

17 October 2017

Ms. Anne Pearson
Chief Executive
Australian Energy Market Commission
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Electronic Lodgement – ERC0201

Dear Ms. Pearson,

RE: Draft Determination – Five Minute Settlement Rule

AusNet Services appreciates the opportunity to make a submission to the Australian Energy Market Commission's (AEMC) Five Minute Settlement draft determination. Our detailed submission is attached.

The five minute settlement Rule change was requested by Sun Metals to align dispatch and settlement periods, to provide stronger price signals for more rapidly dispatched generation and demand response, and on an optional basis for small and large customers. The subsequent directions paper proposed to apply five minute settlements to all customers with interval meters.

The draft determination shifts from the directions paper proposal, to an incremental approach where types 4 and 5 metering are deployed from 1 December 2018. This avoids the greater cost of our business needing to update all AMI meters, systems and technology, which was outlined in our previous response. The approach contains the changes to new Types 4 and 5 meters, existing transmission meters, network billing systems and those systems required to only read and process data from these newer meters.

Notwithstanding this change, the costs for making just the essential changes to be compliant with the draft rule will still be material to our business. Across the industry, implementation of the rule is expected to result in a very significant aggregate cost.

Our submission identifies the substantial cost drivers, examines key features of the draft rule, and makes recommendations to the draft rule to reduce the implementation cost and risk.

The key features of the draft determination we examine and make recommendations are:

- the appropriateness of timeframes for publishing B2B Procedure on 1 December 2018 and AEMO Procedures by 1 December 2020 and the resulting implementation issues;
- the implications of changing the demand based distribution and transmission pricing from thirty minutes to five minutes;
- higher cost implications for consumers if types 4A and 5 meters needs 200 days of storage capacity; and
- a meter storage capacity requirement that prevents more AMI meters moving to five minute settlements.

Whilst the incremental approach reduces cost impacts on the industry, care should be taken to not preclude extension of 5-minute settlement for additional customers in circumstances where the metering technology deployed lends itself to this being practical and beneficial. AusNet Services would then identify scenarios where further benefits could be attained for Victorian customers and engage with the Victorian Government on how the AMI metering arrangements could facilitate this.



AusNet Services has contributed to and supports the submission of Energy Networks Australia.

Should you have any queries in relation to this response please do not hesitate to contact Justin Betlehem on 03 9695 6288.

Yours sincerely,

A handwritten signature in blue ink that reads "Kelvin Gebert".

Kelvin Gebert
Manager Regulatory Frameworks

Five Minute Settlement

Response to Draft Determination

Submission to the AEMC on Five Minute Settlement Rule Change Draft Determination

1 Cost drivers the five minute settlement rule change

Transition to five minute settlement will result in significant costs to customers from network and metering charges, especially system change costs. Implementation of the approach in the draft determination will be at lower cost than the earlier approach outlined in the Directions Paper, but will still be very significant.

We have identified the following cost areas in implementing the proposed rule as clarified by the Commission's policy intent provided to the Energy Networks Australia on 4 October.

- Upgrading or replacing our Network Billing system to handle the five minute metering;
- The physical replacement of transmission interconnector meters of which we have more than 650 meters, and around 30 distribution boundary meters on the distribution network;
- Changing existing AMI metering data management systems to collect, validate, substitute, and deliver five minute interval metering to retailers and AEMO in the required timeframe;
- Hardening the communications network by installing additional access points, and increasing telecommunications backhaul capacity on an ongoing basis;
- Increased data storage establishment and management; and
- Changes to head end systems (e.g. SilverSprings UIQ system), for remotely updating new AMI meters to handle five minute interval metering data as revenue metering data, necessary for compliance with all National Measurement Act, National Electricity Rules and AEMO Procedure requirements.

AusNet Services estimates the costs associated with updating all of the above changes to incorporate five minute settlements would be material to our business. At this stage, we have determined that there are uncertainties that need to be resolved before we can obtain more detailed cost estimates, including:

- Meter storage capacity requirements for remotely read type 5 AMI meters in Victoria;
- Whether network billing occurs on the basis of 5-minute or 30-minute metering or settlements ready data;
- Whether our current or new meters are capable of 5-minute data without affecting metrology (accuracy); and
- Whether the Victorian AMI Service Levels Specification and Minimum AMI Functionality Specification would be changed to relax the metering data collection and delivery timeframes.

AusNet Services intends to liaise with the Victorian Governments to identify scenarios where further benefits could be attained for Victorian customers and how the AMI metering arrangements could facilitate this. Options for further Victorian rule changes to be considered include:

- Allowing customers with pre-1 Dec 2018 meters to migrate to 5-minute settlements on an opt-in basis;
- Migrating all customers with eligible¹ AMI meters to 5-minute settlements, representing the majority Victorian households.

