competitive providers to supply network support services to networks these providers need to be exposed to the information and price signals that indicate where and when network support services are most valuable. These further regulatory tools are related to this and should be considered as being in scope in this regard.

4. Legal separation of unregulated affiliates and strong ring-fencing and cost allocation guidelines.

In December 2015 the COAG Energy Council announced a review of ring fencing arrangements. The Communique for that meeting stipulated that new ring fencing arrangements would:

- support the development of competitive markets in services which are or should be contestable;
- provide clarity and certainty in the market for new investment;
- provide a level playing field for all parties providing energy services; and
- accelerate innovation and efficient investment.

The AER's recently published Draft Ring Fencing Guideline seeks to create a more level playing field by addressing the two harms created by ineffective ring fencing; cross subsidy and discrimination.

The draft outcomes include requirements for:

- Legal separation with no waiver;
- Separate accounting: No waiver;
- Cost allocation: No waiver⁶;
- Non Discrimination: No waiver.⁷;
- Physical separation and staff sharing: Waiver may be granted under some circumstances; and
- Information access and disclosure: No waiver.

We note the AER's views on the direct investment of NSPs in NS and DR services⁸, and believe a superior solution would be provided through competitive markets.

5. Better information provision of where on the network support services may have most value.

A statement of the nature and scope of the issue that is proposed to be addressed and an explanation of how the proposed Rule would address the issue;

⁶ We note that 3.2.2 of RF Guideline addresses x-subsidy to fullest extent guideline can and is read in conjunction with 6.1.5 NER and 6.4.4 of NER the Cost Allocation Guideline, the NSPs' approved CAMs and the Shared Asset Guideline.

⁷ The general non-discrimination in the draft Guideline does not place a positive obligation on NSPs to identify and price the opportunities as a way of single conformity to facilitate the market analysis needed to develop the NS and DR opportunities. It is not apparent that the AER's guideline can enforce such a positive obligation on NSPs and therefore changes to Chapter 5 of the NER will be required.

⁸ Case study 16 on page 64 of the AER's Explanatory Statement highlights this issue.

Information is critical to investors. Current Distribution Annual Planning Reports (DAPRs) are prepared in accordance with the NER. NSPs are required to report on capacity and load forecasts for sub transmission lines, zone substations and transmission and distribution connection points. The DAPR also report on any primary distribution feeders which were overloaded or forecast to be overloaded within the next two years. These reports are often touted as the equivalent of information symmetry, but by their own account they are not intended to be used for purposes such as making decisions to invest in generation, transmission or distribution capacity. The efficient investment that flows from accurate and reliable information and forecasts is in the long term interests of energy customers and the NEM.

To provide clarity and certainty in the market for new investment NSPs we propose that DSNPs be subject to additional “standard access obligations” in relation to solutions at or near the supply point. These obligations will provide:

- All necessary information (network performance data, load data) to competitors that will enable decisions to invest in generation or storage as an alternative to distribution capacity; and
- Technically equivalent access to the network to the competitors of any regulated or related business.

To address the information requirements we consider that where a NSP is involved either directly (which is non-preferred) or indirectly through a related businesses in BTM investments in NS and DR, the NSP should be subject to additional “standard access obligations” in relation to solutions at or near the supply point. This obligation would include providing network performance data and load data to competitors to its related business that will enable decisions to invest in generation or storage as an alternative to distribution capacity.

The AER’s 2016 proposed changes to the replacement expenditure guideline require the NSP to justify:

- Whether they have undertaken any consultation with non-network proponents about the potential for a non-network solution to form all or part of a credible option to address the identified need, and;
- Reasons that the NSP proponent considers that the only viable option to meet the identified need is like-for-like replacement.

In order to support the achievement of the NEO, the regulatory framework must not skew the NSP incentive to invest in (or not invest in, as the case may be) supply or demand-side options that form part of the least-cost means of balancing supply and demand of network services in the long-term.

