



# Standalone Power Systems (SAPS) – Identifying a SAPS NMI in MSATS

Final Report

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New South Wales | Queensland | South Australia | Victoria | Australian Capital Territory | Tasmania | Western Australia  
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## Executive summary

The publication of this final report (**Final Report**) concludes the standard consultation procedure (**Consultation**) conducted by AEMO to determine the proposed design options to support the SAPS Priority One Framework (**Proposal**) under the National Electricity Rules (**NER**).

AEMO thanks all stakeholders for their feedback on the Proposal.

During the Consultation, the Consulted Persons provided feedback to AEMO on the required changes (**Changes**) to the following procedures (**Procedures**) which are necessary to implement SAPS:

- Service Level Procedure (**SLP**): Metering Data Provider Services
- SLP: Metering Provider Services
- Metrology Procedure: Part B
- National Metering Identifier Procedure (**NMI Procedure**).

The feedback to AEMO on the first Draft Report and Determination (**First Draft Report**) raised a number of complex issues. On 2 August 2022, AEMO hosted a workshop with interested parties to work through those issues. AEMO proposed a different approach to the options proposed in the First Draft Report for the management of metering data and energy settlement within SAPS. AEMO also extended the date for publication of the second Draft Report and Determination (**Second Draft Report**), to provide the necessary time to consider the complex issues which had been raised.

### Identifying a SAPS NMI in MSATS

A National Metering Identifier (**NMI**) connected to a SAPS will have a different wholesale settlement price to other NMIs in a region. Accordingly, the NMI will need to be identifiable and discoverable by market participants and AEMO.

AEMO considered three options to enable a participant to identify a SAPS NMI in Market Settlement and Transfer Solutions (**MSATS**). The feedback on the First Draft Report was generally supportive of the option to identify SAPS NMIs using TNI Codes with special conventions or formats for SAPS TNI Codes. Accordingly, AEMO determined that it should proceed with this option, as the preferred approach.

### Management of metering data and energy settlement within SAPS

NER 7.16.3(c)(6)(iv) requires the Metrology Procedure to include the method to be used to determine the calculated metering data for a market connection point for a market generating unit in a regulated SAPS, which will result in the allocation of energy losses and unaccounted for energy in the regulated SAPS to the market generating units in the regulated SAPS on a reasonable basis. The metering installation type and the nature of the metering data at connection points within SAPS is a key consideration in determining the complexity and practical application of any method required in the Metrology Procedures. As any type of NEM metering installation might be moved within a SAPS, AEMO procedures would need to account for the conversion of non-5-minute metering data and the method of using the resulting data to determine settlement.

Initially, AEMO proposed three options to resolve the conversion of non-5-minute metering data, each of which required MDPs at SAPS generation NMIs to calculate SAPS generation metering data.

The feedback from respondents raised a number of issues in respect of the options, including the potential cost and complexity, time required for implementation, potential for significant delays to delivery of individual SAPS, potential for data mismatches, and low participation by MDPs, resulting in competition issues.

Accordingly, AEMO developed a further option which was presented at the workshop on 2 August 2022. This option involves the following roles and responsibilities:

- MDPs which operate in SAPS would provide metering data to participants as required for NMIs not connected to SAPS (as MDPs do currently, so no new requirements for MDPs).
- AEMO would convert non-5-minute metering data from end user connection points in SAPS (including Type 6 metering data) into 5-minute data using flat calculation methods (for example, 30-minute interval value divided into 6 equal 5-minute intervals).
- AEMO would then calculate the settlement amount to be applied to the generation NMI(s) within each SAPS by aggregating end user energy values.

Participants at the workshop were supportive of AEMO proceeding to publish the Second Draft Report with the proposed option as the preferred option.

AEMO's final determination is to amend the Procedures in the form published with this Final Report with the effective date of 30 May 2023.

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# 1. Stakeholder consultation process

AEMO conducted the Consultation as required by NER 7.16.7, following the procedure in NER 8.9.2.

AEMO's process and timeline for this Consultation are outlined below.

**Table 1 Consultation process and timeline**

Consultation steps	Dates
Issues Paper published	1 March 2022
First stage submissions closed	6 April 2022
Notice of second stage consultation and First Draft Report published	18 May 2022
Second stage submissions closed	2 June 2022
Notice of third stage consultation and Second Draft Report published	25 August 2022
Third stage submissions closed	22 September 2022
Final Report published	3 November 2022

This Final Report uses terms defined in the NER, which are intended to have the same meanings. There is a glossary of additional terms and abbreviations in Appendix A.

AEMO's webpage for the Consultation is at <https://aemo.com.au/consultations/current-and-closed-consultations/standalone-power-systems>. The webpage contains all published papers and reports, written submissions, and other relevant documents or reference material.

In response to the Issues Paper, AEMO received 15 written submissions. AEMO also held one meeting and two public forums.

AEMO considered these submissions and other relevant information in preparing the First Draft Report.

In response to the First Draft Report, AEMO received 15 written submissions. AEMO also held one meeting and one public forum.

