MSATS STANDING DATA REVIEW

DRAFT REPORT AND DETERMINATION

Published: **May 2020**

NOTICE OF SECOND STAGE CONSULTATION – MSATS STANDING DATA REVIEW

National Electricity Rules – Rule 8.9

Date of Notice: 14 May 2020

This notice informs all Registered Participants, Metering Providers, Metering Data Providers, Embedded Network Managers, Ministers and the Australian Energy Regulator (AER) (Consulted Persons) that AEMO is conducting a consultation on proposed amendments to the Market Settlement and Transfer Solution (MSATS) Procedures as part of proposed changes to MSATS Standing Data in the National Electricity Market (NEM).

This consultation is being conducted under clause 7.16.7 of the National Electricity Rules (NER), in accordance with the Rules consultation requirements detailed in rule 8.9 of the NER.

Invitation to make Submissions

AEMO invites written submissions on this Draft Report and Determination (Draft Report).

Please identify any parts of your submission that you wish to remain confidential, and explain why. AEMO may still publish that information if it does not consider it to be confidential, but will consult with you before doing so.

Consulted Persons should note that material identified as confidential may be given less weight in the decision-making process than material that is published.

Closing Date and Time

Submissions in response to this Notice of Second Stage of Rules Consultation should be sent by email to NEM.Retailprocedureconsultations@aemo.com.au, to reach AEMO by 5.00pm (Melbourne time) on 5 June 2020.

All submissions must be forwarded in electronic format (both pdf and Word). Please send any queries about this consultation to the same email address.

Submissions received after the closing date and time will not be valid, and AEMO is not obliged to consider them. Any late submissions should explain the reason for lateness and the detriment to you if AEMO does not consider your submission.

Publication

All submissions will be published on AEMO's website, other than confidential content.

EXECUTIVE SUMMARY

The publication of this Draft Report and Determination (Draft Report) commences the second stage of the Rules consultation process conducted by AEMO on proposed amendments to the Market Settlement and Transfer Solution (MSATS) as part of proposed changes to the MSATS Standing Data in the National Electricity Market (NEM).

On 24 February 2020, AEMO published the Notice of First Stage Consultation and the Issues Paper for this package of amendments, called the MSATS Standing Data Review (MSDR). The Issues Paper detailed proposed changes which involved the addition of, updates to, or removal of fields in the MSATS Procedures in respect of data in the following information categories:

- Metering Installation Information within the Metering Register Information:
    - General metering installation information.
    - Metering installation transformer information.
    - Register-level information.
    - Connection and metering point details.
    - Metering installation location information.
    - Meter read and estimation information.
    - Meter communications information.
- NMI Details within MSATS:
    - Address Structure.
    - Feeder Class.
    - Transmission Node Identifier 2.

AEMO has also included information in the Issues Paper relating to a possible rule change proposal regarding NER Schedule 7.1. AEMO considers that this rule change would enable flexibility in relation to data requirements under the MSATS Procedures. It was noted that the information provided regarding the possible rule change does not form part of the MSDR consultation. If AEMO determines that the rule change proposal is to be progressed, it will be the subject of appropriate and necessary consultation at the relevant time (most likely to be submitted prior to the AEMC's review of Competition in Metering due to commence in late 2020).

AEMO received 23 submissions (including two late submissions) from retailers, customer advocates, Distribution Network Service Providers (DNSPs), Meter Providers (MPs), Metering Data Providers (MDPs) ombudsmen and the Australian Competition and Consumer Commission (ACCC). Copies of all written submissions (excluding any confidential information) have been published on AEMO's website at https://aemo.com.au/consultations/current-and-closed-consultations/msats-standing-data-review.

Based on material provided in these submissions and its own analysis, AEMO identified 10 material issues and two new matters. These are addressed in this Draft Report, under the topics of:

- Meter Malfunction Exemption Details.
- Type 4A Metering Installation (MRAM) Reason.
- Metering Installation Transformer Information.
- Metering Installation Connection Configuration Details.
- Shared Fuse Details.

- Global Positioning System (GPS) Coordinates.
- Network Additional Information field.
- Whether Delivery Point Identifier (DPID) is still required if Geocoded National Address File (G-NAF) Persistent Identifier (PID) added.
- Add G-NAF PID and add Section and Deposited Plan (DP) Number.
- Data Transition.
- Consumer Data Right (CDR).
- Network Tariff Code (NTC).

After considering the submissions and evaluating comments against the requirements of the NER and the Amending Rules, AEMO's draft determination proposes amending various clauses in the MSATS Procedures and the Standing Data for MSATS Guideline.

Based on feedback from the submissions, there is general agreement on a number of the changes proposed to Standing Data by AEMO. These are summarised in the following table.

Change Type	Information Category	Field Name	AEMO's Conclusion
To Amend	General Metering Installation Information	Last Test Date	Field definition to be clarified to refer to testing only and the field be made 'Required'. Data quality to be maintained by validating it according to date format.
To Amend	General Metering Installation Information	Meter Test Result Accuracy	Field to be made 'Required' and renamed from. 'Meter Test Result Accuracy' to 'Meter Test Result'. The field will be enumerated to indicate Pass or Fail.
To Amend	General Metering Installation Information	Meter Manufacturer	Field to be made 'Mandatory' with an itemised list of regular compulsory updates.
To Amend	General Metering Installation Information	Meter Model	Field to be made 'Mandatory' with an itemised list of regular compulsory updates.
To Amend	General Metering Installation Information	Meter Read Type Code	Field made 'Mandatory' and fourth character to identify whether meter capable of reading at five-minute granularity.
To Amend	General Metering Installation Information	Meter Suffix	No change, AEMO notes that this field has always been 'Mandatory' and no change is required here.
To Amend	General Metering Installation Information	Meter Use	Field to be made 'Required' with an enumerated list of values
To Remove	General Metering Installation Information	Asset Management Plan	Field to be removed
To Remove	General Metering Installation Information	Calibration Tables	Field to be removed
To Remove	General Metering Installation Information	Meter Constant	Field to be removed

Change Type	Information Category	Field Name	AEMO's Conclusion
To Remove	General Metering Installation Information	Meter Point	Field to be removed
To Remove	General Metering Installation Information	Meter Program	Field to be removed
To Remove	General Metering Installation Information	Meter Route	Field to be removed
To Remove	General Metering Installation Information	Meter Test & Calibration Program	Field to be removed
To Remove	General Metering Installation Information	Meter Test Result Notes	Field to be removed
To Remove	General Metering Installation Information	Next Test Date	Field to be removed
To Remove	General Metering Installation Information	Test Performed By	Field to be removed
Proposed Field	General Metering Installation Information	Disconnection Method	Field not to be added
Proposed Field	General Metering Installation Information	Meter Commission Date	Field not to be added
Proposed Field	General Metering Installation Information	Meter Locks	Field not to be added
Proposed Field	General Metering Installation Information	Minimum interval length	Field not to be added
Proposed Field	General Metering Installation Information	Meter Family Failure	Field not to be added
Proposed Field	General Metering Installation Information	Meter Test Report	Field not to be added
Proposed Field	General Metering Installation Information	Plug-in Meter Flag	Field not to be added
To Amend	Register Level Information	Controlled Load	Make field with enumerated list
To Amend	Register Level Information	Time of Day	Make field with enumerated list
To Remove	Register Level Information	Demand 1	Field to be removed
To Remove	Register Level Information	Demand 2	Field to be removed
To Remove	Metering Installation Location Information	Additional Site Information	Field to be removed and contents moved to the existing field Meter Location
To Amend	Metering Installation Location Information	Meter Location	Increase field size to accommodate data from Additional Site Information
To Amend	Meter Read Estimation Information	Next Scheduled Read Date	Modify field from 'Optional' to 'Required' for all manually read meters
To Remove	Meter Read Estimation Information	Data Validations	Field to be removed
To Remove	Meter Read Estimation Information	Estimation Instructions	Field to be removed
To Remove	Meter Read Estimation Information	Measurement Type	Field to be removed

Change Type	Information Category	Field Name	AEMO's Conclusion
To Remove	Meter Communications Information	Communications Equipment Type	Field to be removed
To Remove	Meter Communications Information	Communication Protocol	Field to be removed
To Remove	Meter Communications Information	Data Conversion	Field to be removed
To Remove	Meter Communications Information	Password	Field to be removed
To Remove	Meter Communications Information	Remote Phone Number	Field to be removed
To Remove	Meter Communications Information	User Access Rights	Field to be removed
To Remove	Address Structure	Unstructured Address	Field to be removed
Proposed Field	Address Structure	G-NAF PID	Field to be added
To Amend	Feeder Class	Feeder Class	Field to be made 'Required' for Queensland
Proposed Field	Transmission Node Identifier 2	Transmission Node Identifier 2	Field to be added
Propose To Remove	NER Schedule 7.1	Loss compensation calculation details	Field to be proposed to be removed from Schedule 7.1.2
Propose To Remove	NER Schedule 7.1	Data register coding details	Field to be proposed to be removed from Schedule 7.1.2
Propose To Remove	NER Schedule 7.1	Write' password (to be contained in a hidden or protected field)	Field to be proposed to be removed from Schedule 7.1.2

AEMO's draft determination is to amend the retail electricity procedures in the form published with this Draft Report. AEMO proposes the changes will take effect on the dates nominated in each version of the procedures and guidelines.

CONTENTS

1. STAKEHOLDER CONSULTATION PROCESS

AEMO is conducting a consultation on the changes proposed to standing data of the MSATS Procedures in accordance with the Rules consultation requirements detailed in clause 8.9 of the NER.

AEMO previously advised that it had extended the date for publication of the draft determination and procedures for the MSDR from Thursday 30 April 2020 to Thursday 14 May 2020. The extension was required for AEMO to consider and evaluate the complex issues arising from stakeholder submissions provided to its MSDR Issues Paper, including matters relating to data transition, as well as the interdependencies among various rule and procedural changes.

AEMO's updated indicative timeline for this consultation is outlined below. Dates may be adjusted depending on the number and complexity of issues raised in future submissions or meetings with stakeholders.

Deliverable	Indicative date
Issues Paper published	24 February 2020
Submissions due on Issues Paper	31 March 2020
Draft Report published	14 May 2020
Submissions due on Draft Report	5 June 2020
Final Report published	17 July 2020

Prior to the submissions due date, stakeholders can request a meeting with AEMO to discuss the issues. The publication of this Draft Report marks the commencement of the second stage of consultation.

Note that there is a glossary of terms used in this Draft Report provided at Appendix A.

2. BACKGROUND

2.1 NER requirements

Clause 7.16.2 of the NER requires AEMO to establish, maintain, and publish the MSATS Procedures. Clause 7.16.1(b) requires AEMO to maintain the MSATS Procedures in accordance with the Rules consultation procedures.

2.2 Context for this consultation

In 2017, the Information Exchange Committee (IEC) requested that AEMO review MSATS standing data as part of the competition in metering procedural changes. In November 2018, AEMO commenced industry consultation with an external workshop to determine the review's scope. As part of this workshop, AEMO received a 'wish list' of proposed changes from a number of participants.

In early 2019, the MSDR was put on hold due to other higher priority projects and processes. However, due to additional consideration of future use and users of standing data resulting from strategic decisions by the Council of Australian Government (COAG) and the Australian Energy Market Commission (AEMC), AEMO decided to resume its MSDR work. AEMO is aware of number of other NEM reform and rule change projects which have the potential to impact the MSDR - these include, but are not limited to, the following:

- The Australian Government's legislative framework relating to CDR as it applies to the energy sector.
- The introduction of competition for customers in Embedded Networks (currently referred to the Standing Committee of Officials for the COAG Energy Council).
- Stand-alone Power Systems (currently under consultation by the Australian Energy Market Commission (AEMC)).
- Wholesale Demand Response (currently under consultation by the AEMC).

The naming of any proposed new standing data fields will be subject to a future aseXML Standards Working Group (ASWG) submission, change, and approval processes.

2.3 MSATS Standing Data Review (MSDR) Guiding Principles

As part of the scoping of the MSDR, AEMO developed and socialised[1] a set of guiding principles for developing proposed changes to the standing data of the MSATS Procedures to ensure the data is complete, accurate, and useful for participants and consumers. Those guiding principles for making changes to standing data included the following:

- Efficient:
    - To have standing data available to support the efficient operations of the electricity market.
    - Changes do not increase barriers to market entry or competition.
- Flexible and future focussed:
    - Design flexibility so that standing data supports the current and future electricity market.
    - All data must be complete, accurate, and useful.
- Improve retail outcomes for customers:

[1] These guiding principles were socialised in meetings with retailers, DNSPs and competitive metering companies in December 2019 and in the MSDR pre-consultation workshop held in Melbourne on 2-3 February 2020.

- Provide data supporting the Consumer Data Right legislative reform.
- Provide data supporting wholesale demand response participants.

- Facilitate new market structures and roles:
  - Facilitate existing roles and reforms such as competitive metering.
  - Enable future market roles and structures such as embedded network reforms.
- Transparency of metering compliance:
  - Provide data for transparency of compliance for market participants and maintenance for metering installations.
  - Appropriate and timely data for maintenance of metering installations.
- Shared understanding of connection point information:
  - Provide appropriate market participants and other authorised parties with a consistent, full, and shared understanding of each connection point.

2.4 First stage consultation

AEMO issued a Notice of First Stage Consultation on 24th February 2020, and published an Issues Paper for the MSDR. This information is available on AEMO's website.

The Issues Paper included details on proposed changes to the MSATS Standing Data which would involve the addition of, updates to, or removal of fields in the MSATS Procedures in respect of data in the following information categories:

- Metering Installation Information within the Metering Register Information:
  - General metering installation information.
  - Metering installation transformer information.
  - Register-level information.
  - Connection and metering point details.
  - Metering installation location information.
  - Meter read and estimation information.
  - Meter communications information.
- NMI Details within MSATS:
  - Address Structure.
  - Feeder Class.
  - Transmission Node Identifier 2 (TNI2).

AEMO also included information in the Issues Paper relating to a possible rule change proposal regarding NER Schedule 7.1. AEMO considers that this rule change would enable flexibility in relation to data requirements under the MSATS Procedures. It was noted that the information provided regarding the possible rule change does not form part of the MSDR consultation. If AEMO determines that the rule change proposal is to be progressed, it will be the subject of appropriate and necessary consultation at the relevant time (most likely to be submitted prior to the AEMC's review of Competition in Metering due to commence in late 2020).

AEMO received 23 submissions in the first stage of consultation, two of which were a late submission.

Copies of all written submissions (excluding any confidential information) have been published on AEMO's website at: https://aemo.com.au/consultations/current-and-closed-consultations/msats-standing-data-review.

3. SUMMARY OF MATERIAL ISSUES

This section details the material issues AEMO identified during its review of the submissions to its first round consultation.

The key material issues arising from the proposal and raised by Consulted Persons are summarised in the following table:

No.	Issue	Raised by
1.	Meter Malfunction Exemption Details	Multiple Respondents
2.	Type 4A Metering Installation (MRAM) Reason	Multiple Respondents
3.	Metering Installation Transformer Information	Multiple Respondents
4.	Metering Installation Connection Configuration Details	Multiple Respondents
5.	Shared Fuse Details	Multiple Respondents
6.	GPS Coordinates	Multiple Respondents
7.	Network Additional Information field	Multiple Respondents
8.	Is DPID still required if G-NAF PID added	Multiple Respondents
9.	Add G-NAF PID and include Section and DP Number	Multiple Respondents
10.	Data Transition	Multiple Respondents

A detailed summary of issues raised by Consulted Persons in the submissions, together with AEMO's response to each matter, is contained in Appendix B.

Section 4 of this Draft Report also provides AEMO's assessment of the issues and how AEMO proposes to address them.

4. DISCUSSION OF MATERIAL ISSUES

As noted in Section 3 of this Draft Report, each of the 10 material issues discussed in the following section of the report was raised in the submissions by multiple respondents. AEMO has sought to address each of these issues in a consistent manner in this section of the report by providing an assessment of:

- A summary of the issue/s and discussed in respondent submissions.
- AEMO's assessment of the issue/s raised by respondents.
- AEMO's conclusion including how it is proposed that the issue/s be addressed in the future (including in some cases that AEMO proposes not to make changes).

4.1 Meter Malfunction Exemption Details

4.1.1 Issue summary and submissions

The analysis of the information provided for the December 2019 pre-consultation survey and discussions at the February 2020 industry workshop indicated that there may be benefits in the inclusion of the meter malfunction exemption details in MSATS. Proponents of this change indicated it would provide visibility to all participants responsible for the NMI, consequently removing the administrative resource effort between participants enquiring on the status of the malfunction rectification.

In the initial stage of consultation AEMO asked for participant feedback regarding the proposed addition of the new fields of Meter Malfunction Exemption Number and Meter Malfunction Exemption Expiry Date. AEMO also indicated that it is considering whether automation is available for AEMO or participants to populate those fields, including initial population and ongoing maintenance, because AEMO considers it will not be feasible to enter this information manually.

The Meter Malfunction Exemption Number field would record the exemption number when a meter malfunction exemption has been granted by AEMO. The Meter Malfunction Exemption Expiry Date field would identify the end date that this exemption. This information would allow Metering Providers - Category B (MPBs) to better communicate exemptions relating to meter malfunctions to other market participants.

The majority of participant responses supported the addition of the new meter malfunction exemption fields. Intellihub, PLUS ES, Vector Metering, ERM Power, Powermetric, Ausgrid, Origin Energy, AGL, Ergon Energy Network and Energex all suggested that AEMO should be the one responsible for populating and maintaining those fields given that AEMO grants the approval for those exemptions. AGL stated in its submission*: "AGL strongly supports this change as it will make this exemption process more efficient and provide better information to all participants, including incoming retailers."*

AGL suggested that the malfunction number be appropriately identified (e.g. by prefix) to separate out family failure exemptions versus malfunction exemptions. It indicated that this would allow better understanding and reporting of fault types by all participants.