In respect to these options, we intend to perform more detailed cost assessment and subject to resolving some or all of the above uncertainties and engage with the Victorian government to help develop the most efficient policy outcomes for all our customers.

¹ Eligibility on the basis that the change would not impact the DNSP's respective AMI system

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2 Comments on Key Features of the Draft Rule

2.1 Metering implementation timeframe

AusNet Services is concerned that the draft rule does not allow enough time to implement final procedures in advance of the 1 July 2021 commencement date. The draft rule clauses 11.100.2 and 11.100.5 requires AEMO to establish and publish by 1 December 2020 a number of procedures, including:

- metrology procedures;
- Market Settlements and Transfer Solutions procedures;
- service level procedures; and
- procedures in respect of exemptions from data storage requirements.

We recommend that this date be brought forward to 1 December 2019. DNSPs need certainty of system and meter storage capacity requirements much earlier than the proposed date of 1 December 2020. The proposed date would only give impacted business 7 months to implement major system changes. Recent experience with the Power of Choice implementation has shown that businesses need at least a year from final procedures being published to go-live².

2.2 Demand based distribution and transmission pricing

In implementing the five minute settlement rule for market reasons there is a risk of distorting the network pricing framework by adopting 5-minute data for distribution and transmission pricing arrangements. AusNet Services recommends avoiding changes to distribution and transmission pricing arrangements.

The draft rule appears requires both distribution and transmission demand pricing to change to 5-minutes where the metering is recording 5 minute interval energy data. These demand pricing changes are effected by draft rule in the following ways.

- The draft rule removes the reference to DNSPs charging demand charges on a half hourly basis in clause 6.20.1(a)(2)(i) requires distribution demand pricing to change to 5 minutes;
- By not changing 6.20.1(e) to allow distribution network billing using 30-minute data where 5-minute settlements ready data or 5-minute metering data is available;
- By not changing to the definition of the Modified Load Export Charge (MLEC) Cost Reflective Network Pricing Methodology, which references the defined term of 'trading interval' the draft rule requires transmission demand pricing to change to 5 minutes.

Such changes to five-minute demand would increase volatility of customer demand quantities at each connection point. This increase in granularity would also likely increase customers demand measurements, does not appear to represent value either the distribution or transmission networks for the following reasons.

- Thermal loading on distribution and transmission assets is more affected by 30-minute or longer demand measurements;
- 5-minute demand is inherently more volatile; and
- this volatility is unlikely to represent a valid consumption trend until customers (representing the majority of consumption) have capabilities to rapidly respond to real time market signals.

Therefore, moving to 5-minute demand pricing is unnecessary and would potentially trigger demand exceedances that should not drive augmentation requirements. AusNet Services recommends that changes 6.20.1(e) to allow 30-minute demand pricing and removing the proposed change to clause 6.20.1(a)(2)(i).

² In the Power of Choice program businesses had about 9 months from B2B Procedures to go-live, although an AER facilitated a soft go-live was required to extend this further.

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2.3 Cost implications of needing to store 200 days of energy data

The current Rules require interval meters, types 4A or 5 meters to have 200 days memory capacity with a 30-minute trading interval, while the storage requirement for remotely interval read meters in NER 7.8.2 (a) (9) is 35 days. In interpreting table provided by the Commission to the ENA on 4 October (included in Appendix 1), the AEMC has made it clear that all new and replacement types 4, 4A and 5 meters need to deliver 5-minute data after 1 July 2021, installed post 1 December 2018.

This represents nearly a sixfold increase in the meters storage, which would increase meter costs. Types 4A and 5 meters are required to store 200 days of 5-minute energy data, including storage capacity required to deliver other separately energy quantities (e.g. dedicated circuits for controlled load) and the requirements of minimum services specification (e.g. storing average voltage). There are also circumstances where type 4 meters would need memory capacity to store 200 days of 5-minute energy data.

A complicating factor is metering providers, when installing type 4 meters, often do not know prior to installing a meter whether:

- there is adequate telecommunications service availability; or
- a small customer refuses to have a type 4 meter with remote access.

In the latter case, the metering installation would need to be altered to a type 4A metering installation, generally by disabling or physically removing the communications module. To mitigate the risk of retrospective meter replacements, metering providers may need to deploy the same physical meter for types 4 and 4A situations.

This issue can be addressed by altering the energy data minimum storage requirement for any meter type or to propose additional exemptions proposed in clause 7.8.2(a1) of the draft rule. It is recommended that the AEMC discusses with Metering Coordinators and industry stakeholders to determine whether all meter variants currently being provided for small customer metering can store 200 days of 5-minute energy data. It is clear that where small customer metering is remotely read or read on a monthly basis that 200 days of storage is not required.