The participants raised and discussed a range of issues, including the implications of the changes associated with Five Minute Settlement. The discussions enabled the participants to align on various issues, which include the need for the industry to provide feedback to AEMO on proposed changes to:

- The following procedures, as identified by the AEMC:
  - SLP: Metering Data Provider Services – including requirements for the receipt of metering data by the MDP for the generator(s) from the MDPs for the SAPS end user NMIs, and the delivery of metering data by the MDPs.
  - Metrology Procedure: Part A and Part B – including requirements for MDP appointment and the calculation of SAPS generation metering data.
- The following additional issues in various procedures:

- Registration requirements for a SAPS Resource Provider (**MSRP**), which is the new registration category for the party who is financially responsible for generating units within a SAPS.
- Accreditation/qualification procedure for the new category of SAPS MDPs.
- MDP appointment requirements.
- Calculation of the total generation by the MDP, i.e. who does estimation for missing NMI load data, if required.
- Profiling by SAPS generation MDPs.
- MDP processes at the MSRP NMI, where an MDP within a SAPS fails to provide metering data to the MDP at the MSRP NMI.
- AEMO and MDP processes at the MSRP NMI, where AEMO identifies a variance between the metering data for standard connection points within a SAPS and metering data for the generating units at the MSRP NMIs.
- Identification and use of methodologies treat missing SAPS end user NMI metering data by the MDP for the SAPS generator, where the MDP does estimation for missing SAPS end user NMI metering data.
- Calculation of metering data for MSRP connection points (i.e. SAPS generation NMIs), pursuant to the NER requirement that the MDP operating at MSRP NMIs is able to calculate the metering data as an aggregation of the metering data related to the connection points within the SAPS.

In response to the issues raised in the feedback to the First Draft Report, AEMO published the Second Draft Report for comment. In response to the Second Draft Report, AEMO received 7 written submissions. AEMO also held one meeting.

## 2. Background

### 2.1. Context for this consultation

AEMO is responsible for the establishment and maintenance of metering procedures specified in Chapter 7 except for procedures established and maintained under NER 7.17.

The procedures authorised by AEMO under NER Chapter 7 must be established and maintained by AEMO in accordance with the NER, including NER 7.16.7.

### 2.2. NER requirements

The AEMC's Final Report on Updating the Regulatory Frameworks for the Distributor Led Stand-Alone Power Systems (SAPS) Priority 1 sets out a national framework that facilitates the provision of SAPS by DNSPs to their existing customers, where these offer a lower cost substitute to investing in, and maintaining, traditional network solutions.

### 2.3. The national electricity objective

Within the specific requirements of the NER applicable to the Proposal, AEMO's determination is consistent with the national electricity objective (NEO). AEMO has selected the option which is best aligned with the NEO.

The NEO is expressed in section 7 of the National Electricity Law as:

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:

- (a) price, quality, safety, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.



### 3. List of material issues

The key material issues raised in submissions to the Second Draft Report are listed in Table 2. This Final Report only discusses those issues. The First Draft Report and the Second Draft Report set out AEMO’s consideration of the issues which arose at the earlier stages of the Consultation.

**Table 2 List of material issues**

No.	Issue	Raised by
1.	Embedded Generation	AEMO
2.	Metrology Procedure Part A clause 8(b) inclusion of the inspections by attributes method.	Multiple parties

A detailed table of issues raised by stakeholders in written submissions to the Second Draft Report, together with AEMO’s responses, is contained in Appendix B.

Each of the material issues in Table 2 is discussed in Section 4.

## 4. Discussion of material issues

### 4.1. Embedded Generation

#### 4.1.1. Issue summary and submissions

AEMO considered the potential for a generator to be connected to a SAPS other than a SAPS generator. Under this potential scenario, AEMO has considered:

- Whether such an arrangement might ever reasonably eventuate.
- How the metering for non-SAPS generation would be treated and how to ensure that it would not interfere with the settlement calculation for the SAPS generation.
- How to differentiate the non-SAPS generator from the SAPS generation in AEMO systems for NEM settlement, by using, for example, a flag or different NMI Classification Code.

#### 4.1.2. AEMO's assessment

The NER requires that a person must not sell electricity directly to the market at any connection point in a SAPS unless that person has registered as an MSRP. MSRPs must be appointed by the relevant DNSP. Accordingly, AEMO considers that it is extremely unlikely that the scenario being considered would eventuate.

The development of process and system functionality and the creation of independent identification (e.g. a flag or NMI Classification Code to identify a non-SAPS generator connected to a SAPS) would materially increase the time and cost which are required to implement SAPS. At a minimum, AEMO would need to update standing data requirements and the downstream systems that use that data.

Having engaged with a range of DNSPs on this matter, AEMO understands that no DNSP is currently planning or intending to establish a proposal that would involve the movement of a current Market Generator into a SAPS. AEMO also considers that it is extremely unlikely in the foreseeable future that a SAPS would have a need for a generator with a greater than 5MW capacity.

#### 4.1.3. AEMO's conclusion

AEMO has concluded that supporting functionality is not justified at this time, given:

- the functionality to identify and treat a non-SAPS generator in a SAPS would materially increase the cost, complexity and time to the delivery of SAPS; and
- the apparently very low likelihood of a SAPS being commissioned with such an arrangement in the foreseeable future.

AEMO would need to review, in conjunction with interested parties, the optimum method for identifying and differentiating generation connected to a SAPS, separate from the SAPS generation, if:

- such an arrangement be proposed by a DNSP's application for a SAPS in the future; and
- any such application was consistent with the prevailing NER requirements.

## 4.2. Change to Metrology Procedure Part A clause 8(b) – inspections by attributes method

### 4.2.1. Issue summary and submissions

In response to the Second Draft Report, a number of participants noted the following change to section 8(b) of the Metrology Procedure Part A:

(b) An acceptable alternative testing practice or test plan for in-service meter performance must demonstrate compliance with Australian Standard “AS 1284.13: Electricity Metering in service compliance testing” [using the “inspection by attributes” method](#).

Specifically, the participants noted that the proposed change:

- had not been discussed in the Second Draft Report, the First Draft Report or the Issues Paper;
- is not related to the matter under consultation, because it is not related to SAPS; and
- is a material change to the Procedures.