Powerlink Queensland supported the addition of the fields, however it suggested the fields should be added at the NMI level and not to the meter itself.

Ausgrid supported the addition of the Meter Malfunction exemption number but noted that: *"The exemption number does not identify what is wrong with the metering installation (eg. CT/VT failure, Meter family failure), so any incoming participant would not know what they are going into if winning a site. This information could also be counter productive to the customer if they wish to switch providers and the provider does not want to take on a site with a malfunction."*

EvoEnergy did not support the addition of this field given this expiry date will either change as a new exemption is allocated due to volume of meters requiring replacement, or if the meter is removed.

Metering Dynamics, Origin Energy, and Vector Metering supported the proposal, however each questioned how this field would be maintained when the exemption expires; whether it will be removed; or a history of the exemption records kept in MSATS. Vector said in its submission: *"… furthermore we support AEMO updating this field when they issue the Exemption to the MC. This is the most efficient way to 1) manage exemptions and 2) notify impacted participants of the existence of the malfunction and the exemption"*

During the MSDR pre-consultation stage, some participants suggested the addition of a Meter Family Failure field to indicate whether a meter family failure is present. In the initial stage of consultation, AEMO's view was that the proposed Meter Malfunction Exemption Number and Expiry Date fields would make this field redundant, therefore the inclusion of this field is not supported by AEMO.

AEMO asked participants whether they support the addition of this new field in the case that the proposed meter malfunction exemption fields not being added to MSATS. Many participants supported the addition of the Meter Family Failure field. Origin Energy in its submission noted: "*Origin supports the addition of the Meter Family Failure field as it would assist an MPB in identifying difficult to access sites and will also provide vital information during a meter malfunction."*

4.1.2 AEMO's assessment

The majority of participant responses supported the addition of the new fields of Meter Malfunction Exemption Number and Meter Malfunction Exemption Expiry Date.

AEMO notes Ausgrid's support for the addition of the new fields for the meter malfunction exemption and noted its concern regarding how potential incoming participants may use these data. AEMO considers that the recording in MSATS of additional information in addition to the Meter Malfunction Exemption number will not make participants any more, or any less willing to take on a site.

AGL suggested that the malfunction number should be appropriately identified (e.g. by prefix) to separate out family failure exemptions versus malfunction exemptions. However, the meter malfunction exemption does not classify the exemption types (for example, meter fault or family failure), hence it is not possible to have prefix to separate the exemptions types. AEMO notes that exemptions are provided based on the specific timeframe to perform a meter change.

AEMO agrees with Powerlink Queensland that the meter malfunction exemption fields should be added at the NMI level and not the metering level. This includes WIGS NMIs, given the process will cover any NMI where any aspect of the metering installation has been provided an exemption on the rectification timeframe.

A few participants were unclear about how the Meter Malfunction Exemption Expiry Date will be maintained and whether the exemption record will be deleted if the exemption expires. AEMO proposes to provide the latest data for this field, meaning that the field would either be populated with:

- a future date for an active exemption;
- a date in the past for an expired exemption where the issue is unresolved; or
- no date where a metering installation malfunction has been remedied or rectified (the exemption will finish and then the record will be removed or cleared).

AEMO agrees with the majority of participants that the addition of the proposed new fields of Meter Malfunction Exemption Number and Meter Malfunction Exemption Expiry Date is beneficial. AEMO also agrees that it is the appropriate party to be responsible for updating and maintaining these fields. However, this will not be feasible without the automation of the Meter Malfunction Exemption process as it will not be practical nor efficient for participants and for AEMO to enter this information manually. It is proposed that once AEMO automates the Meter Malfunction Exemption process, Participants will be able to apply for exemptions through an online portal by entering the exemption details (including the list of

NMIs), replacing the current manual process. AEMO would then assess the online application, rejecting or approving the application through the portal, which would see the system update the exemption details into the new MSATS fields of Meter Malfunction Exemption Number and Meter Malfunction Exemption Expiry Date. Participants associated with the exempt NMI(s) will be notified of those exemption details by MSATS. AEMO has yet to undertake a detailed design assessment of the new portal.

AEMO does not support the addition of the Meter Family Failure field, because we are not able to identify all Meter Family Failure instances. This is because AEMO only becomes aware of a family failure when an application for exemption to the required timeframes is received for a NMI. AEMO intends to provide Meter Malfunction Exemption Number and Expiry Date in the system where an exemption is granted for a NMI with a meter identified as part of a failed meter family because these data will be accurate and reliable based on the information provided by Participants via the portal. This information is readily available to AEMO and supported by current procedures and rules. Consequently, AEMO has decided not to add the proposed Meter Family Failure Field.

4.1.3 AEMO's conclusion

AEMO is considering the automation of the current exemption process which would include a process to reflect approved exemptions in MSATS. AEMO considers that the addition of the proposed Meter Malfunction Exemption Number and Meter Malfunction Expiry Date fields at the NMI level is appropriate, and that AEMO would be the suitable party to be responsible for populating and updating the fields once the exemption process is automated. AEMO has yet to undertake a detailed design assessment of the new portal.

AEMO also intends to provide the latest data available for the Meter Malfunction Exemption Expiry Date field. This means that the field would either be populated with:

- a future date for an active exemption;
- a date in the past for an expired exemption where the issue is unresolved; or
- no date where a metering installation malfunction has been remedied or rectified (the exemption will finish and then the record will be removed or cleared).

AEMO does not support the addition of Meter Family Failure field, as AEMO is not able to identify all Meter Family Failure instances given it only becomes aware of a family failure when an application for exemption to specific installation timeframes is received for a NMI.

4.2 Type 4A Metering Installation (MRAM) Reason

4.2.1 Issue summary and submissions

The analysis of the information provided for the December 2019 pre-consultation survey and discussions at the February 2020 industry workshop indicated that there may be benefits in the addition of a new field in MSATS to indicate the reason for a meter being classified as a type 4A. In other words, a new field which would be associated with a NMI which has a Metering Installation Type Code in MSATS of "MRAM". This field would indicate whether the NMI has a type 4A installation associated with it, either due to an exemption because of the non-availability of remote communications, or because of a customer refusal to have a meter with remote communications enabled or installed at their premises.

In the feedback provided in the initial stage of consultation for MSDR, PLUS ES stated:

"PLUS ES believes the ability to preferably identify or derive in MSATS if an MRAM meter is due to no network coverage, etc, provides value to participants. It will drive process efficiencies, cost reductions and support participants to meet their obligations. Especially in scenarios where a customer who requested the MRAM

has moved out of a site, and the meter could potentially have the communications re-established. If there is an Incoming FRMP they do not have this information available to them."

AGL also supported the inclusion of a field:

"AGL strongly supports the inclusion of a field to identify why a meter is a Type 4A. Clause 7.8.4 requires the MC to record the small customer refusal, but in a competitive market the FRMP and MC may be churned at the same time, leaving the incoming FRMP with no records of such a refusal.

This in turn can lead to the incoming FRMP trying to service a customer with inadequate information, which often leads to a poor customer experience.

By including this information within MSATS the incoming FRMP will not need to rely on information from the previous FRMP or the previous MC (following an MC churn).

Noting previous comments about this information, AGL considers that this information relates to an energy market service, in the same way that information about solar, battery or controlled load is recorded to provide a customer service."

A number of participants proposed that AEMO would populate the proposed field, to flag the reason for a type 4A exemption to the type 4 metering installation obligation.

As indicated in the February 2020 workshop, AEMO sought in-house legal counsel on this matter given its potential to be both sensitive and contentious for some concerned interest groups.

4.2.2 AEMO's assessment

The submissions – as well as other feedback provided separately to AEMO – highlighted potential benefits to participants and their customers of adding a field to flag the reason for a type 4A exemption to the type 4 metering installation obligation related to small customers.

The reason for the exemption is outlined in NER section 7.8.4 and is either:

- AEMO exempting the Metering Coordinator (MC), if the MC demonstrates to AEMO's reasonable satisfaction that there is no existing telecommunications network which enables remote access to the meter; or
- the MC not being subject to the obligation to install a type 4 meter, where: the customer has refused; the retailer has notified the MC that the retailer has informed the customer as to type 4As; and the MC has accepted the refusal.

AEMO has an obligation to record any changes in respect to metering in the metering register (NER 7.8.11) and in regard to these records, the MC must:

- ensure that changes to parameters or settings within a metering installation are reported to AEMO to enable AEMO to record the changes in the metering register (NER 7.8.11); and
- arrange for any discrepancies in respect of information in the metering register to be corrected (NER 7.12.2).

Information in the metering register is confidential, as is NMI Standing Data (NER 7.15.1).

A registered participant has a number of obligations in respect of such confidential information (NER 8.6.1), however, notwithstanding these obligations, the disclosure, use or reproduction of information is not prevented, where the person who provided the relevant information under the NER consents (NER 8.6.2). Based on the framework provided in the NER, the incoming participant would need to obtain the relevant information in circumstances involving such consent.

4.2.3 AEMO's conclusion

Within the current context of the obligations provided in the NER, it is unclear as to how AEMO would be able to support the addition of a new field to differentiate type 4A reasons for small customers.

However, given the views expressed in the submissions about the potential benefits for incoming participants and their small customers, AEMO is interested in continuing work with stakeholders to explore potential benefits and rule mechanisms to enhance access to exemption information relating to the communications elements of type 4 / 4A meters for small customers.

AEMO will also propose to the AEMC that this matter be included in the scope for its review of Competition in Metering to commence in late 2020.

Question:

1. What are the key issues for AEMO to consider in working with stakeholders to explore with the AEMC the potential benefits of enhanced access to type 4 / 4A metering communications exemption information?

4.3 Metering Installation Transformer Information

4.3.1 Issue summary and submissions

In the issues paper, AEMO requested participant feedback regarding the following proposed amendments to current transformer information details in MSATS, in particular the relative benefits and issues of splitting transformer information into both Current Transformer (CT) and Voltage Transformer (VT), and the usefulness of the collection of a range of additional transformer information. These amendments are discussed in the following sections.

Splitting transformer information into CT and VT

The following information is currently recorded in MSATS relating to metering installation transformers:

- Transformer Location - details the existence of instrument transformers and their location relative to the market connection point.
- Transformer Ratio - statement of the available and applied transformer ratios.
- Transformer Type - explanation of the type of transformation used.

Assessment of the current information in MSATS has shown that these fields currently have a very low population rate (less than 5%), and there are no validation checks performed on these fields as given they are free text fields. The data that has been provided is generally of poor quality as a result.

A number of participants at the February workshop indicated that separating the information into CT and VT information would make those fields more useful to participants. As a result, AEMO proposed the addition of six new fields:

- CT Location and VT Location,
- CT Ratio and VT Ratio,
- CT Type and VT Type.

The majority of participant responses in the first round of consultation supported the splitting of the existing transformer fields into separate CT and VT fields, however there were a number of questions

raised in relation to data clean-up and transition of information between the current fields and proposed new fields. In particular, the following Participants raised concerns:

- CitiPower Powercor and United Energy supported splitting transformer information into CT and VT, providing it only applies to new sites or where work is performed after the introduction of this change.
- Ergon Energy Network and Energex had no objections to AEMO's proposal. However, clarity was sought on the treatment of legacy metering, in terms of whether there is an expectation for this metering information to be provided in any new fields.
- AusNet Services did not oppose AEMO's proposal to splitting transformer information into CT and VT, however, it did object to the proposal to make these fields 'Required'. Ausnet Services indicated that this information is of no benefit in Victoria for small customer metering where the Local Network Service Provider (LNSP) is the MPB and MC. Additionally, AusNet Services questioned whether contestable MPBs would be reliably populating VT information given many VTs are installed by and owned by the LNSP.
- PLUS ES suggested it would be valuable to have a flag that identifies if a meter is associated with a CT and/or VT (or neither). It felt that this approach would be beneficial in assisting market participants to identify how a site needs to be managed. PLUS ES considered that this information would be easy to maintain or update with minimal burden.
- Ausgrid proposed that NMIs with a classification of wholesale metering points (or under 5-Minute Settlement (5MS), BULK, XBOUNDRY and INTERCON) should be exempt from providing this information as these sites will not churn.

Section 4.10 of this report provides a discussion on the issues and options relating to data transition.

The addition of new transformer information fields

The analysis of the information provided for the December 2019 pre-consultation survey and discussions at the February 2020 industry workshop indicated that there may be benefits in considering additional new fields to provide information about meter transformers.

Participant submissions indicated that there is general agreement that the following new meter transformer information fields would be beneficial to both participants and customers and therefore should be added to MSATS:

- CT/VT Accuracy Class.
- CT/VT Last Test Date.

The majority of participant responses supported the addition of the fields CT/VT Accuracy Class and CT/VT Last Test Date. Origin Energy stated that: *"Yes, Origin agrees with AEMO's proposal with regards to adding new transformer information fields. As meters are tested separately to the CT/VT, the retailer is able to determine and provide information to the customer if required as well as ensuring that external MC/MP's are complying with their obligations."*

PLUS ES did not oppose the inclusion of the fields but, questioned how Last Test Date would work: "*PLUS ES does not oppose these fields if value is delivered. MC & MP must properly asset manage CT's and VT's because of NER compliance. The details required for this are complex and best kept within the MP & MC systems. Reflecting a partial amount of this in MSATS would just be a burden without benefit for the market. If Last Test Date for CT and last test date for VT had to be included, then this would need to be enumerated to identify if the CT was associated with a sample plan or a timetabled plan. This is because the LV CT's on a sample plan are "tested" by the family. The drawback of having these dates in MSATS is that it will encourage discrimination by FRMP's selecting these sites."*

Some participants did not agree with the proposed new fields. EvoEnergy acknowledged the potential benefits to the market but noted that information for older sites may be difficult obtain.

TasNetworks stated that they *"don't believe this information would be widely used by participants outside of MPB/MC and therefore don't see any value in populating this information in MSATS. More value if this is kept externally to MSATS."*

Powerlink Queensland argued that the addition of the proposed fields into MSATS was not the appropriate tool to police compliance for WIGS NMIs as accuracy class is determined by the rules. Ausgrid also agreed that Wholesale metering points should be exempt

SA Power Networks did not support the inclusion of these fields for Type 5 & 6 NMI's where they are providing the MPB function.

A minority of submissions indicated that they would like to have new fields for CT/VT Serial Numbers added to MSATS Standing data. AEMO indicated in the Issues Paper that, transformers can have multiple serial numbers and different numbers of serial numbers. A solution could be to add a new "NMI Devices" table to MSATS to hold serial numbers and other device(s) information. AEMO noted that the addition of this table would add an extra level of complexity to MSATS Change Requests (CRs) and additional analysis will be needed to understand implementation costs and timeframes.

The majority of participant feedback did not support the addition of the CT/VT Serial Numbers fields at this stage. EvoEnergy indicated that this information is for older sites and might be difficult to obtain, and does not add value, whilst others indicated that it will be time consuming to populate those fields and the cost will outweigh the benefit. Separately Origin Energy noted that information is currently verified directly with the Meter Provider's (MPs) and works effectively.

Proposed validations for transformer information fields

In the Issues Paper, AEMO proposed the following validations for the new fields of transformer Information:

Field	Validations
CT/VT Location	Free text field
CT/VT Ratio	Ratio pattern validation Unlimited Number of A:NNN (where A is a number or / character, and N is a number)
CT/VT Type	Enumerated list of (Single Phase, Three Phase)
CT/VT Accuracy Class	Accuracy Class pattern validation NNN.NNN Or NNN (where N is a number or a letter)
CT/VT Last Test Date: Date	Date format

The majority of participant responses supported AEMO's proposal for validations of the new transformer information fields. Endeavour Energy suggested some values to be included in the enumerated lists of values for the transformer information fields and suggested also the addition of new fields "VT Primary" and "Secondary Voltages". It was suggested that it would help an incoming MP to better understand the metering installation and therefore prepare for the initial site visit. Endeavour Energy indicated that this field should be enumerated, which should include the following values: 132KV / 110v, 66KV / 110v, 33KV / 110v, 11KV / 110v.

4.3.2 AEMO's assessment

There was broad support for AEMO's proposed changes around the changes to transformer information in MSATS and these are discussed in the following sections. AEMO notes that there is significant complexity in the information that may be recorded against NMIs where there are potentially a number of CT / VT meters at a site.

Splitting transformer information into CT and VT

AEMO considers that it will be beneficial to split the current transformer information fields into CT and VT as this extra detail will assist in the longer-term management of CT/VT equipment. It will also facilitate improved communication of existing metering installation equipment to interested parties. Further, AEMO considers that these fields should be made "Required" and not "Optional". AEMO will propose that a transition period would apply to allow population of data for existing NMIs where the data is available. The MPB and the LNSP would both be responsible parties for providing and maintaining this information.

AEMO notes that splitting the transformer information into CT and VT is of benefit to both retailers and to the (predominantly large) end consumer, that this is a worthwhile addition to the market overall. These benefits also extend to sites where the CT may have been provided by the network, but it is a large site where it is contestably metered.

AusNet Services supported AEMO's proposal to separate transformer information fields into CT and VT, however, they disagreed with the proposal to make these fields 'Required', indicating that this information would be of no benefit in Victoria for small customer metering where the meter provider and Metering Coordinator are the LNSP. Additionally, AusNet Services questioned whether contestable MPBs would reliably populate VT information given many VTs are installed by and owned by the LNSP. AEMO notes that the proposed fields are applicable to NMIs with CT and VT equipment, including where a site is High Voltage. A "Required" field indicates that the information must be provided only when that information is available.