The AER Draft Guideline on Ring Fencing includes a static obligation on NSPs to provide third parties competing with any ring fenced body corporate of the NSP equivalent access to any information. The AEC assumes that the AER Guideline will be fully implemented in its current draft form. The AEC notes that this does not place the positive obligation on NSPs to provide all necessary information (network performance data, load data, value of constraints etc.) to all competitors that will enable decisions to invest in generation or storage as an alternative to transmission or distribution capacity. Rather it relies on the related body corporate seeking that information, and then being required to make that information available to third parties.

We also note that on 1 July 2016, the AEMC received a rule change request from the AER to amend the National Electricity Rules requiring network businesses to, among other things, extend the application of the RIT-T and RIT-D to replacement expenditure. We note the AEMC has not yet initiated this rule change request.

To provide clarity and certainty in the market for new investment the following is required *in addition to* the full implementation of the AER’s draft replacement expenditure rule change.

Rule Change Proposal

Where a NSP is involved either directly or indirectly through a related businesses in investments in NS and DR, the NSP should be subject to additional “standard access obligations” in relation to solutions at or near the supply point that will require:

- Amendments to Chapter 5 of the NER to require NSPs with related businesses to provide all necessary information (network performance data, load data) to competitors that will enable decisions to invest in generation or storage as an alternative to distribution capacity;

- Amendments to Chapter 5 of the NER to require NSPs with related NS/DR businesses to provide technically equivalent access to the network to the competitors of any regulated or related business.

Review of incentive schemes such as the DMIS and EBSS to ensure they cannot be gamed by NSPs to share benefits with an affiliate and thus gain advantage over other providers.

A statement of the nature and scope of the issue that is proposed to be addressed and an explanation of how the proposed Rule would address the issue;

Network data and forecasts are not currently published in a manner that will reveal opportunities⁹ for substitutes to network investment. This creates concerns with regard to where a NSPs ring fenced affiliate (or the NSP, as a result of their ring fenced affiliate's actions) can monetise a benefit that another competitor cannot simply as a result of the regulatory framework. This would then skew the market in favour of the ring fenced affiliate in that they may be able to capture more market share than they otherwise would have. This occurs when the competitive service is also able to be operated in a way that provides benefits to the local network business, and the affiliated network business is able to monetise that network benefit and yet no other party operating in that contestable market was able to monetise that same network benefit.

Rules which require separation or ring-fencing between network services and activities and NS and DR services have achieved a degree of transparency about what is going on, but will not make the services and activities being undertaken by NSPs competitive to other firms because:

- the economics of NS and DR will be supported to a greater or lesser extent by the avoided costs of network investments; and
- in order to trial and commercially deploy NS and DR solutions, competing firms will require information and cooperation from the local NSP.

Comparable regulatory issues were confronted 15 to 20 years ago with the digitalisation of the fixed telephone network. Notwithstanding that Telstra was subject to extensive ring-fencing obligations, Telstra gained a significant advance on the deployment of digital data (broadband) services to homes through the deployment of digital subscriber line access multiplexers (**DSLAMs**) upstream in its network (at the local exchanges). Over time the regulatory response included changes to the *Competition & Consumer Act 2010* which not only required functional and accounting separation between Telstra's wholesale and retail business units but imposed on Telstra "standard access obligations" that obliged Telstra to give "equivalent" physical access to exchanges, provision of network information fault detection etc., and services to its downstream competitors.

The experience of telecommunications reform indicates that to address the policy issues associated with NSPs entering into DR and NS will require:

- Structural separation (though this may not be achievable);
- Legal, functional and accounting separation where structural separation is not achievable; and
- Positive obligations to provide information and cooperation to unrelated competitors (addressed also above).

The further issue to be addressed is that the various "incentive mechanisms" that encourage NSPs to choose the most efficient combination of in-sourced and out-sourced network and non-network solutions (including beyond-the-meter activities) to balance supply and demand for network services allow the NSPs, as regulated entities, to engage

⁹ This could be provided down to the level of publishing export tariffs to enable individual households to participate in DR/NS opportunities

directly with customers in BTM activities in pursuit of these benefits. None of the measures prescribe¹⁰ that the NSPs must use competitive market players to engage with customers for these purposes.