### 4.2.2. AEMO’s assessment

The Australian Standard for sample testing by variables was withdrawn several years ago. Accordingly, AEMO will no longer accept an approach based on sample testing by variables. Instead, AEMO requires any approach to use the sample testing by attributes method.

AEMO considers that the change is administrative only, given that it reflects the requirements of the current standard, as considered by AEMO when assessing related applications. In this context, AEMO considered that providing clarity through an administrative change to section 8(b) had merit, as the Metrology Procedure Part A was open for amendment.

However, the feedback to AEMO has indicated that the removal of the standard for sample testing by variables is not as well recognised by interested parties.

### 4.2.3. AEMO’s conclusion

AEMO included the change to section 8(b) to provide clarity for any party seeking to operate or propose an alternative testing practice or test plan for in-service meter performance. This matter has previously been raised at industry forums at which interested participants were represented. However, it is reasonable to consider that an explanation relating to the change should have been provided in the Second Draft Report.

AEMO considers that the rationale for the change has now been outlined and that the amendment is administrative in nature. Accordingly, AEMO has determined to retain the amendments to clause 8(b).

## 5. Other matters

### Allocating non-5-minute metering data to settlement intervals

For metering data that is not provided in 5-minute intervals, AEMO proposed to perform a simple process to convert the meter data in to 5-minute increments. For example, a 30-minute interval would be divided equally into six 5-minute intervals. In the Second Draft Report, AEMO compared this to a similar process being undertaken to support 5-Minute Settlement (5MS). AEMO proposed to perform this calculation on behalf of participants as a lower cost solution when compared to the other proposed solutions, which would require similar calculations to be performed by appropriately accredited MDPs.

A number of participants noted the Electricity Retail Consultative Forum (ERCF) subgroup currently that is reviewing the process for profiling, as it is applied to support 5MS, which would better account for spikes in energy use across a 30-minute interval, in particular where there are material variances in the spot price for energy within those 30 minutes. AEMO notes that while there are obvious similarities between conversion methods adopted to support 5MS and the proposed approach for SAPS, the lack of price variability within SAPS settlement is a key differentiator. An administered price applies within SAPS. Accordingly, the wholesale price is the same across all intervals within a financial year. As such, any inaccuracy in the allocation of energy volumes through the conversion method proposed in SAPS is moot, as all energy flows over any given 30-minute interval will attract the same price in settlement.

Further, AEMO considers that having separate clauses for conversion of non-5-minute interval metering data in SAPS to 5-minute is necessary at this stage, particularly because changes might be made as a result of the current ERCF review which might not be applicable or otherwise appropriate for SAPS.

### Allocating generation amounts when there is more than one SAPS generator

In the Second Draft Report, AEMO described a methodology for allocating generation volumes when there is more than one SAPS generator. In section 4.2.2, in discussing option C (AEMO's preferred option), AEMO articulated the method for determining a ratio to apply:

*“4. AEMO would reference the metering data from the generation NMIs to determine the ratio of energy to be attributed to each generation NMI in that SAPS for the given settlement trading week, should there be more than one generation connection point within the SAPS. For example, if NMI #123ABC was responsible for 60% of the energy injections into a SAPS over a trading week, 60% of the total energy value across the trading week in that SAPS would be assigned to NMI #123ABC. Again, this is consistent with the approach proposed by the AEMC in the AEMC Final Report for allocation in settlement where there is more than one generation NMI in a SAPS. “*

In circumstances in which a SAPS generator was to be added or removed within a settlement week, AEMO considers it more appropriate to pro-rata the generation for each **day**, as opposed to each **week**, to ensure that the generation volumes are allocated equitably. This is especially relevant when a settlement week overlaps the date for the change to the SAPS settlement price each financial year. The procedure has been amended to reflect this, as follows:

*“4. AEMO would reference the metering data from the generation NMIs to determine the ratio of energy to be attributed to each generation NMI in that SAPS for the given*

*settlement trading week, should there be more than one generation connection point within the SAPS. For example, if NMI #123ABC was responsible for 60% of the energy injections into a SAPS over a trading week-day, 60% of the total energy value across the trading week-day in that SAPS would be assigned to NMI #123ABC. Again, this is consistent with the approach proposed by the AEMC in the AEMC Final Report for allocation in settlement where there is more than one generation NMI in a SAPS. “*

## 6. Final determination on proposal

AEMO's final determination is to amend the Procedures in the form published with this Final Report.

### **Effective date**

The effective date of this determination is 30 May 2023.

## Appendix A. Glossary

Term or acronym	Meaning
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
DNSP	Distribution Network Service Provider
ERCF	Electricity Retail Consultative Forum
MDP	Metering Data Provider
MSRP	Marketer SAPS Resource Provider
NER	National Energy Rules
NMI	National Metering Identifier
SAPS	Standalone Power System
SLP	Service Level Procedure

## Appendix B. Summary of Submissions and Responses

No.	Question	Consulted person	Participant comment	AEMO response
1.	Metrology Procedure Part A			
2.	4.1.2	AGL	noted	
3.		Energy Queensland	Energy Queensland has no comment	
4.		Origin Energy	Origin has noted the update- No further comments	
5.		Red Energy and Lumo Energy	Red Energy and Lumo Energy (Red and Lumo) note the proposed change.	
6.		TasNetworks	Accepted	AEMO notes the respondent's comment.
7.	4.2	AGL	noted	
8.		Energy Queensland	Energy Queensland has no comment	
9.		Origin Energy	Origin has noted the update- No further comments	
10.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	
11.		TasNetworks	Accepted	AEMO notes the respondent's comment.
12.	8(b)	AGL	AGL notes that this seems to be a new item introduced at the second stage of this consultation, but which is not related to a SAPS process, nor identified in the Draft Report.  AGL is also unaware of any discussion at industry regarding this proposed change.	The Australian Standard "AS 1284.13: Electricity Metering in service compliance testing" was recently updated such that only the attributes