PLUS ES recommended the inclusion of a flag that identifies if a meter is associated with a CT and/or VT (or neither). AEMO notes that it would be possible to identify if a premise has CT or VT through the proposed new field "Connection Configuration". Finally, AEMO proposes that the new fields proposed for CT and VT would be at the meter level to provide options for participants to identify if a CT or VT exists for a specific meter. This will be of benefit where there are multiple meters present for a NMI.

AEMO agrees with excluding certain NMI Classification Codes (BULK, XBOUNDRY and INTERCON) for the CT and VT fields:

- CT/VT Location.
- CT/VT Ratio.
- CT/VT Type.
- CT/VT Accuracy Class.
- CT/VT Last Test Date.

However, this approach can only occur after ALL NMIs have been correctly assigned with the new 5MS/Global Settlement (GS) NMI Classification Codes.

The addition of new transformer information fields

As the majority of participant feedback agreed to the proposal of the addition of the proposed CT/VT Accuracy Class and CT/VT Last Test Date fields. AEMO considers the proposal to add those new fields to MSATS would provide high quality which is useful data to the market. More importantly it will ensure

retailers are able to provide information to the customer as required, and also ensure that MC/MP's are complying with their obligations.

The majority of participant responses did not support the addition of the CT/VT Serial Numbers fields and indicated little benefit given the time-consuming task (and therefore high cost) to populate data into those fields. AEMO has consequently determined that the addition of these new fields is not justified.

AEMO agrees with PLUS ES's assessment that further information is required to gain value out of the Last Test Date and have determined to separate the information as follows:

- Field 1: Test - List of options: Tested (definition – part of 100% testing), Sample Tested (definition – tested as part of a sample plan), Sample (definition – part of an approved sample plan), set as Required where a CT or VT exists as part of the metering installation.
- Field 2: Sample Family ID, set as Required if a CT or VT is part of a family within an approved sample plan.
- Field 3: Date – date represents actual test date for those tested or date represents family expiry date for those included in an approved sample plan, set as Required where a CT or VT exists as part of the metering installation.

Proposed validations for transformer information fields

Based on the participant feedback received for the possible validations of the new transformer information fields, AEMO proposes the following validations:

Field	Validations
CT Ratio (this field reflects the available and connected ratio)	200 : 5 800 : 5 2000 : 5 4000 : 5 1500 : 5 150 / 300 / 600 : 5 @ 150 : 5 150 / 300 / 600 : 5 @ 300 : 5 150 / 300 / 600 : 5 @ 600 : 5 400 / 800 / 1200 : 5 @ 400 : 5 400 / 800 / 1200 : 5 @ 800 : 5 400 / 800 / 1200 : 5 @ 1200 : 5 1000 / 2000 / 3000 : 5 @ 1000 : 5 1000 / 2000 / 3000 : 5 @ 2000 : 5 1000 / 2000 / 3000 : 5 @ 3000 : 5

Field	Validations
VT Ratio (this field reflects the available and connected ratio)	500kV : 110V 330kV : 110V 275kV : 110V 220kV : 110V 132kV : 110V 110kV : 110V 66kV : 110V 33kV : 110V 22kV : 110V 11kV : 110V 6.6kV : 110V AEMO notes that in the case of dual secondary (or more) windings, the VT Ratios would ideally be reflected for example as the following: 500kV : 110V : 110V PRIMARY : SECONDARY 1 : SECONDARY If participants wish to reflect those cases of dual secondary windings or more in the VT Ratio enumerated list, this may be quite complex and create a very long list of values especially in instances of up to five secondary windings. Hence AEMO would like to understand if participants see value in recording cases where more than one secondary windings is present, i.e. this would be reflected in the VT Ratio enumerated list.
CT Type	A B C S T U V W COMBINED (IVT + CT)
VT Type	IVT (Inductive Voltage Transformer) CVT (Capacitive Voltage Transformer) COMBINED (IVT + CT) Three-Phase Three-Limb Three-Phase Five-Limb
CT Accuracy Class	0.5M 0.5ME 0.5S 0.5SE 1M AM BM A

Field	Validations
VT Accuracy Class	0.2M 0.5M 1M A B C D AL BL

4.3.3 AEMO's conclusion

Separating transformer information into CT and VT

AEMO proposes to separate the following existing transformer fields into new CT fields and VT fields based on the following characteristics:

- Transformer Location -> CT Location and VT Location.
- Transformer Ratio -> CT Ratio and VT Ratio.
- Transformer Type -> CT Type and VT Type.

AEMO will exclude certain NMI Classification Codes (BULK, XBOUNDRY and INTERCON) for the new CT and VT fields.

The addition of new transformer information fields

AEMO proposes to add the following new fields about transformer to MSATS:

- CT Accuracy Class and VT Accuracy Class.
- CT Test and VT Test.
- CT Sample Family ID and VT Sample Family ID.
- CT Test Date and VT Test Date.

AEMO proposes not to add a field for CT/VT Serial Numbers, as the majority of participant responses were unsupportive due to the high cost and time consuming task of populating those fields.

Proposed validations for transformer information fields

Based on the participant feedback received for the possible validations of the new transformer information fields, AEMO proposes the following validations:

Field	Validations
CT Ratio (this field reflects the available and connected ratio)	200 : 5 800 : 5 2000 : 5 4000 : 5 1500 : 5 150 / 300 / 600 : 5 @ 150 : 5 150 / 300 / 600 : 5 @ 300 : 5 150 / 300 / 600 : 5 @ 600 : 5 400 / 800 / 1200 : 5 @ 400 : 5 400 / 800 / 1200 : 5 @ 800 : 5 400 / 800 / 1200 : 5 @ 1200 : 5 1000 / 2000 / 3000 : 5 @ 1000 : 5 1000 / 2000 / 3000 : 5 @ 2000 : 5 1000 / 2000 / 3000 : 5 @ 3000 : 5
VT Ratio (this field reflects the available and connected ratio)	500kV : 110V 330kV : 110V 275kV : 110V 220kV : 110V 132kV : 110V 110kV : 110V 66kV : 110V 33kV : 110V 22kV : 110V 11kV : 110V 6.6kV : 110V
CT Type	A B C S T U V W COMBINED (IVT + CT)
VT Type	IVT (Inductive Voltage Transformer) CVT (Capacitive Voltage Transformer) COMBINED (IVT + CT) Three-Phase Three-Limb Three-Phase Five-Limb

Field	Validations
CT Accuracy Class	0.5M 0.5ME 0.5S 0.5SE 1M AM BM A
VT Accuracy Class	0.2M 0.5M 1M A B C D AL BL

Question:

2. In the cases where transformers have dual secondary windings or more (500kV : 110V : 110V), how would participants prefer to see those represented in the enumerated list for VT Ratio, keeping in mind that a transformer can have up to five secondary windings?

4.4 Metering Installation Connection Configuration Details

4.4.1 Issue summary and submissions

In the Issues Paper, AEMO proposed to include a Connection Configuration field in MSATS. AEMO asked participants to consider two questions in relation to the proposed field:

- Do you agree with the proposal to include a Connection Configuration field as described in the report? Why/why not?
- Are there any connection configurations that could not be contained in a Connection Configuration field?

AEMO received a number of responses to these questions:

- Ausgrid disagreed with the inclusion of the proposed field on the basis that there would be difficulty in determining if a site has two or three phases.
- AusNet Services indicated the information in this field could be inferred or is already known but if it was to be included that the field be "Required" for new meter installations from May 2022 onwards.
- Endeavour Energy and Vector Metering suggested it be made clearer the "Phases in Use" field should be at the metering installation level rather than the meter level, and the field be capped accordingly.

- Energy Queensland Energex and Ergon Energy Network sought clarity on the role of the MP and whether the LNSP would be expected to update all sites.
- Metering Dynamics sought clarity on how the field will be populated and validated.
- Origin Energy requested clarification regarding the treatment of a site with solar or a battery.
- Powerlink Queensland stated that *"this field should [not] be included for WIGS NMIs as it will be always the same"*. They also noted that information in this field would be *"better covered off in the NMI application"*.
- TasNetworks stated there is not *"sufficient value in this information being populated in MSATS"*.
- Alinta Energy suggested a fifth character for expected energy flows.
- EvoEnergy suggested this field be included in the C7 report to provide relevant information to a new MPB ahead of a meter exchange.
- PLUS ES, Red Lumo suggested alternative manners of enumerating these fields.
- AGL and EvoEnergy noted that certain connection configuration components may not be able to be reflected in the field.
- AusNet Services indicated that *"Single Wire Earth Return might not be able to be contained in the Connection Configuration field"*.
- EnergyAustralia noted *"the connection configurations in the field represent the majority of configurations"*.

All other feedback was supportive of the proposed change.

4.4.2 AEMO's assessment

AEMO notes the majority of respondent feedback was generally supportive of the introduction of this field. AEMO intends for the field to capture the NMI's capability at an asset level, not the meter or network level. This will improve efficiency in the market. Origin was supportive of this approach, indicating that "*it will allow retailers to appropriately take action when churning meters as well as reduce wasted visits in the field*".

AEMO has addressed the objections to and caveats within the submissions as described in the following table.

Comment	Respondent	AEMO assessment
There isn't a clear "benefit" or "sufficient value" for this information being populated in MSATS, The information is already known by relevant participants.	Ausgrid, AusNet Services, Energy Queensland, Metering Dynamics, Powerlink and TasNetworks.	The information captured in this configuration field will provide for incoming MCs and retailers to efficiently manage churned sites as efficiently as possible.
Various alternative arrangements of the field and connection configuration such as the field being separated out into new fields that act as flags.	AGL, Ausgrid, AusNet Services, EvoEnergy, PLUS ES, Powerlink Queensland, Red Lumo, Vector Metering	The field is intended to be a single field that acts as an efficient source of information to capture the NMI's capability at an asset level. AEMO has considered that the configuration of the field as proposed is the most efficient way of presenting the information. AEMO notes that not all meter make and model, number of meters and associated network tariffs will provide this information and as such the field will improve efficiency in the market.

Comment	Respondent	AEMO assessment
Further information is needed on how the field will be populated	Metering Dynamics	The LNSP will be responsible for the field and relevant MPs and MCs will be responsible for informing them of changes.
The information in the field should be covered in the NMI application	Powerlink Queensland	AEMO has determined that the nominated configurations are standard across all of industry and will deliver efficiencies that make it preferable to include in MSATS.

Several participants made suggestions to the proposed field, which are addressed in the table below.

Comment	Respondent	AEMO assessment
Alinta suggested a fifth character for Expected energy flows.	Alinta Energy	Expected energy flows can change according to customer and is not suitable for the field that intends on capturing the NMI's capability at an asset level.
This should be included in the C7 report.	EvoEnergy	AEMO agrees with EvoEnergy's suggestion.
Origin also seeks confirmation if information regarding whether a site has solar or a battery will be included.	Origin Energy	AEMO does not intend to include solar or battery information in this configuration.
The field should be in the NMI Data table rather than the meter register table	Endeavour Energy	AEMO agrees with this suggestion.

4.4.3 AEMO's conclusion

AEMO proposes to include the proposed field but will change the location from the meter register table to the NMI Data table and assign the LNSP with the responsibility for provision of the data.

AEMO agrees that the proposed field should also be included in the C7 report, as suggested by EvoEnergy.

AEMO will review the options for validations on the suite of standing data and allow for a transition period to update the information in this field after which time the field will be 'Mandatory' including for legacy meters.

4.5 Shared Fuse Details

4.5.1 Issue summary and submissions

AEMO proposed a separate Shared Isolation Points flag in the MSDR Issues Paper and that this field be populated by the LNSP with "Yes", "No", and "Unknown" as allowable values. All respondents were supportive of this proposal. For example, EnergyAustralia noted that *"Identification of shared fusing prior to attending site will limit any NACKing of service orders."*.

AEMO raised two questions in the Issues Paper:

- Are the values sufficient? What additional information should be provided, and how could it be validated?
- Should "Unknown" be able to be changed into "Yes" / "No"?

Ausgrid and AusNet Services stated that the "Unknown" value was raised in the Issues Paper but not reflected in the Standing Data for MSATS drafting provided. For example, Ausnet Services noted that *"The format [of the CHAR(2) field in Table 4 of the CATS_METER_REGISTER] requires updating to cater for AEMO's proposal to include "Unknown."*

The majority of respondents were supportive of the inclusion of the "Unknown" value. Only AGL, CitiPower Powercor and United Energy raised issues. AGL stated that "*Unknown is not definitive*" and CitiPower Powercor and United Energy expressed a preference for the flag either being "Yes" or blank. AEMO notes that it is not possible for a "Mandatory" field to be blank. AusNet Services stated, *"the use of "Unknown" will be used as the default position for the LNSP until a site visit occurs and a shared fuse scenario can be confirmed"*. Energy Australia also proposed placing an onus on LNSPs to provide accurate and up-to-date information.

AusNet Services and TasNetworks both recommended that the field should be included in the CATS NMI DATA table instead of CATS METER REGISTER.

There was additional feedback in submissions as to which participant category should be responsible for updating the proposed field. As Origin Energy noted, there *"needs to be a clear understanding on who will update/maintain this information"*. Vector Metering stated *that "MP's responsible for legacy metering should be required to reflect the status on all meters"*. PLUS ES however commented that *"LNSPs are best positioned to do this as they are the common participant"* in shared fuse scenarios.

4.5.2 AEMO's assessment

As Mandatory fields cannot be left blank, "Unknown" is a suitable default value. AEMO considers that an "Unknown" value in the field is preferable to defaulting "Yes" or "No" as to whether a shared isolation point is present.

AEMO agrees that it would be sensible to move the proposed field from the meter register table to the NMI Data table, as suggested by AusNet Services and TasNetworks.

AEMO considers that the LNSP is the party best-placed to be responsible for the flag.

4.5.3 AEMO's conclusion

AEMO notes this field is subject to any changes from the AEMC's Introduction of Metering Coordinator Planned Interruptions Rule Change (ERC0275) final determination. As such, further guideline updates and appropriate procedure changes may need to be introduced once the rule change is finalised.

The allowable values for the field are now "Y" (Yes), "N" (No) or "U" (Unknown). AEMO proposes to change the location of the new field from the meter register table to the NMI Data table.

AEMO proposes to assign the responsibility to the LNSP to provide the data. The CATS Procedures section 2.1, clause (h) states that participants have an obligation to keep information in MSATS up to date. Any MPs that identify shared fusing should advise the LNSP to ensure the data is updated in MSATS. This raises the question of what the best way relevant MCs and MPs can inform LNSP of status changes.

Questions:

3. Through what mechanism can a MC or MP communicate with an LNSP to instigate shared isolation point status changes?

4.6 GPS Coordinates

4.6.1 Issue summary and submissions

AEMO proposed the inclusion of meter GPS coordinates in the pre-consultation feedback pack, in line with participant feedback from the 2018 workshop. In this feedback, participants noted that this information would be useful in a number of circumstances, with roughly half of respondents at that time supporting the addition of the field.

Feedback provided by respondents to the December 2019 pre-consultation survey indicated that there may be benefits in the addition of the meter GPS coordinates in MSATS to assist in locating harder to find metering points at some premises. Further detail was provided in discussions at the February 2020 industry workshop highlighting the additional benefit to the market in supporting timely meter exchange, specifically for meters at rural premises.

Conversely, the collection and population of this information may for many NMIs present a cost that would exceed the benefit, as was also noted in feedback to AEMO. Accordingly, AEMO asked participants at the February 2020 workshop about the instances in which the provision of meter GPS coordinate data would be most useful. These participants identified that the data would be most useful for rural and manually read interval meter (MRIM) sites, as well as useful for any interval meters.

In the Issues Paper, AEMO asked for participant feedback regarding the addition of GPS Coordinates, including which types of locations; how to define the required locations; whether it should apply to all MRIMs, or all new connections; any other scenarios it should apply to; and the degree of accuracy that would be required of the GPS measurements.

Rural vs all sites

The majority of participant responses supported the addition of GPS Coordinates for rural sites. AGL, Alinta Energy, and EnergyAustralia suggested the field should apply to all NMIs, rather than just rural. Alinta Energy stated that it *"supports the capturing of GPS coordinates for all installations."* A number of respondents supported the addition of the information and provided further feedback to AEMO's proposal including:

- Ausgrid and PLUS ES highlighted they do not support the "Mandatory" requirement for completing the field, rather it should be "Required". PLUS ES stated that it *"supports the provision of GPS co-ordinates for rural areas, however question the benefit of mandatory. There is always the question of a cost benefit analysis if they were mandatory. PLUS ES supports and recommends the process to obtain GPS co-ordinates when at the site is best endeavours but a Required field in MSATS. Provide the co-ordinates when you have obtained them. Otherwise making the field mandatory may deliver inaccurate or false records."*
- SA Power Networks stated *"SA Power Networks support this approach however, allowances should be provided where the LNSP is acting as the MP as we may not have capture information for 100% of the required sites and this will be a costly activity to collect and populate – flexible timeframes should be provided to enable an efficient process to be used."*
- CitiPower Powercor stated that it *"supports the provision of GPS coordinates for all, not just rural sites. This should apply only to new connections, meter exchanges or changes in the Meter Provider role post the introduction of this change."*

AusNet Services, Endeavour Energy, Energy Queensland - Energex and Ergon Energy Network, EvoEnergy, Powerlink Queensland, and TasNetworks did not support the inclusion of GPS Coordinates. EvoEnergy stated *"No do not support, as it is a cost with no benefit to the current MPB. Should be captured as part of meter replacement or new installations."*

Definition of rural

In the Issues Paper, AEMO proposed that the provision of GPS coordinates should apply to NMIs in rural areas. The majority of participant responses supported the use of a consistent definition of rural and accepted the suggested "Designated regional area postcodes" list published by the Australian Government. Origin Energy stated *"Yes, Origin supports the use of "Designated regional area postcodes" to define "rural."*

A number of respondents supported including a definition of "rural" in the procedures but did not believe that the 'Designated regional area postcodes" list applied the appropriate definition. SA Power Networks stated *"SA Power Networks support this concept, however, allowances will need to be made that enable for the exclusion of major regional centres/townships that would fall within the post code areas."* and Evo Energy added that the procedures *"Need a defined national source"*.