We consider that there are three options to improve the above metering data storage issue:

- the requirement for 200 days of storage if the meter is read monthly or remotely read on a daily basis;
- exemptions specified in the draft rule, new clause 7.8.2 (a1), to include types 4A and 5 meters; and
- the 5-minute settlement rule to allow manually read types 4A and 5 meters continue with 200 days memory capacity and manual reads collecting 30-minute meter data.

We recommend the AEMC assess the meter storage capacity issue as to avoid the significant cost implications of restricting meter variants to high storage capacity meters and circumstances where the replacement of existing meters is required.

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2.4 Removing an issue preventing AMI meters from moving to 5-minute settlements

In Victoria, more than 2.8 million AMI meters have been installed and are providing daily read metering data to the market and a range of other AMI services. As mentioned above, the Victorian Government may determine there are benefits in requiring DNSPs convert AMI meters installed prior to 1 Dec 2018 to provide 5-minute data. Subject to the government determination, there may be up to 2.8 million providing 5-minute data on a daily basis to AEMO for settlement in the National Electricity Market.

In order to cost efficiently deliver this outcome, it is important that the data storage requirement in clause 7.8.2(a)(9) of the draft rule be extended to meters that are registered in the market as type 5 meters, but have remote data acquisition. In the draft rule, clause 7.8.2 (a1) excludes type 5 meters states:

“AEMO may exempt a Metering Provider at a connection point from complying with the data storage requirements under clause 7.8.2(a)(9) for types 1, 2, 3, and 4 metering installations installed prior to 1 July 2021. AEMO may only grant an exemption under this clause where it is reasonably satisfied that the Metering Provider will be able to otherwise satisfy the requirements of Chapter 7.”

Not all remotely read type 5 AMI interval meters may be able to meet the 200 day storage requirement, but could be re-configured to locally store a shorter period of energy data. In such circumstances, we would work with AEMO to mitigate any risks to the market, however AEMO would need a remit to provide the necessary exemption of the data storage requirements under clause 7.8.2(a)(9).

It is for this reason, AusNet Services recommends amending clause 7.8.2(a)(9) to include Victorian type 5 AMI meters as they have remote data acquisition, but registered in the market as type 5. Without this amendment AEMO may consider it is beyond their power to exempt type 5 AMI meters from complying with data storage requirements.

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Appendix 1: Table of updated policy intent provided by the AEMC Policy on 4 October 2017

Meter type	Treatment under 30 minute settlement	Proposed treatment under 5 minute settlement of meters installed before 1 Dec 2018	Proposed treatment under 5 minute settlement of new and replacement meters (installed after 1 Dec 2018)	Comment	Clause in draft rule
Type 1-3	30 minute data collected and used for settlement	From 1 July 2021, 5 minute data collected and used for settlement for all meters.	From 1 December 2018, all new and replacement meters must be capable of providing 5-minute data. From 1 July 2021, 5-minute data from these meters will be used for settlement.	Obligation on Metering Data Provider to provide 5-minute data from these meter types.	7.10.5(a) 11.100.4
Type 4 meters at transmission and wholesale boundaries	30 minute data collected and used for settlement	From 1 July 2021, 5 minute data collected and used for settlement.	From 1 December 2018, all new and replacement meters must be capable of providing 5-minute data. From 1 July 2021, 5 minute data from these meters used for settlement.		7.8.2 (b1) 11.100.4
Type 4 (all not included above); and Type 4A	30 minute data collected and used for settlement	30-minute data collected and profiled to 5-minute resolution using NSLP methodology.	From 1 December 2018, all new and replacement meters must be capable of providing 5- minute data. From 1 July 2021, 5 minute data from these meters used for settlement.		7.10.5(b) 11.100.4
Type 5	30 minute data collected and used for settlement	30-minute data collected and profiled to 5- minute resolution using NSLP methodology.	From 1 December 2018, all new and replacement meters must be capable of providing 5- minute data. From 1 July 2021, 5 minute data from these meters used for settlement.	The proposed rule does not specifically state type 5 meters must be replaced by a type 4 meter, rather requires that the new meters must provide 5- minute data.	7.10.5(b) 11.100.4
Type 6	Data collected quarterly and profiled to a 30 minute basis for settlement	Accumulated data is profiled to 5 meters using 5-minute resolution NSLP.	The NER currently states accumulation meter must be replaced by an interval meter. The proposed rule states from 1 December 2018, all new and replacement meters must be capable of providing 5- minute data. Additionally, from 1 July 2021, 5-minute data from these meters used for settlement.		7.10.5(b) 11.100.4

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Type 7	Unmetered loads calculated on 30 minute basis	Unmetered loads calculated on a 5-minute basis	Not applicable	Current clause 7.10.5(c)
Controlled load	Not in NER. Under AEMO Metrology Procedure, sample meters used to profile load to 30 minutes, in some jurisdictions.	To be confirmed during AEMO detailed design process.	Not applicable	AEMO is looking at options of calculating controlled load without sample meters. AEMO Level Design (3.2.2)