No.	Question	Consulted person	Participant comment	AEMO response
			<p>As such, AGL does not support this change as it</p> <ol style="list-style-type: none"> <li>1. Has not been discussed;</li> <li>2. Has nothing to do with a SAPS; and</li> <li>3. Was not covered off in either the initial or Draft report.</li> </ol>	<p>testing methodology is now acceptable under the standard. AEMO included reference to the attributes methodology only as a clarification of the existing requirements noting that inclusion of the change to the clause makes no change to the requirements of participants under the procedure. As such AEMO considers the change to not be material.</p>
13.		Energy Queensland	Energy Queensland has no comment	
14.		Origin Energy	Origin has noted the update- No further comments	
15.		PLUS ES	<p>PLUS ES recommends that this amendment should be removed from this consultation and if deemed required, included in a future consultation, as:</p> <ul style="list-style-type: none"> <li>• This change was introduced in the 2<sup>nd</sup> stage of the consultation</li> <li>• It could be deemed a ‘material’ change if participants are using a testing methodology other than ‘inspection by attributes’</li> <li>• Not identified in the Draft Report and Determination paper of the consultation and had the potential to be missed.</li> </ul> <p>Supporting industry transparency, PLUS ES proposes:</p> <ul style="list-style-type: none"> <li>• Increased visibility: All changes should be identified in the Issue Paper/draft determinations of each consultation, not only in document mark ups</li> <li>• Non editorial changes to be allowed a full consultation cycle – not included mid cycle, especially when the changes are not related to the main topic of the consultation. That is the industry allowed sufficient consultation</li> </ul>	<p>AEMO notes the respondent’s comment and refers to its response in item 12 above.</p>

No.	Question	Consulted person	Participant comment	AEMO response
			<p>timeframes and feedback opportunities to apply due diligence to proposed changes and E2E impacts analysis.</p> <p>Additionally, PLUS ES does not support the inclusion which constrains the testing methodology to the ‘inspection by attributes’ method, due to the following reasoning:</p> <p>Allowing <i>only</i> attributes for sample accuracy testing means it <i>excludes the opportunity</i> to do sample testing by variables, as detailed in AS1284.13. Testing by attributes requires higher quantities of testing in the field – as high as four times as much testing (and resulting in four times as many costs and customer inconvenience for supply interruptions) - even though the statistical result is the same.</p> <p>AS1284.13 already considers when inspection by variables can be applied - sample test results must be statistically normally distributed - which protects against incorrect application of the method. When it cannot be applied, then inspection by attributes is used.</p> <p>And while the variables method that is referenced in 1284.13 is from a withdrawn/superseded Standard (AS2490-1997), successor standards (ISO3951.1/2/4) remain current. Since the same method is described and the mathematics remain the same, it can be concluded that ‘inspection by variables’ is still valid.</p>	
16.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	
17.		TasNetworks	Accepted	
18.		Vector Metering	<p>It is unclear why this change has been included. Is this related to the scope of the SAPS consultation? We cannot see any narrative regarding this change in the draft reports.</p> <p>AS 1284.13 allows sample testing to be undertaken using either the ‘Attributes’ method or by ‘Variables’ methods, and also allows the process to switch between the two should the circumstances call for it.</p> <p>The proposed change will limit participants ability to do this, and participants who already have this built into their processes will need to change. As using the ‘Variables’ method is</p>	AEMO notes the respondent’s comment and refers to its response in item 12 above.

No.	Question	Consulted person	Participant comment	AEMO response
			permitted under the standard it is unclear why Metrology Part A. would remove this flexibility.  We recommend this to be removed from the consultation until such time engagement with impacted participants has occurred.	
19.	12.4(b)(iii)	AGL	Noted – but it is unclear why this clause is needed, as any generating unit connected post Dec 2018 must have a 5ms interval meter and said data must be provided to AEMO for settlement purposes, especially post Oct 2021.  If this clause is required, then does this mean there are gaps for other grid connected generating units ?	Sub-clause (iii) was added to clarify that SAPS generator NMIs must have a metering installation.
20.		Energy Queensland	Energy Queensland has no comment	
21.		Origin Energy	Origin has noted the update- No further comments	
22.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	
23.		TasNetworks	Accepted	AEMO notes the respondent's comment.
24.	12.6	AGL	Noted	
25.		Energy Queensland	Energy Queensland has no comment	
26.		Origin Energy	Origin has noted the update- No further comments	
27.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	