Ausgrid suggested an alternative "*… Postcodes cannot be used to determine whether a site is rural and most post codes will contain both rural and non rural installations. Using this post code would require country town to include GPS coordinates which is not the intent. The definition of rural areas is determined by the council zoning determination. Ausgrid connection policy define rural as: An area zoned as rural under a local environment plan made under the Environmental Planning and Assessment Act 1979 (NSW)."*

Endeavour Energy was amongst those who did not support the proposed definition *"… if GPS coordinates were to be added to MSATS then we do not agree with the proposal to use designated regional area postcodes to define rural. This definition is too broad because the postcodes that are captured in this definition also captures urban premises"*.

Application to MRIM

AEMO received a mixed response to the application of the GPS Coordinates to all MRIMs as proposed in the Issues Paper. There was some support as evidenced by United Energy - "*United Energy supports the provision of GPS coordinates for sites with an MRIM meter."* Various respondents asked why AEMO had singled out MRIMs and asked about MRAMs, Basics and all NMIs. AGL stated that it *"believes that GPS coordinates should be included for all meters, not just MRIM, but MRAM, Comms, VICAMI etc."* PLUS ES was amongst those who did not support the focus on MRIMs - *"PLUS ES recommends a cost benefit analysis as the MRIM is a declining metering population for NECF states. Does MRIM include VIC AMI meters? We also seek clarity why the requirement is only MRIM and does not include MRAM meters"*.

Application to new connections

AusNet Services, Endeavour Energy, and Powerlink Queensland did not support the introduction of the GPS Coordinates for all new connections.

TasNetworks highlighted concerns with respect to the implications to its data storage and existing processes: *"TasNetworks would need to consider the organisational impact of recording and storing this information. We are cautious about making it mandatory given the potential system (market & field) and business process changes required."*

All other feedback supported the addition of GPS Coordinates for new connections. EvoEnergy stated *"Yes as it can be part of the meter installation process, if not already."*

Other scenarios that should be included for GPS Coordinates

Respondents provided additional comments and suggestions for implementing the proposed inclusion of GPS coordinates in the standing data:

- United Energy: *"United Energy supports the provision of GPS coordinates post a meter replacement or meter churn"*.

- Vector Metering: *"If you do not make the fields mandatory and population becomes 'optional' then businesses will choose not to collect and not to populate. This will dilute the benefits of collecting the information. Locating meters especially in rural locations is a material issue; All meters regardless of type should have location details made available in MSATS"*.
- ERM Power: *"Yes - where the meters are capable."*
- Origin Energy: *"Yes, Origin believes that the provision of this information should be made mandatory for existing meters in case of meter fault issues or for any other emergency. There is an opportunity for DNSP's as part of their meter reading schedule to capture the GPS coordinates for every site. This way within 90 days of a meter read cycle all GPS coordinates would be available."*

Some respondents also used this as an opportunity to reinforce that they believed the provision requirement should be "Required" rather than "Mandatory":

- Ausgrid: *"Not mandatory only required."*
- TasNetworks: *"Yes, TasNetworks believes that GPS coordinates should only be required fields."*

Degree of accuracy the GPS measurements

In the Issues Paper, AEMO sought feedback as to the level of accuracy that would be required of the GPS coordinates collected:

- four decimal places allow identification to the nearest 10 metres;
- five decimal places allow identification to the nearest metre; or
- six decimal places allow identification to the nearest 10 centimetres.

The majority of respondents stated they wished the accuracy to be at five decimal places (nearest metre). AGL stated *"…that 5 decimal places (ie the nearest metre) should be adequate for locating a meter. Also, noting that the GPC* [GPS] *equipment, may not be physically able to get any closer to the meter in any case. Four decimal places (10m) does not seem adequate for locating a meter."*

SA Power Networks suggested *"SA Power Networks would suggest that the systems field design should be future proofed and therefore provide for six decimal places but the procedures provide flexibility in the length that can be provided."*

Vector Metering stated *"Four; 10 meters is close enough."*

4.6.2 AEMO's assessment

A fundamental objective of the energy market is efficiency in the long-term interests of consumers. AEMO's assessment is that the benefits of providing GPS coordinates enhances the capability of industry to locate and provide metering services, in particular where a meter is located away from main buildings such as a pump in a field. AEMO's assessment is that the proposal provides an opportunity to significantly streamline processes particularly for rural customers.

Rural sites

The majority of participant responses supported the addition of GPS Coordinates for rural sites. PLUS ES supported the addition of GPS Coordinates but highlighted that making the field "Mandatory" comes at a cost and may lead to inaccuracies in the data provided. AEMO agrees that for the initial stage of the addition of this field that it be "Required". However, AEMO does not agree that this should be a permanent setting and proposes that after 12 months that it be changed to "Mandatory". This will allow for up to four manual meter reading cycles to collect the GPS coordinates and also to explore the use of online tools to identify GPS coordinates for the minority of meters that were not able to be collected during a site visit.

AEMO notes that this change does not only cover small customer metering, rather it covers all rural NMIs including contestable sites and involving MCs.

Definition of rural

The majority of participant responses supported the use of a consistent definition of rural and accepted the suggested "Designated regional area postcodes" list published by the Australian Government. Various respondents suggested that AEMO needed to define a consistent approach to the definition of "rural" but felt the suggested definition was too broad. AEMO agrees that a definition for "rural" that is consistent across the NEM is desirable as it will avoid misunderstandings as to when the GPS Coordinates are Required. Without an alternative definition having been suggested, AEMO proposes to maintain the use of the "Designated regional area postcodes" list published by the Australian Government.

Application to MRIM and new connections

AEMO received a mixed response to the application of the GPS Coordinates to all MRIMs. AEMO notes the mixed response and has reviewed the approach to MRIMs and considers the intention of the field is to cover manually read meters including MRAM and Basic meters.

AEMO notes that there was general support for applying the GPS Coordinates field to all new connections and agrees that these should be included as "Mandatory" to ensure full data population for the future.

Other scenarios that should be included for GPS Coordinates

AEMO agrees that meter exchanges and meter churns, like new connections, should be included in data to future proof location details of meters for the market.

Degree of accuracy the GPS measurements

AEMO agrees that five decimal places should allow the appropriate level of accuracy to enable meter locations to be found.

4.6.3 AEMO's conclusion

AEMO propose to add the new GPS Coordinates field as follows:

- "Required" for Rural sites for a period of 12 months after which the field becomes "Mandatory";
- "Required" for manually read meters for a period of 12 months after which the field becomes "Mandatory";
- "Mandatory" for all new connections; and
- "Mandatory" for all meter exchanges and meter churns.

AEMO proposes to apply the definition of Designated Rural Post Codes to enable a consistent application of the definition of rural and assign the accuracy of five decimal places to the coordinates. However, AEMO is seeking additional feedback from participants in this consultation round.

Questions:

4. Please indicate the benefits for expanding the GPS coordinates field to cover all NMIs given this would be a significant cost? For example, some multi-floor buildings would have the same GPS coordinates so you may also need to have elevation for which floor (assuming metering on each unit)?

5. AEMO has applied the definition of rural using the 'Designated regional area postcodes' to gain consistency in approach, however feedback indicates a mixed response to this option. Is there an alternate NEM wide definition that can be applied across the NEM? AEMO notes, for example, in Queensland NMIs are required to be classified as urban, short rural and long rural for Guaranteed Service Levels. Is there something similar in other jurisdictions and can it be applied there?
6. Do you agree with AEMO's proposal? If yes, why? If no, why not? Please provide reasons.

4.7 Network Additional Information field

4.7.1 Issue summary and submissions

In the Issues Paper, AEMO proposed that the following fields be removed as they have a very low population rate and appear to not be valued by participants:

- Demand1.
- Demand2.
- Network Additional Information.

The majority of Participant responses:

- agreed with AEMO that Demand1 and Demand2 fields should be deleted (refer to Section 5.2 of this Draft Report); and
- did not agree with AEMO on the removal of the Network Additional Information field as they found it useful because it records information that cannot be held elsewhere.

4.7.2 AEMO's assessment

Origin Energy submission noted: *"These fields would have added value but would need to be extended to cope with rolling 12 month demand. If not, then they can be removed"*. AEMO considers that it is not viable to have these fields extended to cope with rolling 12 month demand, and the number will not be stored elsewhere, however the Network Tariff field will identify if demand is recorded for that site.

TasNetworks submitted that the "Network Additional Information field should remain: *"Network Additional Information is used by TasNetworks is used to populate basic meter register circuit information and the meter tariff code. There is no other field suitable to provide this information"*.

AEMO agrees to retain the Network Additional Information field reflecting the majority of participant feedback received requesting not to remove this field.

4.7.3 AEMO's conclusion

AEMO proposes to remove the Demand1 and Demand2 fields but retain the existing Network Additional Information field.

Questions:

7. What uses do participants (retailers, networks and metering parties) have for the Network Additional Information field?
8. Are there other fields that may be suitable to apply this information? For example, Meter Location field with an increased character length available for the field.

9. Do you agree with retaining the Network Additional Information field?

4.8 Is DPID still required if G-NAF PID is added?

4.8.1 Issue summary and submissions

In the Issues paper, AEMO proposed to add G-NAF PID to MSATS if the data were initially populated by AEMO on the basis of structured address (as is currently done for DPIDs) and thereafter by LNSPs.

The main issue identified in participant feedback related to availability of G-NAF PID during NMI creation for new sites as currently the database is only updated quarterly. AusNet Services noted in its submission:

"AusNet Services does not support the inclusion of the G-NAF PID field. The G-NAF data is updated too infrequently (only updated quarterly in Feb, May, August and November) to be included as a data set, especially for NMI Creation (CRC 20XX) for New Connections. Sometimes even services like LandVic are not updated frequently enough and networks are needing to refer online planning permit processes to undertake connections. "

Other submissions argued that the cost would outweigh and benefit.

EnergyAustralia agreed that G-NAF should be added and that it should be initially populated by AEMO and subsequently by the LNSP for future new connections:

"Yes, the G-NAF PID is another step to ensuring accuracy in NMI addresses. This is a significant issue that the industry has had for many years, anything that can be done to reduce the poor customer experience should be adopted. The data initially being updated by AEMO seems to be the best approach, as they can roll out the updates across all LNSPs at once. New addresses should be the responsibility for the LNSP."

Some feedback suggested the following:

- retain the DPID field for a certain period and then review its removal;
- identify system impact of adding G-NAF PID; and
- further work on viability and cost-benefit analysis.

Feedback from Ausgrid indicated retaining the DPID field until analysis has been conducted on the use of G-NAF PID. Feedback from Ausgrid and Vector Metering appeared to indicate confusion as to what G-NAF actually provides. AEMO refers to the G-NAF FAQ's on the website www.psma.com.au that "G-NAF contains addresses for physical locations, not postal locations".

4.8.2 AEMO's assessment

Having considered the feedback from participants, AEMO considers that there is merit in further investigating the inclusion of G-NAF. Subject to an investigation into feasibility of this option, the most effective way to utilise G-NAF would be for AEMO to provide the updates quarterly. In order to populate MSATS for the existing NMI's, only NMIs with structured addresses would be matched with the G-NAF database.

To mitigate the issues raised by some participants about the usage of DPID, AEMO would retain the DPID and review its applicability after one year of G-NAF being populated.

4.8.3 AEMO's conclusion

AEMO proposes to add G-NAF PID for any NMI that currently has a completed structured address and review the DPID field's applicability after one year of G-NAF being populated. AEMO would be responsible for maintaining the fields as the G-NAF database is updated each quarter.

4.9 Add G-NAF PID and add Section and DP Number

4.9.1 Issue summary and submissions

Participant feedback indicated no clear support for or against the proposal to add G-NAF PID and also Section and DP number. Feedback from Ausgrid, AusNet and Endeavour Energy indicated lack of availability of G-NAF PID number (up to 6 months) for new sites. Endeavour Energy indicated that customers are more likely to know their section or DP number which will enable the retail search for the NMI using the section and/or DP number. AusNet indicated introduction of section and DP number in New South Wales and not in Victoria. AusNet also identified that G-NAF PID is a complex database consisting of 30 tables that makes it difficult to use without considerable manipulation. Feedback from AGL and Energy Australia indicated the need for Section/DP numbers in NSW and these fields will be required if G-NAF PID is not added.

4.9.2 AEMO's assessment

AEMO notes from the issue summary above that participants are concerned about availability of G-NAF PID value during NMI creation. The Section/DP number fields are required in NSW. Feedback also indicated gaps in the knowledge of G-NAF PID field amongst respondents. In relation to the feedback that a customer is more likely to know their Section/DP numbers than G-NAF PID value, AEMO intends to also add fields to capture Section and DP information in the structured address and set them as "Required" for NSW and ACT.

4.9.3 AEMO's conclusion

AEMO proposes to add the G-NAF PID field and add the Section and DP Numbers as Required for NSW and ACT within the structured address fields since they add value in site identification at NMI creation.

4.10 Data Transition

AEMO received feedback for the proposed changes outlined in Sections 4 and 5 as to how a data transition will occur to effect those changes.

This section:

- describes solution options for the scenarios below; and
- seeks feedback/responses to the proposed high-level solution / questions / assumptions.

4.10.1 Scenarios

AEMO considered the following three scenarios:

- Scenario 1 – Existing fields are removed – "To Remove" e.g. Meter Constant to be removed from CATS_METER_REGISTER table.
- Scenario 2 – Introduce new fields – "Proposed Field" e.g. Meter Malfunction Exemption Number.
- Scenario 3 – Amendments to existing fields and/or processes – "To Amend" e.g. make the Controlled Load field enumerated.

In each of these scenarios data population is required for various Standing Data elements (for example, new fields or changes to existing fields). In each of the relevant sections of this Draft Report, AEMO described proposed solutions for these scenarios and requires participant feedback to understand any industry issues, concerns, or potentially, more viable solutions.

Scenario 1: Drop existing columns (To Remove)

Existing fields such as Meter Constant and Meter Point are proposed to be removed as they have no current or anticipated future use.

Participants are requested to provide their feedback on the following two solution options:

1) 'To Remove' fields will be retained in the MSATS database and aseXML schema. Data in these fields will be retained as-is. No data manipulation or cleansing would be performed
    a. Data for these fields would be supplied for the current and historical records (if populated) in reports such as C4, NMI Discovery, NMI Details in both Browser and Batch/Application Programming Interface (API)
    b. If these fields are populated in the new inbound change requests, MSATS would not accept the change request (reject) or ignore
2) 'To Remove' fields would be removed (dropped) in the aseXML schema (new) and the MSATS database
    a. Data for these fields would not be supplied in the outbound current and superseded aseXML documents
    b. Data if supplied in the inbound supersede / earlier versions; AEMO will ignore the data in the aseXML (no reject)
    c. Reports such as MSATS snapshots would not supply the data for the dropped fields
    d. No CATS Notification or data files would be supplied to state which rows of MSATS will be impacted related to dropping the fields in MSATS database. Participants could choose to replicate the dropping of these fields in their systems

Questions:

10. For Removed fields, would you prefer Option 1 (retain history) or Option 2 (remove history)?

Scenario 2: Add a new field (Proposed Fields)

This scenario applies to new fields proposed to be introduced such as GPS Coordinates. Participants are requested to evaluate the following options and provide their feedback on the preferred option and questions documented in each of the following options:

1) Update data via inbound Change Request

    New fields would be created with default value of "null" (empty). If the data for these fields are to be populated, Participants would submit a new change request. The change requests could be submitted in progressive manner to populate the required fields.

    A time period may be defined for this initial population of high-volume Change Request activity, for example six months.

    Different Change Reason Codes could be defined to alter the generation of notifications. These transitionary Change Reason Codes could be retired after the population of the data is complete.

2) Update data in bulk

Participants are requested to provide their feedback on the following assumptions for the initial data population, noting that Data for the new fields will be populated only for the current records i.e. RowStatus = 'A' and ToDate = high dates:

a. AEMO would run scripts to derive and populate the value of these fields from pre-existing MSATS data using the agreed business rules (e.g. attributes related to transformer)

i. Should they

a. be in-place updates (blind updates)? OR

b. follow two-dimensional model updates?

ii. Instead of sending out notifications after the updates are made; could participants apply the same rule and update the data in their systems?

b. AEMO provides a capability to bulk upload data for the impacted NMIs/rows. There will need to be a feasibility assessment by AEMO to detail the technical implementation of this option. AEMO will accept the data using an agreed interface and process it. AEMO used a bulk process (Bulk Data Tool rather than Bulk Change Tool) for the creation of NMIs in new full retail contestable market areas – e.g. Western Queensland, Tasmania, and South Australia. This process could be altered to enable updating of NMIs, however, AEMO would need to undertake an assessment of utilising this for initial data population.