In the circumstances of accounting separation, the NSPs ring fenced affiliate could in theory provide the service at a discounted price by using part of the benefit available to the NSP to do so. This would have the potential to crowd out potentially more efficient service providers from the DR/NS market in the short-term, which diminishes productive efficiency, and would have a chilling effect on competition and technological development in the BTM market in the long-term, which diminishes dynamic efficiency.

For example, and in a manner close to the Telstra example above, considering SA Power Networks (SAPN)'s bid to defer a \$3 million network¹¹ upgrade, it is reasonable to ask the following:

- How did SAPN let the market know of its requirement for storage and management services at Salisbury?;
- Was there an invitation to any other party to make a competitive pitch? and;
- How did SAPN create a price signal?

In this case the value of the NS or DR opportunities could have been succinctly provided to the market by an export tariff for local generation, based on loads, constraints etc, or some other form of information provision, such as the RIT-D style information package described earlier or even an EOI. It is a reasonable assumption that this work must have been done in any case to inform the SAPN investment decision. Even if, in the end distributed generation or storage was uncompetitive against traditional system augmentation, then at least the price signal is there from the NSP. Given increasing intermittent generation in SA, and the need to consider the values of both the network peak and the energy peak mean that SAPN is probably not the best party to make the investment decision. SAPN are probably not unique in what we assume is their view that the deployment of battery storage could have a significant impact on peak demand growth. But this impact could be greater with more coordination of price signals.¹²

Rule Change Proposal

To provide a level playing field for all parties providing energy services the following is required *in addition to* the full implementation of the AER's draft Ring Fencing Guideline:

Amendments to Chapter 5 of the NER to require NSPs to publish network data and forecasts in a manner that will reveal opportunities¹³ for substitutes to network investment;

Amendments to Chapter 5 of the NER to oblige NSPs to apply an amended RIT-D test to potential network investments above a certain value threshold. The Regulatory Investment Test for Distribution that already exists in Chapter 5 should:

1. Require the NSPs to publish data about the opportunities¹⁴ (including the avoided costs of network investment) and to call for proposals;
2. In relation to opportunities above a monetary threshold require the NSPs to undertake a transparent cost benefit analysis of the proposed network investment compared to NS and DR alternatives in accordance with guidelines published by the AER that;
 - require NSPs to undertake (1) and (2) in all cases in which it or a related party is going to undertake NS or DR investments in response to (1);

¹⁰ There are, however, requirements for (a) the publication of data regarding the potential application and value of demand reduction and (b) the maintenance of lists of parties that are interested in providing demand management services.

¹¹ SAPN media Release 19 May 2016

¹² AEMC website: <http://www.aemc.gov.au/Major-Pages/Integration-of-storage/Documents/CSIRIO-Future-Trends-Report-2015.aspx>

¹³ This could be provided down to the level of publishing export tariffs to enable individual households to participate in DR/NS opportunities

¹⁴ Usable data in the typical form of CSV or xcel files that can be interrogated. This is not the current high level DAPR's,

- require the NSP to undertake a competitive tender process to procure NS and DR solutions (and only costs revealed through a competitive process should be included in the RAB if that approach is chosen); and
- provide that the NSP is only permitted to recover through regulated revenues the economically preferred solution as determined by (2).

6. Access to fully cost reflective tariffs

If fully cost reflective prices for NS and DR services provide to the network were in place there would be no need to intervene in the Demand Response (DR) and Network Support (NS) market and it could be left to the ‘invisible hand’ of the market to deliver efficient levels of DR/NS. In theory, efficient prices signal to the market when and where to make investments in DR/NS and the correct allocation of resources would be delivered by the market in response. However the tariffs for both network consumption and export services are not cost reflective (or non-existent) and as a consequence do not allow the market to deliver NSPs efficient levels of DR/NS.

Because the possibility of full cost reflectivity is remains a number of years away, the ubiquitous solution it offers will remain a theoretical construct and for this reason it is not discussed further here.