No.	Question	Consulted person	Participant comment	AEMO response
28.		TasNetworks	Accepted	AEMO notes the respondent's comment.
29.	<b>Metrology Procedures Part B</b>			
30.	15.1	AGL	<p>AGL notes the proposed process for calculation and apportionment of SAPS generation is based on summing the end user consumption and then applying the aggregated TI Load to the market generation.</p> <p>As such, AGL is unclear why there would be no metering data for some of the SAPS generation, barring some sort of data recording / collection failure, in which case it would be expected that substituted meter data would be provided.</p> <p>AGL understands that this apportionment to the SAPS generation is to ensure that the Rule requirement that DLF losses and UFE do not occur within a SAPS environment.</p> <p>However, AGL does have concerns with this methodology, when applied to accumulation meters. No process will provide a close estimation of an accumulated meter consumption, particularly in a closed environment with a sample of accumulated energy consumption ranging from perhaps 1 to 3 sites.</p> <p>AGL does not consider that the aggregation of consumption where there are accumulation meters will work effectively in such an environment and may lead to unreasonable financial outcomes for the SAPS Generation FRMP.</p> <p>Where there are accumulation meters in a SAPS environment, an estimate of their consumption is the remaining generation after any other interval metered consumption has been removed, rather than apportioning generation based on accumulation meter data, and as such, would not include DLF or UFE.</p>	<p>AEMO assumes that AGL is anticipating that there is some form of peel off process using the generation data as the source upon which accumulation data profiling is to be determined.</p> <p>This approach has been discounted for the following reasons:</p> <ol style="list-style-type: none"> <li>1. it would by default assign UFE and Losses to retailers for accumulation metered sites (and would breach the rule requirement).</li> <li>2. would require profiling which has no material value in a SAPS due to fixed spot price</li> <li>3. cost of implementation of this process, that would only apply in practice for SAPS that included accumulation metering installations would be material in comparison with the model proposed by AEMO.</li> </ol>
31.		Energy Queensland	Energy Queensland has no comment	
32.		Origin Energy	Origin agrees with the calculation of energy for SAPS generating unit..	If data is provided within the settlements window (including

No.	Question	Consulted person	Participant comment	AEMO response
			<p>Origin also notes and approves of the method of apportioning of the data where there is more than 1 SAPS generating unit.</p> <p>However, Origin would like to understand in instance where the metering data is sent late by one of the SAPS generating unit and all the data from the regulated SAPS is allocated to the other generating unit that has provided the metering data, if the metering data is received at a later date will the apportioning of data be updated accordingly and allocated to both the generating units? Or once the metering data has been apportioned to the generating unit any change /update in data will not impact the allocation and the data will not be revised?</p>	<p>revisions) it will be included in a subsequent settlement run and settlement would be adjusted accordingly.</p>
33.		Red Energy and Lumo Energy	<p>AEMO proposes to aggregate every Trading Interval to determine the market generating unit's energy total using the following approach: (generation)TI = (interval Data)TI + (accumulation Data). It remains unclear how AEMO will account for UFE &amp; unmetered sites energy usage. Red and Lumo request that AEMO provide this information to participants and other interested parties for their consideration and feedback.</p> <p>AEMO proposes where no metering data is provided for any generating unit connected to the regulated SAPS, it will simply apportion energy equally to all generating units. However, for missing metering data, substitution data should be provided which can be reconciled by identifying the missing energy between: (total generation) = (interval) + (accumulation data) which should net to zero.</p>	<p>AEMO has noted in section 4.2 of the second draft determination a reference that in the AEMC final report (section 3.5.2) principles for energy settlement within SAPS are that:</p> <ul style="list-style-type: none"> <li>• No loss factors are to be applied (1.0)</li> <li>• Settlement must always be balanced with withdrawals matching injections</li> <li>• Any actual losses will be the responsibility of generators within SAPS.</li> <li>• The settlement mechanism described in the procedure meets the above requirements.</li> </ul> <p>The allocation method that we have proposed is a simplistic low-cost solution will apply unless and until</p>

No.	Question	Consulted person	Participant comment	AEMO response
				data is provided within the settlement window (including revisions).
34.		TasNetworks	Accepted	AEMO notes the respondent's comment.
35.	15.1(c)(i)	PLUS ES	PLUS ES recommends that this clause should be reviewed and restructured/reworded as it is too long and complex to follow.	AEMO notes the respondent's comment. AEMO is satisfied that the clause adequately directs AEMO in its application.
36.	15.2	AGL	<p>The proposed profiling is a basic divide by 6 or divide by 3 process, but AGL does not consider this adequate as it stands. A working group review of the NEM 30/15 profiling processes is underway, with an expectation that the profiling mechanism will be adjusted following consultation.</p> <p>As such, AGL suggests that this section either be deleted or just referred back to CI 12, which details the process for profiling 30/15 interval data to 5ms interval data.</p>	AEMO notes the respondent's comment. AEMO recognises that this issue is currently under review. However, the SAPS settlement process is separate and different due to the application of the regulated spot price in a SAPS. Note also that having separate clauses allows AEMO to consider whether any of the changes that may come about through other reviews need to apply to SAPS and can reconsider with industry at that time.
37.		Energy Queensland	Energy Queensland has no comment	
38.		Origin Energy	The conversion of 15/30 min interval data to 5 min interval data is consistent with the current conversions of data for the NON SAPS NMI's. Origin agrees with the conversion on non 5-min interval data to 5 min interval data.	AEMO notes the respondent's comment.