AEMO notes this is not our preferred option due to the expense associated with establishing this capability along with mechanism to correct any errors. Further, any exceptions from the upload process will be passed back by individual transactions per NMI to Participants for further evaluation and/or resubmission.

i. Should they:

a. be in-place updates (blind updates)?

b. Should they follow two-dimensional model updates?

ii. What would be expected batch size? (for each of the fields)

iii. How many batches are expected?

c. Fields such as 'Meter Malfunction Exemption Expiry Date' are being added and the data must be populated by AEMO for pre-existing exemptions.

i. Should they:

a. be in-place updates (blind updates)?

b. follow two-dimensional model updates?

3) Data updated in Step #2 (data provided in bulk updates) requires a broadcast/notification to the other eligible Participants based on the roles/fields that are being updated. Options for how the data could be broadcast are discussed in the "Outbound Notification Options" section.

4) Depending on the batch size, AEMO may have to use a mix of Option 1 (update data via inbound Change Request) and/or Option 2 (update data in bulk). For each of the impacted fields; state which of the above methodologies would be appropriate as shown in the template below (content in the table below are indicative).

Field	Data Population Option	Batch Size	# of Batches
Example CT Accuracy Class	Update data via inbound Change Request	NA	NA
<new field>	Update data via inbound Change Request and update data in bulk	10,000 NMIs	200

5) Enumerations are proposed to be introduced for several fields e.g. controlled load. If enumerations are implemented at the aseXML schema/database level; all the retrospective data must also be cleansed to assign one of the enumerated values. Are these enumerations required at the aseXML (or) enforced as one of the validations when processing the inbound change requests? Note, by not having these enumerations in aseXML but having them as inbound Change Request validations, it enables quick alteration of these enumerations, including a removal of an enumerated value.

Questions:

11. For Added fields, would you prefer Option 1, 2a, 2b, 2c, 3, 4 or 5?
12. If you choose Option 2a, please choose between i(a) or i(b) and provide answers for ii.
13. If you choose Option 2b, please choose between i(a) or i(b) and provide answers for ii and iii.
14. If you choose Option 2c, please choose between for i(a) or i(b).
15. Do you have any further comment regarding the above?

Scenario 3: Amend an existing field (To Amend)

The following sub-scenarios are covered under this scenario:

1) Data in the existing columns are to be updated to provide an accurate and meaningful value e.g. Controlled Load

2) Repurpose the existing columns to provide specific context e.g.

   - Transformer Location -> CT Location and VT Location
   - Transformer Ratio -> CT Ratio and VT Ratio
   - Transformer Type -> CT Type and VT Type

   a. Instead of repurposing the existing fields, six new fields could be created. Population of the data in one or more of these six new fields may be derived from the existing three fields. The three existing fields (i.e. transformer location, transformer ratio, transformer type) will then be removed.

      Should the three fields be repurposed, and three new fields created, (or) should the three existing fields be dropped, and six new fields be created?

Participants are requested to evaluate the following options and provide their feedback on the questions documented in each of the options and identify their preferred option:

1) Update data via inbound Change Request

   Data in the existing fields will be corrected by submitting a new change request. The change requests could be submitted in progressive manner to populate the required fields.

2) Update data in bulk

a. Derive the value of the fields from pre-existing MSATS data using the agreed business rules. AEMO implements scripts to determine the value and update (e.g. Controlled Load)

   i. Should they:

      a. be in-place updates (blind updates)?

      b. follow two-dimensional model updates?

   ii. Instead of sending out notifications; is it possible / practicable for participants use the same rule and update the data in their systems?

b. AEMO provides a capability to bulk upload data for the impacted NMIs/rows. There would need to be a feasibility assessment by AEMO to detail the technical implementation of this option. AEMO would accept the data using an agreed interface and process it. Any exceptions from the upload process are to be passed back to Participants for further evaluation and/or resubmission.

   AEMO did use a bulk process (Bulk Data Took (BDT) and not Bulk Change Tool (BCT) for the creation of NMIs in new full retail contestable market areas – e.g. Western Queensland, Tasmania, and South Australia. This process could be altered to enable updating of NMIs and assessment of utilising this for initial data population will have to be performed.

   AEMO notes this is not our preferred option due to the expense associated with establishing this capability along with mechanism to correct any errors. Further, any exceptions from the upload process will be passed back by individual transactions per NMI to Participants for further evaluation and/or resubmission.

   i. Should the updates:

      a. be in-place updates (blind updates)?

      b. follow two-dimensional model updates?

   ii. What would be the expected batch size for each of the fields?

   iii. How many batches are expected?

3) Data updated in step 2 (update data in bulk) requires to be broadcast/notification to the other eligible Participants based on the roles/fields that are being updated. These options are covered in "Outbound Notification Options" below.

4) The most suitable option may be a mix of Option 1, Option 2a and Option 2b. For each of the impacted attribute; please advise which of the above methodologies would be appropriate.

Field	Data Population Option	Batch Size	# of Batches
Example Controlled Load	Update data in bulk – AEMO	All NMIs	1
<new field>	Update data in bulk – Participants	10,000 NMIs	200

5) Enumerations are introduced for several fields e.g. controlled load. If enumerations are implemented at the aseXML/database schema level; all the retrospective data must also be cleansed to assign one of the enumerated values. Are these enumerations required at the aseXML (or) enforced as one of the validations when processing the inbound change requests? Note, by not having these enumerations in aseXML but having them as inbound Change Request validations, it enables quick alteration of these enumerations, including a removal of an enumerated value.

Questions:

16. For Amended fields, would you prefer Option 1, 2a, 2b, 3, 4 or 5?
17. If you choose Option 2a, please choose between i(a) or i(b) and provide answers for ii.
18. If you choose Option 2b, please choose between i(a) or i(b) and provide answers for ii and iii.
19. Please provide any further details required

Outbound Notification Options

When data is populated in bulk (in the new fields or existing fields) and notifications are required for the participants; the following options could be considered:

1) Updates are published via the current CATS Notification process
    a. For initial load via the Change Request process, different Change Request (CR) Codes could be defined to alter the generation of notifications. Transitional CRs used.
2) MSATS snapshot to synchronise the data that has been updated in bulk
3) Leverage Wholesale Data Interchange (DI) process: Participants would be able to subscribe to receiving the notifications (Notifications & Standing Data updates) either via the DI process or the conventional CATS Notification process. If Participants opt to subscribe to DI process, the Standing Data updates would be supplied via the DI delivery mechanisms. There would need to be a feasibility assessment by AEMO to detail the technical implementation of this option.

Questions:

20. For Outbound Notifications, would you prefer Option 1, 1a, 2, or 3?
21. Do you have an alternate method of receiving Outbound Notifications? If so, please provide details.

5. ISSUES WITH GENERAL AGREEMENT BETWEEN PARTICIPANTS AND AEMO

In preparation for this consultation AEMO held separate industry sector meetings to provide participants with an overview, background and context for the MSDR consultation. AEMO also ran an informal industry survey on MSATS standing data fields to gather participants feedback on changes proposed by AEMO. AEMO then followed the survey with an industry workshop to discuss the feedback gathered and summarise and prioritise issues for consultation and implementation.

From that pre-consultation process, there were a number of areas where AEMO considered it had reached general agreement. This section details those areas and highlights any feedback received.

5.1 General Metering Installation Information

5.1.1 Issue summary and submissions

Fields proposed to be amended

AEMO proposed amendments to a number of metering installation fields, the intent of these changes is to improve market efficiency by rationalising fields. This rationalisation also involves making each of the fields 'Required' or 'Mandatory'[2] to ensure the data set is comprehensive and that the data is of sufficient quality to be used by market participants. The following table is a summary of those proposed amendments. AEMO's assessment of the issues is included in Section 5.1.2 below.

Field	AEMO Proposal	Participant Feedback
Last Test Date	AEMO proposed that this definition be clarified to refer to testing only and the field be made 'Mandatory'. Data quality to be maintained by validating it according to date format.	AGL and PLUS ES did not support the proposed concatenating of meter test result and last test date into a coded field and indicated that a new concatenated field would be hard to validate requiring logic to pull apart before any useful information could be obtained. They suggested fields remain separate. AGL also suggested the Last Test Date be retained as a date field (and hence easily queried and validated) and Meter Test Result Accuracy be retained as an enumerated field (e.g. pass / fail) to make data queries simple and agent understanding clear.
Meter Test Result Accuracy	Amended to instead be a combined test date and pass / fail flag (e.g. a successful test on 1 January 2020 could be coded as 202001011) Logic list to be included in description of field to ensure data quality.	
Meter Manufacturer	To be made 'Mandatory' with a 12-month transition timeframe. To be an itemised list with regular compulsory updates and include an UNKNOWN option.	Ausgrid suggested that if Meter Model and Meter Manufactures will be an enumerated list, then Ausgrid would require "Unknown" to be included in the enumerated list.
Meter Model	To be made 'Mandatory' with a 12-month transition timeframe. To be an itemised list with regular compulsory updates.	

[2] Please consult the glossary for the meaning of 'Required' and 'Mandatory'.

Field	AEMO Proposal	Participant Feedback
Meter Read Type Code	This field to be made 'Required' and the fourth character be used to identify what interval length the meter is capable of reading. This includes five, 15 and 30 minute granularity. This follows on from AGL's Issue Change Form raised at the Electricity Retail Consultative Forum.	Red Lumo suggested that rather than combining four pieces of information in a single field, each could be separated into its own relevant enumerated field - allowing for easier future changes if required. Also, rather than A = 5, B = 15 etc, it would be better to have an 'interval length' field with values 5, 10, 15, 30 etc. (Noting that NEM12 allows 10-minute interval length, which is not provided for in this proposal). SA Power Networks did not see value in the Meter Read Type Code being used for Type 5, 6, 7 or Non-Contestable UMS meters. The reason for the proposed change was to enable identification of the associated metering data interval length. There is only a single interval length possible for these metering types. SA Power Networks requested that any changes should make it clear that this field is not required to be provided for these meter types.
Meter Suffix	To be made retrospectively 'Mandatory' with a 12-month transition timeframe. This is with a view towards removing Meter Point in the future. AEMO notes: • Data transition considerations are being formulated as part of the 5MS program particularly through the 5MS/GS Metering Transition Plan. • This field has always been "Mandatory" and no change is required here.	Aurora Energy and EvoEnergy raised questions on changes made as part of the 5MS Metering Package 3.
Meter Use	To be made 'Required'. Clearer description and an itemised list to be provided (EG: statistical, logical meters).	

Fields proposed to be removed

AEMO proposed the fields described in Table 2 below be removed from MSATS, in line with the proposed amendment of Schedule 7.1 by rule change initiated by AEMO. This proposed rule change is discussed in more detail in Section 5.9.

The majority of participant responses supported removal of the following metering installation information fields in the following table as they were low-quality data and underpopulated fields.

Field	AEMO view
Asset Management Plan*	This field will be difficult to make a structured field (and thus high-quality and complete), and it is currently sparsely populated. This indicates that participants do not find it useful.
Calibration tables*	This field is virtually unpopulated. This indicates that participants do not find it useful.
Meter Constant*	This field was originally proposed by AEMO to be made 'Mandatory' as it has a 55.81% population rate. However, industry feedback indicated it may not be relevant to the market. The necessity of this field has been raised as part of this consultation.
Meter Point*	This field will be made redundant with the Meter Suffix field being made 'Mandatory' and available retrospectively.
Meter Program	This field will be difficult to make structured and it is currently very sparsely populated which indicates that participants do not find it useful.
Meter Route	This field is well-populated but not widely used. AEMO proposes to remove this field in favour of improved locational information.
Meter test & calibration program*	This field will be difficult to make structured and it is currently very sparsely populated which indicates that participants do not find it useful.
Meter Test Result Notes	This field will be difficult to make structured and it is currently sparsely populated which indicates that participants do not find it useful.
Next Test Date*	AEMO proposes that this field be removed. This field is not useful to industry as a whole. Please see comments on Last Test Date
Test Performed By	This field will be difficult to make structured and it is currently sparsely populated which indicates that participants do not find it useful.

* These are fields are described in NER Schedule 7.1.

Industry-proposed fields

New fields were proposed by workshop participants during the pre-consultation phase of the Review. These proposed fields were discussed at the February 2020 workshop where a majority of attendees agreed that these fields would not provide enough value for the rest of the market to justify the cost of their inclusion in MSATS. In the Issues Paper AEMO proposed not to add those fields in the initial stage of consultation and asked for participant feedback. The proposed fields were:

- Meter Commission Date – the date the meter was commissioned. This was proposed as it may be useful for new retailers that win NMIs that are already active or when there are discrepancies around the NMI active date. However, AEMO does not believe this would provide value for the market as a whole and this information can be provided through other means.
- Disconnection Method - an enumerated list describing the method by which the meter at that point for that NMI was most recently disconnected.
- Meter Locks - an enumerated list denoting the presence of locks on the metering installation.
- Minimum Interval Length - the minimum interval at which the meter can record data.
- Plug-in Meter Flag - was proposed by workshop participants, but improving the use of the Meter Model and Meter Manufacturer fields by participants will mean this is no longer necessary as participants can determine whether a meter is a plug-in meter by referring to the Meter Model and Meter Manufacturer.

AEMO has proposed not to add the below fields which were suggested by industry stakeholders for consideration in the MSATS Standing Data Review:

- Meter Family Failure.

- Meter Test Report.

The majority of participant responses to the Issues Paper agreed that there is no need to add those fields and AEMO considers that no compelling reason was received to add those fields to MSATS.

5.1.2 AEMO's assessment

Fields proposed to be amended

The majority of participant responses agreed to the following proposed amendments of the following existing metering installation information fields:

Field	AEMO Assessment
Last Test Date and Meter Test Result Accuracy	AEMO agrees with AGL to leave Last Test Date and Meter Test Result Accuracy as separate fields while making them 'REQUIRED'. AEMO intends to change the 'Meter Test Result Accuracy' field name to 'Meter Test Result' and the field will be enumerated to indicate Pass or Fail.
Meter Manufacturer and Meter Model	AEMO agrees with the majority of participants to make the fields mandatory with an enumerated list, and agrees that "Unknown" should be included in the enumerated list of values.
Meter Read Type Code	AEMO intends to maintain the field as a combination of four pieces of information and will use the pre-existing fourth character within the field to provide the interval length. AEMO notes that interval lengths can only be sub-multiples of the settlement interval length by agreement. The current sub-multiple for 30 minutes is 15 minutes and, under the 5MS procedure changes, any interval length greater than five minutes would not be allowed. AEMO also notes that the Meter Read Type Code is not applicable to calculated meter types as evidenced by the first character representing either R (remote) or M (manual), hence, Type 7 and non-contestable is not included in this field. The reason for applying the fourth character logic to include manually read meters is to avoid a mixture of three or four character length responses in the one field when the field is 'Mandatory'. AEMO recognises that industry will need to know a meter's capability of interval length of five or 30 minutes for Type 4A MRAM meters.
Meter Suffix	AEMO notes that this field has always been mandatory and no change is required here.
Meter Use	AEMO agrees with the majority of participant responses that this field to be made 'Required' and provide possible lists of enumerated values for this field.

Fields proposed to be removed

AEMO agrees with the majority of participant responses that the following metering installation information fields should be removed:

- Asset Management Plan.
- Calibration Tables.
- Meter Constant.
- Meter Point.
- Meter Program.
- Meter Route.
- Meter Test & Calibration Program.

- Meter Test Result Notes.
- Next Test Date.
- Test Performed By.

Industry-proposed fields

AEMO agrees with the majority of participant responses to the issues paper, that there is no need to add the following fields and no compelling reason was provided in feedback to support their addition, hence AEMO considers that the following fields should not be added:

- Disconnection Method.
- Meter Commission Date.
- Meter Locks.
- Minimum interval length.
- Plug-in Meter Flag.
- Meter Family Failure.
- Meter Test Report.

5.1.3 AEMO's conclusion

Fields proposed to be amended

AEMO proposes the following amendments of the following existing metering installation information fields:

Field	AEMO Proposal
Last Test Date	Field definition to be clarified to refer to testing only and the field be made 'Required'. Data quality to be maintained by validating it according to date format.
Meter Test Result Accuracy	Field to be made 'Required' and renamed from 'Meter Test Result Accuracy' to 'Meter Test Result'. The field will be enumerated to indicate 'Pass' or 'Fail'.
Meter Manufacturer	Field to be made 'Mandatory' with an itemised list of regular compulsory updates.
Meter Model	Field to be made 'Mandatory' with an itemised list of regular compulsory updates.
Meter Read Type Code	Field to be made 'Mandatory' and fourth character to identify whether meter capable of reading at five-minute granularity. • Read Type Code 4th Character should have the following possible values: o A – 5 minute o B – 15 minute o C – 30 minute o D - Metering installation de-energised, cannot convert to 5-minute o M - Manually Read Accumulation Meter
Meter Suffix	AEMO notes that this field has always been 'Mandatory' and no change is required here.

Field	AEMO Proposal
Meter Use	Field to be made 'Required' with the following possible enumerated list of values: • Average • Prepaid • Revenue • Logical • Check • Statistical • Information • Unknown • Sample • Solar/PV

Fields proposed to be removed

AEMO proposes the following existing metering installation information fields should be removed as each of them have no current or future uses:

- Asset Management Plan.
- Calibration Tables.
- Meter Constant.
- Meter Point.
- Meter Program.
- Meter Route.
- Meter Test & Calibration Program.
- Meter Test Result Notes.
- Next Test Date.
- Test Performed By.

Industry-proposed fields

AEMO proposes the following fields should not be added to MSATS:

- Disconnection Method.
- Meter Commission Date.
- Meter Locks.
- Minimum interval length.
- Meter Family Failure.
- Meter Test Report.
- Plug-in Meter Flag.