An explanation of how the proposed Rule will or is likely to contribute to the achievement of the national electricity objective;

The National Electricity Objective is to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to price, quality, safety, reliability, and security of supply of electricity; and the reliability, safety and security of the national electricity system.

This objective gives power to appropriate laws and regulations so that consumers do not pay more than necessary for their electricity, or an efficient price. Whilst there is a requirement to accommodate situations where competition may not achieve economic efficiency, such as natural monopolies, the objective is still to replicate competitive (efficient) outcomes.

The expected benefits of the proposed changes will be the promotion and adoption of competition in the provision of DR and NS and related services. These changes remove opportunities that exist for NSPs to either explicitly or inadvertently inhibit market investment in these and related technologies and services.

Regulated businesses will see themselves as the most directly affected. But NSPs also benefit from a more competitive market because when the forecast cost of balancing supply and demand in the regulatory period accrues efficiencies in the market, the NSP pocket that benefit. This makes networks a more sophisticated service, and in some ways more relevant to the future.

The benefits are not limited to small scale DR and NS. High levels of wind generation have led to a challenging environment for the South Australian network providers. Notably for 10 percent of the time, absolute wind variation in the southeast and coastal regions can fluctuate by more than 6 percent in a 10 minute period. This variation in generation requires faster and more responsive units than less intermittent generation sources. High variations of wind generation is particularly challenging when the South Australia-to-Victoria interconnector is constrained. Energy storage could help address this challenge by providing load shifting and load smoothing capability.¹⁵

An explanation of the expected benefits and costs of the proposed change and the potential impacts of the change on those likely to be affected;

¹⁵AECOM Australia report to ARENA 2015 - A storage market review and recommendations for funding and knowledge sharing priorities.

The following table is included to broadly illustrate the likely benefits and the nature of costs of the changes proposed in this paper.

Likely benefits and costs of the proposed changes to affected parties

Affected party	Benefits	Costs
Distribution business	<p>More options for balancing supply and demand and providing other network services</p> <p>Lower costs for DR/NS services, particularly in the long-run</p>	Potentially increased transaction costs in acquiring DR/NS services
RF affiliate	Ability to focus on maximising outcomes to the RF business	Will have to legitimately bear its full costs of establishing and running the business
Retailer and other private market BTM product and service providers	<p>Ability to compete on a level playing field</p> <p>Increased magnitude of opportunity available in the market</p>	Will have to legitimately bear its full costs of establishing and running the business
Consumer	<p>Increased range of choice in and lower costs of BTM products, services and providers</p> <p>Increased opportunities to earn revenue from BTM DR/NS arrangements</p> <p>Efficient DR/NS costs reflected in DUOS</p>	Potentially increased transaction costs to identify the most suitable BTM products and services
Electricity market	<p>Increased dynamic efficiency with regard to current BTM DR/NS services and additional services that can be provided by BTM and DER technologies</p> <p>Lower overall costs of meeting demand</p>	<p>Increased administration costs for monitoring the appropriateness of ring-fencing arrangements</p> <p>Increased administrative costs of determining what BTM DR/NS and other services should be classified as 'contestable distribution services' if required</p>

7. Conclusions

To be truly effective the regulatory framework also needs to reinforce competitive neutrality by maximising the scope for competitive providers to supply network support services to networks. The existing design of the NEL and NER does not contemplate the problems of NSP investment in DR and NS, and consequently the current provisions are wholly inadequate to addressing them. The efficient pairing of energy with storage for intermittent renewables generation requires a broader response than regulated utilities can provide.

The size, the capital requirements and the immediacy of the DR/NS investment means that we must rely on competitive markets to deliver. Increasing dynamic efficiency with regard to DR/NS services and additional services that can be provided by BTM or small scale activity will lower the overall cost of meeting these requirements.

Finally, the amendments to the NER necessary to address the emerging problem of NSPs attempting vertical integration require careful consideration, and should not be undertaken in a piecemeal manner.