No.	Question	Consulted person	Participant comment	AEMO response
39.		PLUS ES	<p>Clause (a) – typo</p> <p>Replace semi-colon with a colon.</p>	AEMO notes the respondent's comment, the clause has been amended.
40.		Red Energy and Lumo Energy	<p>Red and Lumo do not deem the approach of converting 30 and 15 mins to 5 mins by dividing by 6 and 3 respectively as an efficient methodology. As AEMO would be aware, there is currently an ERCF sub-working group working with AEMO to review the process for profiling - taking into account spikes in energy use during a 30 mins interval.</p> <p>Red and Lumo strongly recommend for this clause (15.2) to refer back to the relevant clause in this procedure (clause 12). This will future proof the process, avoid AEMO needing to update the procedures in multiple places and prevent inconsistencies which may arise as the procedures are amended. This will also ensure a consistent approach is applied to consumers across the NEM, irrespective of where they receive their energy from.</p>	AEMO notes the respondent's comment and refers to its response in item 36 above.
41.		TasNetworks	Accepted	
42.	15.3	AGL	<p>AGL considers that the proposed energy calculation needs more clarity in the processes to be used. A SAPS system is a closed energy system; which means that energy consumed must equal energy generated, that is, the net energy must equal zero within a SAPS.</p> <p>A SAPS system may have a mix of metering within the system: 5ms interval, 30/15 ms interval and accumulation.</p> <p>Wholesale settlements is undertaken fortnightly. Under normal metering arrangements, any remotely read interval metering data should be available each day; however, accumulation metering data will not be available until perhaps 3 months later.</p> <p>Since a SAPS environment must net to zero, then every Trading Interval would look like:</p> $\Sigma(\text{generation})\text{TI} = \Sigma(\text{interval Data})\text{TI} + \Sigma(\text{accumulation Data})$ <p>Or, to put it another way, any accumulation consumption is what is remaining after the interval data has been removed from the generation data for each TI.</p>	AEMO notes the respondent's comment and refers to its response in item 36 above.

No.	Question	Consulted person	Participant comment	AEMO response
			<p>In order to balance the SAPS generation and consumption, the accumulation data should be initially calculated as the remaining quantity (per TI) after the interval consumption is subtracted from the interval generation. If there are multiple accumulation meters, then some sort of further split should be made of the accumulation streams between any accumulation meters, taking into account that some may be controlled load or have non-standard consumption cycles.</p> <p>As such, the proposed procedure for calculating the accumulation energy flow per TI as described in the procedure is not likely to work adequately, could lead to unexpected outcomes for the FRMP at the SAPS generation.</p>	
43.		Energy Queensland	Energy Queensland is of the view that calculation methods used should identify that the methodology is applied to actual reads and MDP provided forward estimates.	AEMO notes the respondent's comment and confirms that this is the approach, however, it is not required to be added to Metrology Procedure Part B as the requirement for MDPs to provide AEMO with validated actual meter readings is specified in MDP Service Level Procedure section 3.12.2.
44.		Origin Energy	<p>Origin agrees with the conversion of accumulation metering data on a SAPS to 5 min interval data using the flat calculation method.</p> <p>Origin further understands and acknowledges AEMO decision to use the flat calculation method instead of the more complex profiling calculation method</p>	AEMO notes the respondent's comment.
45.		Red Energy and Lumo Energy	<p>Within a SAPS, the energy generated should equate the energy consumed – meaning both will net to zero. In no instance will there be a discrepancy between the two - whether that is additional consumption above what has been generated, and no generation not accounted for in consumption.</p> <p>Red and Lumo recommend that it may be more appropriate to take away the interval total from the generation total, and consider the left over total from the generation to be the</p>	AEMO notes the respondent's comment and refers to its response in item 36 above.



No.	Question	Consulted person	Participant comment	AEMO response
			accumulation total. Following a consistent approach as aligned in our commentary against clauses 15.1 and 15.2.	
46.		TasNetworks	Accepted	AEMO notes the respondent's comment.
47.	<b>MSATS National Metering Identifier</b>			
48.	10	AGL	Noted	
49.		Energy Queensland	Energy Queensland has no comment	
50.		Origin Energy	Origin agrees that the NMI Procedure is the most appropriate procedure for the inclusion of the TNI Naming convention.  Origin notes the updates made to the NMI procedures and the determination of the characters for the TNI naming convention.	AEMO notes the respondent's comment.
51.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	
52.		TasNetworks	Accepted	AEMO notes the respondent's comment.
53.	11	AGL	Noted	
54.		Energy Queensland	Energy Queensland supports the naming convention for SAPS TNIs	AEMO notes the respondent's comment.
55.		Origin Energy	Same as above	AEMO notes the respondent's comment.
56.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	

No.	Question	Consulted person	Participant comment	AEMO response
57.		TasNetworks	Accepted	AEMO notes the respondent's comment.
58.	12	AGL	Noted	
59.		Energy Queensland	Energy Queensland suggests market notifications advising of the intention to connect an existing customer to a DNSP-led SAPS should be sent by the DNSP to AEMO and the FRMP so that the FRMP can appropriately assess impacts to any load variations.	Participants will be advised in advance of a SAPS TNI creation and subsequent NMI connection to a SAPS via MSATS notifications.  Affected parties should also be part of the AER process of obtaining approval for a SAPS.
60.		Origin Energy	Origin would suggest the below changes to section 12.a.(v) & 12.a.(vi). Origin would like the retailer & MC to be informed at the same time as AEMO. This will give the Retailer/MC time to identify all the NMI's associated with the SAPS and ensure they are set up in the system.  (v) Advise AEMO, the FRMP & MC of proposed SAPS operational date at least 10 business days before the SAPS is operational.  (vi) Provide AEMO, the FRMP & MC with confirmation of the actual SAPS operational date within two business days of the SAPS becoming operational.	AEMO notes the respondent's comment and refers to its response in item 59.  AEMO agrees with the change proposed by Origin.
61.		Red Energy and Lumo Energy	Red and Lumo recommend AEMO consider and document what happens should there be a delay (temporary or long term) at any stage of this process.  Further, AEMO must consider and propose a process for NMIs migrating away from a SAPS and back to grid connected.	AEMO notes the respondent's comment. AEMO agrees and has added clause/s for removal of SAPS (NMIs reverting to direct connection).
62.		TasNetworks	12(a)(iv) It may not be appropriate to allocate the SAPS TNI code to existing End User NMI's until after the SAPS becomes operational, unless it is expected that a new NMI will be required for existing End User connection/s entering a SAPS. Assuming not, then it is expected that the End User NMI will need to have its existing TNI allocated up to, and	AEMO notes the respondent's comment and considers that the Change Request (CR) used to allocate the SAPS TNI should be prospective CR.