5.2 Register Level Information

5.2.1 Issue summary and submissions

In the Issues Paper, AEMO proposed to make the following fields enumerated:

- Controlled Load.
- Time of Day.

The data in the Controlled Load and Time of Day fields is of low-quality and not standardised. The fields are almost 100% populated, as a result AEMO proposed to have enumerated list of values for those fields to improve data quality and increase the usefulness of those fields to the different participant categories. AEMO also asked participants in the first stage of consultation to provide suggested values to be included on the proposed enumerated list for those fields.

The majority of participant responses agreed with AEMO to make those fields enumerated lists and provided different suggestion of possible values to those enumerated lists.

AEMO has also proposed that the following fields be removed (refer to Section 4.7 of this Draft Report) as they have a very low population rate and seems of no real value of use to the participants:

- Demand1.
- Demand2.
- Network Additional Information.

The majority of Participant responses:

- Agreed with AEMO that Demand1 and Demand2 fields should be deleted.
- Did not agree with AEMO on the removal of the Network Additional Information field as they found it useful and holding information currently that cannot be held elsewhere (refer to Section 4.7 of this Draft Report).

5.2.2 AEMO's assessment

AEMO agrees with the majority of participant responses that Controlled Load and Time of Day fields should be made enumerated lists. AEMO has reviewed the submissions for those enumerated lists and consolidated those suggestions into a proposed list of values.

AEMO agrees with the majority of participant responses that Demand1 and Demand2 fields should be deleted from register level information fields.

5.2.3 AEMO's conclusion

AEMO proposes to make Controlled Load and Time of Day fields enumerated lists with the following values:

- Proposed Controlled Load values:
    - No.
    - CL1.
    - CL2.
    - CL3.
- Proposed Time of Day values:
    - INTERVAL.
    - PEAK.
    - BUSINESS.
    - SHOULDER.

- EVENING.
- OFFPEAK.
- ALLDAY.
- CONTROLLED.

AEMO proposes to remove the following fields:

- Demand1.
- Demand2.

5.3 Metering Installation Location Information

5.3.1 Issue summary and submissions

In the Issues Paper, AEMO proposed to delete the Additional Site Information field, with any information currently stored in Additional Site Information being moved to Meter Location. The majority of participant responses supported AEMO's proposal although some suggested that the character limit of the Meter Location field should be increased to accommodate all information from Additional Site Information. Participants have also recommended expanding the description of the Meter Location field to include details of information that should be included in this field.

5.3.2 AEMO's assessment

AEMO agrees with the majority of participant responses that the Additional Site Information field be deleted, and information currently held to be moved to Meter Location field after amending the description of Meter Location field and increasing its character limit.

5.3.3 AEMO's conclusion

AEMO proposes the field Additional Site Information be deleted and its information moved to Meter Location after amending the description of Meter Location field and increasing its character limit. Section 4.10 of this document provides a discussion on options for data transition.

5.4 Meter Read and Estimation Information

5.4.1 Issue summary and submissions

In the Issues Paper, AEMO proposed the field Next Scheduled Read Date be made Mandatory for manually read meters and Type 7 metering installations as per CATS Procedures clause 2.4(p) instead of 'Optional' due to the importance of this field and its usefulness to Participants and consumers. The majority of Participant responses supported AEMO's proposal.

AEMO also proposed to remove the following fields as they are rarely used and currently very sparsely populated in MSATS indicating that participants do not find them useful:

- Data Validations.
- Estimation Instructions.
- Measurement Type.

The majority of participant responses supported AEMO's proposal to remove these fields.

5.4.2 AEMO's assessment

AEMO agrees with the majority of participants to:

- Amend the Next Scheduled Read Date from 'Optional' to 'Required' for all manually read meters.
- Remove the following fields:
    - Data Validations.
    - Estimation Instructions.
    - Measurement Type.

5.4.3 AEMO's conclusion

AEMO proposes to make the following changes to the Meter Read and Estimation Information Fields:

- Amend the Next Scheduled Read Date from 'Optional' to 'Required' for all manually read meters.
- Remove the following fields:
    - Data Validations.
    - Estimation Instructions.
    - Measurement Type.

5.5 Meter Communications Information

5.5.1 Issue summary and submissions

The following meter communication information fields are rarely used and sparsely populated in MSATS. In the Issues Paper, AEMO proposed the removal of those fields from NER Schedule 7.1 (by rule change) and MSATS Procedures noting that the majority of participants supported AEMO's proposal in the pre-consultation stage for the MSATS Standing Data Review:

- Communications Equipment Type.
- Communication Protocol.
- Data Conversion.
- Password.
- Remote Phone Number.
- User Access Rights.

5.5.2 AEMO's assessment

AEMO received no submissions disagreeing with the proposed removal of the following Meter Communication Information Fields:

- Remove the following fields:
    - Communications Equipment Type.
    - Communication Protocol.
    - Data Conversion.
    - Password.
    - Remote Phone Number.
    - User Access Rights.

5.5.3 AEMO's conclusion

AEMO proposes to remove the following Meter Communication Information Fields:

- Remove the following fields:
    - Communications Equipment Type.
    - Communication Protocol.
    - Data Conversion.
    - Password.
    - Remote Phone Number.
    - User Access Rights.

5.6 Address Structure – Unstructured Address

5.6.1 Issue summary and submissions

Unstructured address fields

MSATS allows two methods to input address information about a NMI:

- The Structured Address fields, which consist of several related fields (e.g. House Number, Building Name, Street Type, and so on) that allow for the address to be provided according to the Australian Standards Document on Addressing (Australian Standard AS 4590).
- The Unstructured Address fields, which consist of three lines of free text in which an address may be provided.

Many participants have reported problems with address quality in Unstructured Address fields, because unlike the Structured Address fields, there are no validations on data quality. The Unstructured Address fields were originally added to MSATS to cater for addresses that could not be provided via the Structured Address field. Participant feedback has indicated that addresses stored in Unstructured Address fields is often able to be stored in Structured Address fields. Information that is stored in Unstructured Address fields can make it more difficult to find a NMI using the NMI Discovery process. In the Issues Paper, AEMO proposed to remove the Unstructured Address fields from MSATS, mandating that all NMIs have an address provided via the Structured Address fields.

At the MSATS Standing Data Review Pre-Consultation Workshop, participants indicated that there were few-to-no NMIs for which the address could not be provided via Structured Address fields. Rather, the problem would be in the cleansing of existing data to ensure that it could be populated in Structured Address fields while retaining additional locational information about the NMI (e.g. "pump by the dam") in other fields.

The unstructured address fields have a relatively low population rate, with Unstructured Address Line 1, 2, and 3 being 12.5%, 12.4% and 5.8% populated respectively.

There was general agreement between AEMO and participants for the proposal to cleanse the data over an agreed period and then remove the Unstructured Address fields. However, Citipower Powercor did not support the removal of unstructured address fields with United Energy stating similarly: *"We don't see any benefit in doing so and it would only result in additional cost and complexity"*.

ERM Power also did not agree noting: *"The address fields should remain unchanged as we will not have the structured address for all sites, especially new connections. Example, phone towers & pumps that don't always have the mandatory information for a structured address to be created."*

A number of participants qualified their support on the need for an appropriate transition time to perform data cleansing activities. Section 4.10 of this document provides a discussion on options for data transition.

GNAF and additional structured address fields

During the pre-consultation process, participants suggested the addition of three new address information fields:

Field	Description
G-NAF PID	A Geocoded National Address File Persistent Identifier (G-NAF PID), which comes from the free-to-use Creative Commons G-NAF database. Each G-NAF PID corresponds uniquely to an address and corresponds to a specific geocode (though this geocode will be for the site, not for the meter)[3].
Section Number	Lot numbers do not necessarily uniquely identify a plot of land in New South Wales, whereas the combination of Lot Number, Section Number, and DP Number would uniquely identify a plot of land. Participants therefore suggested that this field be made 'Mandatory' in NSW (and 'Optional' elsewhere, potentially with notes on how it ought to be used in other jurisdictions).
DP Number	A deposited plan (DP) number corresponds to an image that defines the legal boundaries of a plot of land in NSW. Participants therefore suggested that this field be made 'Mandatory' in NSW (and 'Optional' elsewhere, potentially with notes on how it ought to be used in other jurisdictions).

Notably, the G-NAF PID includes the section and DP numbers for NSW addresses (as well as any other jurisdictionally unique identification numbers) under its Legal Parcel Identifier field[4].

Given AEMO's proposal to remove the Unstructured Address fields, it will be important to ensure that the Structured Address fields can adequately capture the requisite information to uniquely identify a site. As such, if existing Structured Address fields cannot uniquely identify a site, then adding one or both of Section Number / DP Number and G-NAF PID will be imperative for ensuring address quality in MSATS.

G-NAF is a publicly accessible database, and since a GNAF-PID should have a one-to-one relationship with a physical address record, it could be populated by an LNSP by means of their own address records or by AEMO by means of the structured address records in MSATS, as has been done with the Delivery Point Identification (DPID) field. AEMO will conduct investigations to determine whether additional IT builds will be needed to perform this automatic population on the basis of structured address records (refer section 4.8).

Section Number and DP Number would function as any other Structured Address field, and as such, if they are to be included, they should be populated by the DNSP.

MSATS currently provides a DPID field, which uses a unique identifier for each address associated with a NMI if that address is a delivery address. Since all delivery addresses are also physical addresses (but not the converse), the proposed G-NAF PID field would supersede the DPID. As such, AEMO proposes to review the removal of the DPID after a transition period if the G-NAF PID field is added.

While the G-NAF PID field would contain geocodes, which are also suggested for the GPS Coordinates field, these fields contain separate geocodes for separate uses: the G-NAF PID contains the geocode for the site, whereas the GPS Coordinates field is proposed to contain the geocode for the metering installation. As such, AEMO has considered the GPS Coordinates field separately and AEMO's analysis is provided in Section 4.6 of this report.

[3] More information about the G-NAF database can be found here: https://psma.com.au/product/gnaf/

[4] G-NAF Data Product Description, *PSMA Australia*, November 2019, https://psma.com.au/wp-content/uploads/2019/12/G-NAF-Product-Description.pdf

These fields were not proposed before the dissemination of the pre-consultation feedback template, subsequently there was no pre-consultation participant feedback on these fields and minimal discussion at the workshop.

Submissions to the issues paper were generally supportive of the proposal to add G-NAF PID field to MSATS and be populated by AEMO initially and thereafter by the LNSP's. The proposal to populate the G-NAF PID field by LNSP's only was not supported by majority of the participants. AEMO intends to perform cost benefit analysis of adding the field to MSATS and providing ongoing updates on behalf of participants as the G-NAF database is updated each quarter.

5.6.2 AEMO's assessment

AEMO agrees with the majority of participant feedback to remove the unstructured address fields and add the G-NAF field.

Where participant feedback indicated that some site addresses can only be stored as unstructured, AEMO responded that they can be cleansed and aligned with structured address fields.

Ausgrid, AusNet and Endeavour Energy do not support the proposal on the basis that the G-NAF data is not updated frequently. AEMO considers that the field is 'Required' so that if available it should be populated.

AEMO also notes that structured address details are complimented by the additional location details available through the combination of the Meter Location, Location Descriptor, GNAF and GPS.

AEMO notes that to remove defunct unstructured addresses currently from MSATS requires one of the following steps:

- If the CR is created/submitted from the browser, participants should enter a single space character in each of the 3 address lines.
- If the CR is submitted via batch, the address fields should have the attribute xsi:nil="true" and no value.

5.6.3 AEMO's conclusion

AEMO proposes to remove the Unstructured Address fields from MSATS, thereby obligating all NMIs to have address details contained in the Structured Address fields, following a period for data holders to cleanse their existing address data.

AEMO proposes to add G-NAF PID and to include Section Number and DP Number.

5.7 Feeder class

5.7.1 Issue summary and submissions

MSATS has an 'Optional' Feeder Class field, which contains a code to provide participants with information to indicate the appropriate service level timeframes for performing work in relation to service order requests. This field is included in standing data to provide for a jurisdictional requirement in Queensland. AEMO's analysis shows that this has little to no usage across other jurisdictions within the NEM. AEMO proposes that this field remain unchanged for all jurisdictions other than Queensland where it is proposed to make the field 'Required' to support the jurisdictional requirement.

There was general support for the proposal to make Feeder Class a required field for the Queensland jurisdiction.

Feedback from Energy Queensland - Ergon and Energex networks indicated that the field is only required in the Ergon network area.

5.7.2 AEMO's assessment

AEMO agrees with majority participant feedback to make the Feeder Class field 'Required' in Queensland. To make the field 'Required' in certain network area/s in Queensland, AEMO intends to make the field 'Required in the Queensland jurisdiction where relevant' in the Procedures.

5.7.3 AEMO's conclusion

AEMO will make the Feeder Class field 'Required' for Queensland jurisdiction and 'Optional' for all other jurisdictions in NEM and include 'Required in the Queensland jurisdiction where relevant' in the Procedures.

5.8 Transmission Node Identifier2

5.8.1 Issue summary and submissions

MSATS contains a TNI Code associated with each NMI. This code is to identify a virtual transmission node or transmission network connection point that the NMI is associated with. In addition to the TNI Code, AEMO proposes to include a new field to support the requirement to provide data for Global Settlement which requires LNSPs to register all cross-boundary connection points for unaccounted-for energy (UFE) calculation. These cross-boundary connection points need to store a different TNI value for each adjacent distribution network. To enable this, AEMO proposes to introduce TransmissionNodeIdentifier2 (TNI2) which AEMO will populate in MSATS on behalf of participants. It is proposed that this field be introduced effective 1 July 2021 to enable the commencement of UFE calculations across the NEM. AEMO notes the timing for 5MS/GS effective dates is subject to a Rule Change proposal and will update the effective date for this field, if required, following completion of the Rule Change.

There was general support for the proposal to introduce Transmission Node Identifier2.

5.8.2 AEMO's assessment

AEMO agrees with majority participant feedback to introduce Transmission Node Identifier2 field to provide data for Global Settlement in MSATS.

5.8.3 AEMO's conclusion

AEMO will introduce the Transmission Node Identifier2 field in MSATS and will populate the field on behalf of Participants for existing NMIs and for any new NMIs in the future.

5.9 NER Schedule 7.1 Rule Change

5.9.1 Issue summary and submissions

Schedule 7.1.2 (S7.1.2) of the NER prescribes the minimum contents of the data fields in MSATS. This clause is highly granular with respect to the information that must be included in the metering register. It prescribes information that AEMO's considers to be outdated or otherwise not relevant to industry or AEMO. Industry feedback at pre-consultation workshops indicated similar views held by Participants. The "Fields to be removed" in Section 5.2 of the Issues Paper, highlighted fields in MSATS that are no longer suitable for market processes but are still described in the NER. Section 5.2 of the Issues Paper also listed fields that have never been implemented in the market but are described by S7.1.2.

AEMO is seeking feedback on its proposal that the granularity of NER S7.1.2 be reduced by amending it to be a description of the broad information categories that must be included in the metering register at minimum, rather than a full specification of the minimum data fields needed. To complement this, AEMO

proposes that a clause is included at the beginning of the CATS Procedures listing the fields included in MSATS in order to provide at a procedural level the same specificity that is provided by NER S7.1.2.

The CATS Procedures prescribe the information that must be contained in MSATS and as such almost replicates the contents of NER S7.1.2 requirements for the metering register. Importantly, MSATS Procedures are a NER requirement (NER 7.16.2) and procedures are binding on both AEMO and participants. Any changes to the MSATS Procedures (including data fields) must be consulted on in line with the Rules consultation procedures outlined in Rule 8.9 of the NER.

Under Schedule 7.1 AEMO and industry must seek a rule change to repurpose or remove fields that are no longer relevant due to shifting market needs or technological change. For instance, the Password field has been identified as no longer relevant for many modern meters, whose passwords can shift as frequently as once every 30 minutes. Under AEMO's proposal (in future) participants would be able to request a procedure change to repurpose this field to capture other information relevant to industry without needing to propose a Rule change or making schema changes to MSATS. This flexibility does not exist whilst Schedule 7.1 explicitly specifies that a Password field must be provided. The proposed amendment to Schedule 7.1 would therefore grant industry and AEMO flexibility in determining the metering installation information necessary to fulfil the requirements of the NER.

More broadly, if Schedule 7.1 remained unchanged and industry expressed a preference for implementing the metering register in a new platform at some point in the future, AEMO and industry would need to build new fields that AEMO's analysis shows that neither AEMO nor industry thought would provide benefit.

If industry expresses broad support for moving the granular contents of the description of the metering register from the NER into AEMO's procedures, AEMO will request a rule change to the AEMC to amend Chapter 7 as described below.

There are three fields listed in Schedule 7.1 but are not present in MSATS. These are listed below in the table below.

Field	NER Subparagraph
Loss compensation calculation details	S7.1.2(a)(2)
Data register coding details	S7.1.2(b)(10)
'Write' password (to be contained in a hidden or protected field)	S7.1.2(c)(6)

The referencing of these fields in the NER and the absence of them from MSATS creates a discrepancy between the two. To address this discrepancy AEMO must either add the fields to the procedures or remove reference to them from the NER (by rule change). AEMO does not consider that the addition of these fields would add value for the market, and it is not possible to include a protected 'write' password field in MSATS. In the issues paper, AEMO recommended against this field's addition to MSATS.

There was general agreement between AEMO and participants for the rule change proposal to amend NER Schedule 7.1.

Participant feedback indicated that they do not consider any benefit in adding the following fields in MSATS:

- Loss compensation calculation details.
- Data register coding details.
- 'Write' password (to be contained in a hidden or protected field).

5.9.2 AEMO's assessment

AEMO agrees with majority participant feedback that Schedule 7.1 of the NER should become a description of what must be in MSATS at a minimum, whilst the full details of what must be included in MSATS will be included in the MSATS Procedures. This has the future benefit of enabling future changes to be achieved via a procedure consultation rather than a full Rule change. This will maintain protections for and obligations on the market while offering it greater efficiency when implementing changes to MSATS.

5.9.3 AEMO's conclusion

AEMO will propose the reference to the following fields be removed from the NER:

- Loss compensation calculation details.
- Data register coding details.
- 'Write' password (to be contained in a hidden or protected field).

This may be requested as part of the Schedule 7.1 Rule change proposal, or in addition to it.

5.10 Summary of Issues with General Agreement

Change Type	Information Category	Field Name	AEMO's Conclusion
To Amend	General Metering Installation Information	Last Test Date	Field definition to be clarified to refer to testing only and the field be made 'Required'. Data quality to be maintained by validating it according to date format.
To Amend	General Metering Installation Information	Meter Test Result Accuracy	Field to be made 'Required' and renamed from. 'Meter Test Result Accuracy' to 'Meter Test Result'. The field will be enumerated to indicate Pass or Fail.
To Amend	General Metering Installation Information	Meter Manufacturer	Field to be made 'Mandatory' with an itemised list of regular compulsory updates.
To Amend	General Metering Installation Information	Meter Model	Field to be made 'Mandatory' with an itemised list of regular compulsory updates.
To Amend	General Metering Installation Information	Meter Read Type Code	Field made 'Mandatory' and fourth character to identify whether meter capable of reading at five-minute granularity.
To Amend	General Metering Installation Information	Meter Suffix	No change, AEMO notes that this field has always been 'Mandatory' and no change is required here.
To Amend	General Metering Installation Information	Meter Use	Field to be made 'Required' with an enumerated list of values
To Remove	General Metering Installation Information	Asset Management Plan	Field to be removed
To Remove	General Metering Installation Information	Calibration Tables	Field to be removed
To Remove	General Metering Installation Information	Meter Constant	Field to be removed

Change Type	Information Category	Field Name	AEMO's Conclusion
To Remove	General Metering Installation Information	Meter Point	Field to be removed
To Remove	General Metering Installation Information	Meter Program	Field to be removed
To Remove	General Metering Installation Information	Meter Route	Field to be removed
To Remove	General Metering Installation Information	Meter Test & Calibration Program	Field to be removed
To Remove	General Metering Installation Information	Meter Test Result Notes	Field to be removed
To Remove	General Metering Installation Information	Next Test Date	Field to be removed
To Remove	General Metering Installation Information	Test Performed By	Field to be removed
Proposed Field	General Metering Installation Information	Disconnection Method	Field not to be added
Proposed Field	General Metering Installation Information	Meter Commission Date	Field not to be added
Proposed Field	General Metering Installation Information	Meter Locks	Field not to be added
Proposed Field	General Metering Installation Information	Minimum interval length	Field not to be added
Proposed Field	General Metering Installation Information	Meter Family Failure	Field not to be added
Proposed Field	General Metering Installation Information	Meter Test Report	Field not to be added
Proposed Field	General Metering Installation Information	Plug-in Meter Flag	Field not to be added
To Amend	Register Level Information	Controlled Load	Make field with enumerated list
To Amend	Register Level Information	Time of Day	Make field with enumerated list
To Remove	Register Level Information	Demand 1	Field to be removed
To Remove	Register Level Information	Demand 2	Field to be removed
To Remove	Metering Installation Location Information	Additional Site Information	Field to be removed and contents moved to the existing field Meter Location
To Amend	Metering Installation Location Information	Meter Location	Increase field size to accommodate data from Additional Site Information
To Amend	Meter Read Estimation Information	Next Scheduled Read Date	Modify field from 'Optional' to 'Required' for all manually read meters
To Remove	Meter Read Estimation Information	Data Validations	Field to be removed
To Remove	Meter Read Estimation Information	Estimation Instructions	Field to be removed
To Remove	Meter Read Estimation Information	Measurement Type	Field to be removed

Change Type	Information Category	Field Name	AEMO's Conclusion
To Remove	Meter Communications Information	Communications Equipment Type	Field to be removed
To Remove	Meter Communications Information	Communication Protocol	Field to be removed
To Remove	Meter Communications Information	Data Conversion	Field to be removed
To Remove	Meter Communications Information	Password	Field to be removed
To Remove	Meter Communications Information	Remote Phone Number	Field to be removed
To Remove	Meter Communications Information	User Access Rights	Field to be removed
To Remove	Address Structure	Unstructured Address	Field to be removed
Proposed Field	Address Structure	G-NAF PID	Field to be added
To Amend	Feeder Class	Feeder Class	Field to be made 'Required' for Queensland
Proposed Field	Transmission Node Identifier 2	Transmission Node Identifier 2	Field to be added
Propose To Remove	NER Schedule 7.1	Loss compensation calculation details	Field to be proposed to be removed from Schedule 7.1.2
Propose To Remove	NER Schedule 7.1	Data register coding details	Field to be proposed to be removed from Schedule 7.1.2
Propose To Remove	NER Schedule 7.1	Write' password (to be contained in a hidden or protected field)	Field to be proposed to be removed from Schedule 7.1.2

6. OTHER MATTERS

6.1 Consumer Data Right (CDR)

The CDR is a competition and consumer reform, led by the ACCC, which will allow consumers to require a company such as their energy retailer to share the customers data with an accredited service provider such as a comparison site to get more tailored, competitive services. Consumers will need to consent and authorise their data to be shared under the CDR. The ability to securely share energy data with trusted parties will promote competition between energy service providers, leading to better prices and more innovation of products and services[5].

In order to facilitate this initiative, the ACCC has submitted a request for the MSATS Data Review to include two pieces of information to identify when a customer change has occurred for a NMI.

The ACCC's request states:

'A key tenet of the CDR is secure sharing of consumer data – that is, that the correct data relating to an authenticated consumer is shared with an accredited third party, in line with the consumer's consent. We consider a data field indicating when a NMI has changed customer (i.e. a change in account holder field) will be critically important in ensuring that data sharing within the CDR regime operates in a secure and efficient manner.

Currently, AEMO does not capture information about when a NMI changes hands. All CDR authentication models for energy currently being considered will require some retailer involvement. However, without information about when a NMI has changed customer, additional retailer involvement (from the consumer's current retailer and potentially past retailer or retailers) will be required to determine that the customer making the data sharing request was, is and continues to be linked to the NMI for the time period relating to the data sharing request. The purpose of this check is to avoid inadvertent sharing of data that does not relate to a customer currently linked to the NMI (for example, data relating to a previous occupant of a premises).

A flag indicating when a NMI has changed customer would alleviate the need for further involvement of the customer's current retailer (for ongoing data sharing) or past retailer or retailers in this aspect of the authentication model. While relevant to one-off data sharing requests, this is particularly important where there is an ongoing data sharing arrangement or a request for historical data sets where AEMO is the data holder.

We note that, for the purposes of defining this field, further analysis is required to define what a 'change in customer' means. Ideally, we would prefer the definition to be aligned to the definition of who is eligible to make CDR requests, which, while still to be settled in the designation instrument and CDR rules, is likely to be the electricity account holder.'

To support the ACCC's request, AEMO proposes to include two fields:

- Change of Account Holder
- Change of Account Holder Effective Date

and place an obligation on FRMPs to provide this on the day they are notified of a change of account holder.

However, the ACCC notes that further analysis is required, to define the meaning of a "change in customer", in the CDR context. AEMO understands that the ACCC is due to undertake the next formal steps in its process in respect of the CDR in energy, at a time understood to be just prior to AEMO's publication of this Draft Determination.

[5] Source: https://www.accc.gov.au/focus-areas/consumer-data-right-cdr/energy-cdr

In addition, AEMO notes that a number of complexities would need to be resolved to achieve the envisaged objectives, including in circumstances, for example, of three tenants in one property over a 12-month period.

AEMO's Proposal:

Accordingly, AEMO proposes that this definition and resolution work be coordinated, as the next steps concerning the potential future introduction of:

- New fields of "Change in Account Holder" and "Change in Account Holder Effective Date" to be added to standing data to support CDR
- New obligation on FRMPs to provide this data on the day they are advised of a change in account holder

Questions:

22. Do you agree with the proposed new fields?
23. What types of scenarios – including specific examples – could be envisaged which would raise complexities whose resolution would be required in order to achieve the data sharing objectives?
24. What sorts of consequences – including potential unintended consequences – may need to be considered in respect of these fields?
25. Do you agree with the timeframe for updating the data in these fields?
26. Are there other suggestions to help meet the ACCC's objective?

6.2 Network Tariff Code (NTC)

In its submission, Endeavour Energy said that they believe that the LNSP should be responsible for populating Network Tariff Code field.

During the Power of Choice Procedure Changes (Package 1) consultation for changes to implement the National Electricity Amendment (Expanding competition in metering and related services) Rule 2015 No. 12, AEMO determined the Network Tariff Code field will be mandatory for completion by Metering Providers (MPs). AEMO considered (at that time) that parties are appropriately incentivised to ensure that the Network Tariff Code is updated correctly. It was assumed that contracts would be in place that linked the distributor to the MP, at least indirectly via the FRMP and MC, if not more directly in some cases. AEMO also felt that it was reasonable to consider that information on, and requirements for, the updating of the Network Tariff Code would have been considered in those agreements.

While information from MSATS may be made available to the MP regarding an existing NTC at a NMI, the MP should only use this code if it remains consistent with the changes undertaken at the metering installation. AEMO does not consider it either reasonable or practical for the LNSP to continue to maintain this field as a result of changes performed by contestable MPs, however the LNSP should still be able to make corrections if errors occur, or alternatively raise errors through their contractual framework for resolution by the MP.

AEMO has also informally been advised of issues around the accuracy of population of the Network Tariff Code field. Endeavour Energy stated that this field should be the responsibility of the LNSP given the purpose of this field and has suggested two options:

1. One option is to allow an MPB to create a meter register record without a Network Tariff Code. The LNSP will then be required to populate the Network Tariff Code. Any further changes to the meter register record by the MPB should always result in the Network Tariff Code being carried to the updated meter register record, that is the MPB cannot change or blank out the Network Tariff Code. The LNSP should always have the right to change the Network Tariff Code.
2. Another option is to remove the Network Tariff Code field from the meter register record and create two new fields in the NMI master record called 'Network Service' and 'Network Tariff Code'. The Network Service field describes the services offered by the network and should be an enumerated field with values like 'general supply' and 'off peak', and the Network Tariff Code is used to assign the network tariff code to the network service.

AEMO notes Option 2 assumes there is only one Network Tariff for all meters on the metering installation, rather than where it is possible that there could be separate tariffs at meter level. The network tariff structures are determined by distributors and approved by the AER. AEMO must provide the flexibility for network tariffs at meter level.

Based on Endeavour Energy's submission and informal discussions AEMO would like to understand from participants if the population of Network Tarff Code is an ongoing significant issue to be addressed.

AEMO notes the following options will be explored if a significant issue exists:

- Compliance options for MPB performance for incorrectly populating NTC
- Retailer obligations to inform the MC and MPB of the appropriate NTC
- Network obligations to correct an incorrectly populated NTC within three business days; and or
- If networks are provided the obligation to populate NTC then they will have only three business days to correctly populate this after the metering installation details are provided by the MPB, this will ensure there are not additional delays to the commissioning of the meter in MSATS.

Questions:

27. Given this change commenced on 1 December 2017, to what extent are you seeing issues with the population of the NTC?
28. If AEMO was to review the obligations on NTC, out of the options proposed, which do you see being the most effective to address the current issues experienced. Please provide reasons as to why you think the options you've chosen would address the issue.
    a) Compliance options for MPB performance for incorrectly populating NTC
    b) Retailer obligations to inform the MC and MPB of the appropriate NTC
    c) Network obligations to correct an incorrectly populated NTC within three business days; and or
    d) If networks are provided the obligation to populate NTC then they will have only three business days to correctly populate this after the metering installation details are provided by the MPB, this will ensure there are not additional delays to the commissioning of the meter in MSATS.
29. Do you have any comments on the options provided by Endeavour Energy?

7. DRAFT DETERMINATION

Having considered the matters raised in submissions and at meetings/forums, AEMO's draft determination is to amend various retail electricity procedures in the form published with this Draft Report, in accordance with Chapter 7 of the NER. There are three published draft retail electricity procedure and guideline documents:

- MSATS Procedures: CATS vMSDR Draft Determination Change Marked;
- MSATS Procedures: CATS vMSDR Draft Determination Clean;
- MSATS Procedures: WIGS vMSDR Draft Determination Change Marked;
- MSATS Procedures: WIGS vMSDR Draft Determination Clean;
- Standing Data for MSATS guideline vMSDR change marked; and
- Standing Data for MSATS guideline vMSDR clean.

The relevant timing of next steps in the MSATS Standing Data Review will be informed, in part, by the complexity of the issues arising, the interdependencies among various rule and procedural changes, as well as the priority levels associated with related initiatives, including Five Minute Settlement and Global Settlement and the Consumer Data Right.

APPENDIX A - GLOSSARY

Term or acronym	Meaning
5MS	Five Minute Settlement
ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
API	Application Programming Interface
BULK	*Connection point* where a *transmission network* connects to a *distribution network* - also termed 'Bulk Supply Point'
CATS	Consumer Administration and Transfer Solution, a part of MSATS
CDR	Consumer Data Right
COAG	Council of Australian Governments
CR	Change Request
CRC	Change Reason Code
CT	Current Transformer
DI	Data Interchange
DNSP	Distribution Network Service Provider
DP	Deposited Plan
DPID	Delivery Point Identifier
DWHOLSAL	*Distribution network connection point* where energy is directly purchased from the *spot market* by a *Market Customer*
Enumerated	Enumeration limits a field to a specific set of values. If a value isn't listed in the schema, it wouldn't be valid.
ESC	Essential Services Commission
FRMP	Financially Responsible Market Participant
G-NAF	Geocoded National Address File
GPS	Global Positioning System
GS	Global Settlement
GSL	Guaranteed Service Level
HLD	High Level Design
INTERCON	*Interconnector*
LNSP	Local Network Service Provider
'Mandatory'	In relation to a field, Transfer, Validation or processing cannot proceed without this data.
MC	Metering Coordinator
MDFF	Meter Data File Format
MDP	Metering Data Provider
MP	Meter Provider
MPB	Meter Provider (Category B)
MRAM	*small customer metering installation* – Type 4A

Term or acronym	Meaning
MRIM	Manually Read Interval Meter – Type 5
MSATS	Market Settlements and Transfer Solution
NMI	National Metering Identifier
NECF	National Energy Customer Framework
NEM	National Electricity Market
NER	National Electricity Rules
NERR	National Energy Retail Rules
NSRD	Next Scheduled Read Date
NTC	Network Tariff Code
Optional	In relation to fields, this data does not have to be provided but will be accepted if delivered.
PID	Persistent Identifier
'Required'	In relation to fields, this data must be provided if this information is available.
REPI	Retail Electricity Pricing Inquiry
TNI2	TNI Code assigned, by AEMO, to a *distribution network* into which energy normally flows through a *connection point* between adjacent *distribution networks* that has a single *NMI*.
UFE	Unaccounted for Energy
VICAMI	a relevant *metering installation* as defined in clause 9.9C of the NER.
VT	Voltage Transformer
WIGS	Wholesale, Interconnector, Generator and Sample NMIs

APPENDIX B - SUMMARY OF SUBMISSIONS AND AEMO RESPONSES

Questions raised in the MSATS Standing Data Review Issues Paper

Metering Installation Information

Table 1 General Metering Installation Information

No.	Consulted person	Comment	AEMO response
Q1 Do you support the addition of the Meter Malfunction Exemption Number field to MSATS? If not, why not?			
1.	AGL	AGL strongly supports this change as it will make this exemption process more efficient and provide better information to all participants, including incoming retailers. With this change – AGL strongly suggests that the malfunction number be appropriately identified (eg by prefix) to separate out family failure exemptions versus malfunction exemptions. This would allow better understanding and reporting of fault types by al participants. Alternatively, the proposed Meter Family Failure field could be repurposed to a Fault Type field with an enumerated category of fault types and populated by AEMO together with the exemption number.	AEMO notes the respondent's support for the proposed change. AEMO is considering the automation of the exemption process including MSATS population. AEMO would add Meter Malfunction Exemption Number field and Meter Malfunction Expiry Date field, and take the responsibility of populating/updating the fields but only if the exemption process is first automated. AEMO also notes that the meter malfunction exemption does not classify the exemption types, hence it is not possible to have prefix to separate the exemptions types. AEMO notes that exemptions are provided on the timeframe to perform a meter change.
2.	Alinta Energy	Alinta Energy strongly supports the addition of this field.	AEMO notes the respondent's support for the proposed change.
3.	Aurora Energy	Aurora Energy supports the additional field	AEMO notes the respondent's support for the proposed change.
4.	Ausgrid	Ausgrid supports the addition of the Meter Malfunction exemption number. However we would like to highlight a few points. The exemption number does not identify what is wrong with the metering installation (eg. CT/VT failure, Meter family failure), so any incoming participant would not know what they are going into if winning a site. This information could also be counter	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 1.