No.	Question	Consulted person	Participant comment	AEMO response
			<p>including, the day prior to the SAPS operational effective date to facilitate normal market settlement load allocation and UFE processes.</p> <p>12(a)(vi) How is it intended that the DNSP advise AEMO? TasNetworks feel it is appropriate that this is done via MSATS CATS notifications to update the NMI Status, correct? Further, for consistency with LNSP obligations of updating a NMI Status Code (as per MSATS CATS clause 2.3), TasNetworks consider that this should be five business days, not two as stated.</p>	<p>Updating market participants is via the CR notification process for the prospective CR.</p> <p>AEMO does not agree with the proposal to reduce the time from 5 days to 2 noting that this clause applies to SAPS and that we anticipate many participants will use manual work processes for SAPS in the short term.</p>
63.	12(a)	PLUS ES	<p>Clause (a)</p> <p>PLUS ES recommends that the condition 'Where a DNSP has obtained approval to deploy a SAPS' is clarified for completeness. That is, identify from whom the DNSP needs to get approval.</p>	<p>AEMO notes the respondent's comment. The approval process is described in the Rules, AEMO doesn't consider is useful to replicate that in a procedure.</p>
64.	12(a)(ii) and (a)(iv)	PLUS ES	<p>Clause (a)(ii) &amp; (a)(iv)</p> <p>For consistency, PLUS ES propose replacing 'by five business days' with 'at least five business days'; as reflected in clause (a)(v).</p>	<p>AEMO notes the respondent's comment and agrees with the proposal, the clause has been updated accordingly.</p>
65.	12(a)(iii)	PLUS ES	<p>Clause (a)(iii)</p> <p>PLUS ES recommend the following:</p> <ul style="list-style-type: none"> <li>For efficiency, the wording '<b>created in (ii)</b>' is removed as it is redundant.</li> </ul> <p>For clarity, the clause should define '<b>inactive</b>' as that is not a current NMI status code. For example, if the intent is to have them as a Greenfield status, then the clause to be reworded to state that.</p>	<p>AEMO notes the respondent's comment but considers that the existing wording "created in (ii)" provides adequate clarity as is.</p> <p>AEMO does agree that "inactive" should be changed and updated in the procedure to ensure the SAPS generator NMI(s) created in (ii) are De-energised or Greenfield, as</p>

No.	Question	Consulted person	Participant comment	AEMO response
				appropriate, in MSATS until the SAPS is operational.
66.	13	AGL	It would be worthwhile to consider the steps necessary to undertake a reversal, to determine whether there is an implication or process issue that may cause unintended consequences, noting that a SAPS implementation may be delayed or cancelled, or as small SAPS system may grow to a much larger environment requiring / allowing a grid connection.	AEMO notes the respondent's comment and refers to its response in item 59.
67.		Energy Queensland	Energy Queensland has no comment	
68.		Origin Energy	Question?  Origin suggests to include this section in the procedure as well. Origin believes at this stage it is difficult to determine the probability of how often a SAPS NMI will migrate to the Grid however believes this cannot be ruled out. Origin would like this included in the procedure to provide the required process/guidance in an instance when a SAPS NMI migrates to the GRID.	AEMO notes the respondent's comment and refers to its response in item 59.
69.		Red Energy and Lumo Energy	Red and Lumo request for the 'Version Release History' to be moved to the top of the document for consistency with other procedure papers.	AEMO is in the process of refreshing its procedure templates which will provide that consistency across all AEMO documentation.
70.		TasNetworks	TasNetworks does not believe such section is required. Should a SAPS NMI return to a Grid supply arrangement, it is anticipated existing CATS processes would prevail to assign the appropriate Grid TNI Code to the NMI from the relevant date.	AEMO notes the respondent's comment and refers to its response in item 59.
71.	SLP MDP Services			
72.	3.9	AGL	Cannot identify change described in this consultation - apart from changes of Uppercase to Lowercase	AEMO notes the respondent's comment, there was a mistake in the template.

No.	Question	Consulted person	Participant comment	AEMO response
			<p><b>3.9. Specific metering data processing requirements for Special Sites</b></p> <p>Subject to an MDP's level of accreditation and system capability to manage <i>interconnectors</i>, <i>transmission connection points</i>, <i>generation connection points</i> and cross boundary/border supply points between <i>distribution networks</i> or <i>Local Retailer</i> regions, each MDP must:</p> <ul style="list-style-type: none"> <li>(a) perform <i>transformer</i> or line loss compensation algorithms, or both, to compensate for losses between the <i>metering point</i> and the <i>connection point</i>;</li> <li>(b) perform calculations of Datastreams for the requirements of each Special Site;</li> <li>(c) perform nodal <i>check metering data</i> Validation and Substitution;</li> <li>(d) undertake SCADA data Validation and Substitution for <i>generation connection points</i>;</li> <li>(e) manage logical <i>meters</i> and nested logical <i>metering data</i> calculations;</li> <li>(f) handle threshold test variances to equations such as the use of 'If Then Else' statements; and</li> <li>(g) any combination of the above.</li> </ul> <p>Each MDP must ensure that any algorithm in support of a logical <i>NMI</i> is accepted by the MC, AEMO, FRMP and LNSP before being used.</p>	
73.		Energy Queensland	Energy Queensland suggests there is an opportunity to expand the conditions relevant to the definition of special sites to include SAPS.	AEMO notes the respondent's comment. AEMO has designed the application of the SAPS rule in retail market systems such that, from the MDP perspective, there are no special requirements for SAPS.
74.		Origin Energy	Origin notes and agrees with the update however the marked up procedure does not include SAPS as mentioned in the description.	AEMO notes the respondent's comment and refers to its response in item 72.

No.	Question	Consulted person	Participant comment	AEMO response
75.		PLUS ES	PLUS ES believes this change has not been made in the MDP SLP.	AEMO notes the respondent's comment and refers to its response in item 72.
76.		Red Energy and Lumo Energy	Red and Lumo do not see the inclusion of SAPS in the header. Can AEMO please review?	AEMO notes the respondent's comment and refers to its response in item 72.
77.		TasNetworks	Change not reflected in marked-up version of document. Suspect this is not required given there is no longer any new obligations on MDP's based on AEMO's proposed option C.	AEMO notes the respondent's comment and refers to its response in item 72.
78.				
79.	7.4	AGL	noted	
80.		Energy Queensland	Energy Queensland has no comment	
81.		Origin Energy	Review of Accreditation- Origin has noted the update- No further comments	
82.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	
83.		TasNetworks	Accepted	AEMO notes the respondent's comment.
84.	<b>SLP MP services</b>			
85.	6.4 (d)	AGL	noted	
86.		Energy Queensland	Energy Queensland has no comment	
87.		Origin Energy	Origin has noted the update- No further comments	

No.	Question	Consulted person	Participant comment	AEMO response
88.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	
89.		TasNetworks	Accepted	AEMO notes the respondent's comment.
90.	6.4 (e)	AGL	noted	
91.		Energy Queensland	Energy Queensland supports the proposed changes to s 6.4(e) of the Service Level Procedure for Metering Provider Services.	AEMO notes the respondent's comment.
92.		Origin Energy	Origin has noted the update- No further comments	
93.		PLUS ES	PLUS ES suggests for clarity and consistency, if there is an update in terminology from <i>significant</i> to <i>material</i> in clause 6.4 (d), extending that update in terminology to Clause 6.4(e).	AEMO notes the respondent's comment and agrees that the clause should be updated for consistency.
94.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	
95.		TasNetworks	Accepted	AEMO notes the respondent's comment.
96.	6.4 (f)	AGL	noted	
97.		Energy Queensland	Energy Queensland supports the proposed changes to s 6.4(f) of the Service Level Procedure for Metering Provider Services.	AEMO notes the respondent's comment.
98.		Origin Energy	Origin has noted the update- No further comments	
99.		Red Energy and Lumo Energy	Red and Lumo note the proposed change.	
100.		TasNetworks	Accepted	AEMO notes the respondent's comment.

No.	Question	Consulted person	Participant comment	AEMO response
101.	Other Comments Related to Consultation Subject Matter	Energy Queensland	<p>Energy Queensland suggests the inclusion of the SAPS settlement process, such as the administered pricing and calculation methods for type 6 metering, should be published under a new section of the NEM Settlements Process<sup>1</sup>.</p> <p>Further, Energy Queensland recommends the NEM Settlements Process be reviewed and expanded to provide additional information, similar to version 8 of the WEM Procedure: Settlements.</p>	AEMO notes the respondent's comment. AEMO will consider changes required to documents not subject to this consultation.
102.		Origin Energy	<p>Origin understands issues have been identified with the current 5MLP system. AEMO is currently considering a "Fit for purpose" methodology. Origin would like to confirm that this will not impact the proposed calculation and conversion of Non 5min interval data to 5 min interval data.</p> <p>Origin understands there are current NMI's associated with SAPS. Origin is keen to understand will these SAPS NMI be moved to a different TNI based on the new TNI naming convention and if Yes when will these be updated?</p> <p>Once a SAPS is operative if a NMI that is connected to the Grid is moved to a SAPS will the process of advising AEMO/Retailer be included in the section 12.a.(v) &amp; 12.a.(vi) of MSATS National Metering Identifier.</p>	<p>AEMO notes the respondent's comment and refers to its response in item 36.</p> <p>AEMO notes that there are no NMIs connected to SAPS currently. If, for example, Origin is referring to the isolated networks in Queensland, these are not part of the NEM. Any SAPS NMIs created through the transitional NER provisions will have to comply with the transitional chapter 11 rules.</p>
103.		PLUS ES	Participant IDs - For industry efficiency, PLUS ES recommends that LNSPs wanting to act in the role of FRMP, for regulated SAPS, should have a separate Participant ID to that of their LNSP role.	AEMO notes the respondent's comment.
104.		Red Energy and Lumo Energy	<p>Red and Lumo recommend AEMO differentiate between administrative changes and procedural changes in the marked up versions of procedural documents.</p> <p>The amended procedures contained a large volume of changes which we consider administrative in nature (i.e. decapitalisation of words in headers), which at times made it</p>	AEMO notes the respondent's comment. AEMO will consider this for future consultation processes.





No.	Question	Consulted person	Participant comment	AEMO response
			<p>cumbersome to review the document for procedural changes. This can easily lead to a change having been missed, by either participants or AEMO - example as mentioned above for the SLP MDP Services, section 3.9 where the change in header to include SAPS does not actually exist. In these circumstances, it is prudent for AEMO to be more transparent and highlight non-administrative changes in the document through the use of technology, such as highlighting the substantive changes.</p>	