No.	Consulted person	Comment	AEMO response
		productive to the customer if they wish to switch providers and the provider does not want to take on a site with a malfunction. If the exemption number was supplied, we believe AEMO would be best placed to populate and maintain the field and the MC will have to apply for an exemption. Having the MC populate would be double handling and inefficient.	
5.	AusNet Services	AusNet Services supports the addition of the MeterMalfunctionExemptionNumber field provided the field is 'Required'.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 1.
6.	CitiPower Powercor	CitiPower Powercor supports this addition.	AEMO notes the respondent's support for the proposed change.
7.	Endeavour Energy	Yes, we support adding the Meter Malfunction Exemption Number. This will allow for better visibility of exemptions granted to meter malfunctions and if more information is required then this exemption number can be quoted in communication with the retailer and metering service providers.	AEMO notes the respondent's support for the proposed change.
8.	EnergyAustralia	EnergyAustralia supports the addition of the Meter Malfunction Exemption Number, as the information will be useful to Metering Coordinators and retailers when assessing the action plan for metering at the site.	AEMO notes the respondent's support for the proposed change.
9.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex have no objections, however, seek further clarity on how the MPB is expected to populate this field if they are not the current MPB for the site. Consideration should be given as to whether AEMO should be the responsible party to populate this field.	AEMO refers to the response in Table 1, Item 1.
10.	ERM Power	Yes – but believe it should be the market operators function to update	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 1.
11.	EvoEnergy	Support as it will help participants understand the life cycle status of a meter.	AEMO notes the respondent's support for the proposed change.
12.	Intellihub	Yes. Only if it is populated by AEMO and it does away with the need for the MC to advise all the relevant participants because they will receive an MSATS notification when this is field is updated.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 1.

No.	Consulted person	Comment	AEMO response
13.	Metering Dynamics	Yes. However, we seek clarification on how this field will be populated. For example, would AEMO populate it, based on approving as exemption, with the MP/MC required to maintain/update.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 1.
14.	Origin Energy	Origin supports the addition of this field in MSATS as it would assist MPB's with identifying which sites have exemptions. In addition, there is currently an obligation on MC's to notify participants of exemptions being in place on sites. This field along with the expiry date of the ERF will act as the notification to all participants for each site. The responsibility of updating this field should be on AEMO to add/remove the reference on approval/closure of the exemption.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 1.
15.	PLUS ES	PLUS ES supports the addition of the Meter Malfunction Exemption Number field to MSATS but the support is dependent on the solution/process being efficient. It would provide visibility to all participants responsible for that NMI, consequently removing the administrative resource effort between participants enquiring on the status of the malfunction rectification. i.e. simplify the current meter malfunction exemption procedures with respect to notifying affected participants. To drive further efficiency and remove the 'middle man', AEMO would be the best positioned party to upload the information as they are the party which provide the exemption. The inclusion of this field would need to be coupled with the development/updating of procedures i.e. administering this field, updating exist procedures for redundant actions etc.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 1. AEMO agrees that relevant procedures and guidelines will need to be updated once the exemption process is automated and the new field is added to MSATS.
16.	Powerlink Queensland	Yes, to the NMI field, not to the meter itself. Exemptions on WIGS NMIs can be for the CTs and or VTs, not the meter itself, so having it on the NMI would cover the whole metering installation.	AEMO notes the respondent's support for the proposed change and agrees that the field will be added at the NMI level and not the metering level. This includes WIGS NMIs, the process will cover any NMI where any aspect of the metering installation has been provided an exemption on the rectification timeframe.
17.	Powermetric	Yes – but believe it should be the market operators function to update	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 1.
18.	Red Lumo	Red Energy and Lumo Energy (Red and Lumo) do not object to the addition of this field to MSATS.	AEMO notes the respondent's comment.

No.	Consulted person	Comment	AEMO response
19.	SA Power Networks	SA Power Networks have a neutral position on this item.	AEMO notes the respondent's comment.
20.	TasNetworks	Yes	AEMO notes the respondent's support for the proposed change.
21.	United Energy	United Energy supports this addition.	AEMO notes the respondent's support for the proposed change.
22.	Vector Metering	Yes, furthermore we support AEMO updating this field when they issue the Exemption to the MC. This is the most efficient way to 1) manage exemptions and 2) notify impacted participants of the existence of the malfunction and the exemption;	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 1.
Q2 Do you support the addition of the Meter Malfunction Exemption Expiry Date field to MSATS? If not, why not?			
23.	AGL	AGL strongly supports this change as it will make this exemption process more efficient and provide better information to all participants, including incoming retailers.	AEMO notes the respondent's support for the proposed change.
24.	Alinta Energy	Alinta Energy supports the addition of this field.	AEMO notes the respondent's support for the proposed change.
25.	Aurora Energy	Aurora Energy supports the additional field	AEMO notes the respondent's support for the proposed change.
26.	Ausgrid	As above.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 4.
27.	AusNet Services	AusNet Services supports the addition of the MeterMalfunctionExemptionExpiryDate field provided the field is 'Required'.	AEMO notes the respondent's support for the proposed change, and agrees that the proposed field should be made 'REQUIRED'
28.	CitiPower Powercor	CitiPower Powercor supports this addition.	AEMO notes the respondent's support for the proposed change.
29.	Endeavour Energy	Yes, we support adding the Meter Malfunction Exemption Expiry Date. This will allow for better visibility of when the meter malfunction is likely to be rectified.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
30.	EnergyAustralia	EnergyAustralia supports the addition of the Meter Malfunction Exemption Expiry Date, as the information will be useful to Metering Coordinators and retailers when assessing the action plan for metering at the site.	AEMO notes the respondent's support for the proposed change.
31.	Energy Queensland - Energex and Ergon Energy Network	No. AEMO should be considered as the responsible party to populate this field.	AEMO notes the respondent's comment. AEMO is considering the automation of the exemption process including MSATS population. AEMO agrees to add Meter Malfunction Exemption Number field and Meter Malfunction Expiry Date field and to take the responsibility of populating/updating the fields once the exemption process is automated.
32.	ERM Power	Yes – but believe it should be the market operators function to update	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 31.
33.	EvoEnergy	Not supported, as this date will either change as a new exemption is allocated due to volume of meters requiring replacement, or the meter is removed.	AEMO notes the respondent's comment. AEMO intends to provide the latest data for this field, this would mean the field would either be populated with: • a date in the future for an active exemption; • a date in the past for an expired exemption but the issue still remains; or no date where a metering installation malfunction has been fixed/rectified, the exemption will finish and then it will be removed/cleared.
34.	Intellihub	Yes. Only if it is populated by AEMO and it does away with the need for the MC to advise all the relevant participants because they will receive an MSATS notification when this is field is updated.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 31.
35.	Metering Dynamics	Yes. However, we seek clarification on how this field will be populated. For example, would AEMO populate it, based on approving as exemption, with the MP/MC required to maintain/update.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 31.

No.	Consulted person	Comment	AEMO response
		In addition, we seek clarity on how this field will be reported from MSATS and whether a report will be generated notifying relevant participants a number of days out from expiration.	This field will appear in NMI Discovery, at this stage other reporting requirements have not yet been identified for this new field. AEMO notes that MCs currently get reminders that exemptions are about to expire.
36.	Origin Energy	Origin supports the addition of this field in MSATS; however, seeks clarification from AEMO that when the exemption expires, will the information be removed? As mentioned in Question 1, the expectation is AEMO would update this information.	AEMO notes the respondent's support for the proposed change AEMO and refers to the response in Table 1, Items 31 and 33.
37.	PLUS ES	PLUS ES supports the addition of the Meter Malfunction Exemption Expiry Date field to MSATS but the support is dependent on the solution/process being efficient. It would provide visibility to all participants responsible for that NMI, consequently removing the administrative resource effort between participants enquiring on the status of the malfunction rectification. To drive further efficiency and remove the 'middle man', AEMO would be the best positioned party to upload the information as they are the party which provide the exemption. The inclusion of this field would need to be coupled with the development/updating of procedures i.e. administering this field, updating exist procedures for redundant actions etc.	AEMO notes the respondent's support for the proposed change AEMO and refers to the response in Table 1, Item 31. AEMO agrees that relevant procedures and guidelines will need to be updated once the exemption process is automated and the new field is added to MSATS.
38.	Powerlink Queensland	Yes, to the NMI field, not to the meter itself. Exemptions on WIGS NMIs can be for the CTs and or VTs, not the meter itself, so having it on the NMI would cover the whole metering installation.	AEMO notes the respondent's support for the proposed change and agrees that the field will be added at the NMI level and not the metering level. This includes WIGS NMIs, the process will cover any NMI where any aspect of the metering installation has been provided an exemption on the rectification timeframe.
39.	Powermetric	Yes – but believe it should be the market operators function to update	AEMO notes the respondent's support for the proposed change AEMO and refers to the response in Table 1, Item 31.
40.	Red Lumo	Red and Lumo do not object to the addition of this field to MSATS	AEMO notes the respondent's comment.
41.	SA Power Networks	SA Power Networks have a neutral position on this item.	AEMO notes the respondent's comment.

No.	Consulted person	Comment	AEMO response
42.	TasNetworks	Yes	AEMO notes the respondent's support for the proposed change.
43.	United Energy	United Energy supports this addition.	AEMO notes the respondent's support for the proposed change.
44.	Vector Metering	Yes, as above, Providing the date of expiry will provide all impacted participants a latest date for when the malfunction will be resolved by. MSATS should also be able to provide a history of the exemption extensions to give a complete picture of the duration taken to resolve. It should also be related to the individual meter so that when the meter is replaced the exemption is automatically closed.	AEMO refers to the response in Table 1, Items 31, 33 and 38.
Q3 If you do not support the addition of the suggested fields, do you support the addition of the Meter Family Failure field?			
45.	AGL	See above – the malfunction exemption number without an appropriate identified is of far less value to any other participant except the MC and AEMO. If the exemption number is to remain a sequenced number then AGL strongly suggest that the Meter Family Failure field be repurposed to an enumerated Meter Fault field which would include family failure, meter failure, CT/VT failure etc. As discussed above, the exemption number on its own only provides the efficiency of not having the MC communicate the number to multiple participants. Improved information relating to the type of fault would assist both AEMO and participants in managing the various groups of faulted meters.	AEMO notes the respondent's comment and refers to the responses in Table 1, Items 1 and 23. AEMO is not able to identify all Meter Family Failure instances as not all Family Failures are covered by exemptions. AEMO intends to provide Meter Malfunction Exemption Number and Expiry Date as it gives reliable and accurate and this information is available to AEMO and supported by current procedures and rules. Hence, AEMO will not be adding Meter Family Failure Field.
46.	Alinta Energy	NA	AEMO notes the respondent's comment.
47.	Aurora Energy	Aurora Energy supports AEMO's comments	AEMO notes the respondent's support for the proposed change.
48.	Ausgrid	Ausgrid assumes this field is for incoming parties, as the current FRMP would already be notified via a MFIN that it is a MFF. Ausgrid assumes the LNSP would be responsible for populating this field. Who will be responsible for updating (removing) the field once the MFF meter has been replaced? Ausgrid believe it should be the MPB who replaced the metering.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
49.	AusNet Services	No comment.	

No.	Consulted person	Comment	AEMO response
50.	CitiPower Powercor	CitiPower Powercor supports the addition of the Meter Family Failure Field and allow it to be used for flagging meters that are part of a family that has failed sample family testing, the same field should be used for Current Transformers that are part of a family that has failed sample family testing. Also see our answers to (i) and (l) further below.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
51.	Endeavour Energy	Yes, we support the addition of a field that indicates a meter family failure. However, we suggest that this field be expanded to cover all metering installation malfunction scenarios – see our comments below suggesting a new field called Metering Installation Malfunction.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
52.	Energy Queensland - Energex and Ergon Energy Network	No comments.	
53.	EnergyAustralia	N/A	AEMO notes the respondent's comment.
54.	ERM Power	Yes The field is useful for the retailers to identify meter churn obligations and site impact on transfers under the current procedure. Usefulness decreases under the AEMI's switching rule changes.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
55.	EvoEnergy	Not supported, as you don't need multiple fields to identify a meter has a problem.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
56.	Intellihub	Yes. Only if it is populated by AEMO and it does away with the need for the MC to advise all the relevant participants because they will receive an MSATS notification when this is field is updated.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
57.	Metering Dynamics	No comments.	
58.	Origin Energy	Origin supports the addition of the Meter Family Failure field as it would assist an MPB in identifying difficult to access sites and will also provide vital information during a meter malfunction.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.

No.	Consulted person	Comment	AEMO response
59.	PLUS ES	Whilst PLUS ES conditionally supports the suggested fields we also support the requirement to identify a meter categorised as Meter Family Failure. If this field is not available and the exemption would no longer be available due to a prolonged barrier i.e. customer consent etc, it would be onerous to manage the rectification of a MFF, especially in instances that participant role were to change. i.e. an incoming FRMP, new MC, new MPB	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
60.	Powerlink Queensland	No, no applicable for WIGS NMIs	AEMO notes the respondent's comment.
61.	Powermetric	No	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
62.	Red Lumo	Red and Lumo support the addition of this field, as this would assist with fault finding and metering prioritisation, as well as reduce transfer restrictions.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
63.	TasNetworks	TasNetworks believes there is more value with populating the exemption number and expiry date.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
64.	United Energy	United Energy supports the addition of the Meter Family Failure Field and allow it to be used for flagging meters that are part of a family that has failed sample family testing, the same field should be used for Current Transformers that are part of a family that has failed sample family testing. Also see our answers to (i) and (l) further below.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
65.	Vector Metering	We support the above fields but if these do not progress then we believe a malfunction flag with appropriate code is more useful than just a Family failure flag. This malfunction flag should have at least the following values; e.g. Adhoc malfunction, Family failure. This would allow the monitoring of performance of resolving each class of malfunction.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
Q4 If you do not support the amendments proposed by AEMO, which ones and why?			
66.	AGL	See Appendices for details of specific comments. However, AGL does not support the proposed concatenating of meter test result and last test date into a coded field. This new field would be hard to validate and would require logic to pull apart before any useful information could be obtained. AGL strongly suggest that the Last Test Date be retained as a date field (and hence easily queried and validated) and Meter Test Result Accuracy be retained as an	AEMO agrees to leave 'Last Test Date' and 'Meter Test Result Accuracy' as separate fields. AEMO intend to change the 'Meter Test Result Accuracy' field name to 'Meter Test Result' and the field will be enumerated to indicate Pass or Fail.

No.	Consulted person	Comment	AEMO response
		enumerated field (eg pass / fail) to make data queries simple and agent understanding clear.	
67.	Alinta Energy	NA	AEMO notes the respondent's comment.
68.	Aurora Energy	N/A	AEMO notes the respondent's comment.
69.	Ausgrid	Ausgrid supports the fields AEMO are proposing to amend. If Meter Model and Meter Manufactures will be an enumerated list, Ausgrid would require "Unknown" to be included in the enumerated list. Meter Test result accuracy field/test date, what is to be populated where there is no last test date? Last test date is included in the document has been identified as being amended (to mandatory) and also removed.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 66. AEMO agrees that "Unknown" should be added to the enumerated lists of Meter Model and Meter Manufacturer fields.
70.	AusNet Services	AusNet Services does not support the following amendments proposed by AEMO. - The field 'LastTestDate' amended from being 'Optional' to 'Required'. There is no defined benefit in providing this information in Victoria where the MPB = MC = LNSP. All AusNet Services VICAMI meters meet the minimum Victorian specifications and cannot be re-purposed to act as a type 4 contestable meter under requirements that currently apply in other jurisdictions. Therefore, there is no benefit or value in making this field "required" in Victoria. - The field 'Use' amended description and corresponding enumerated list. There is no defined benefit in providing this information in Victoria where the MPB = MC = LNSP.	AEMO notes the respondent's comment and notes that a LNSP in Victoria is the MPB/MC for VICAMI meters. However, the change to "Required" does not only apply to VICAMI or Type 4 metering. This is a change to all metering levels and includes meters in Victoria that are subject to contestability. This change is applicable across the NEM and it is not possible to apply a Victorian specific amendment.
71.	CitiPower Powercor	N/A	
72.	Endeavour Energy	We believe that if the Meter Test Result Accuracy field was to be adopted then the Last Test Date field is not required because it is redundant.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 66.
73.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex have no objections. However, we seek clarity on whether legacy metering is required to be updated. Note also, that the "Last Test Date is shown as "mandatory" and also to be "Removed".	AEMO notes the respondent's comment and refers to the response in Table 1, Item 66.

No.	Consulted person	Comment	AEMO response
74.	EnergyAustralia	N/A	
75.	EvoEnergy	Meter Suffix – Interval meters for some time have been making this field mandatory and populating with Ex, Qx etc., not Nx as per this document, but as per Standing Data for MSATS v4.4 sections 12 and 14, to link the meter RegisterID to a Network Tariff, to a Data Stream Suffix and Time Of Day. I am also unable to find when this was changed or consulted on. Please provide the information for this?	AEMO notes these changes were part of the 5MS Metering Package 3. Data transition considerations are being formulated as part of the 5MS program particularly through the 5MS/GS Metering Transition Plan.
76.	Intellihub	Yes. All of them	AEMO notes the respondent's support for the proposed change.
77.	Metering Dynamics	We note that the LastTestDate field has been flagged for both amendment and removal. Metering Dynamics supports the removal of this field.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 66.
78.	Origin Energy	While Origin supports the proposed amendments, there is concern that these fields could risk bad behaviour in the market and negatively impact customers as participants may actively avoid sites where there is a family failure flag.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 45.
79.	PLUS ES	PLUS ES does not oppose the provisioning of this information (Last Test Date and Meter Test Result Accuracy) into MSATS, if the industry can see value, but question their effectiveness. PLUS ES also suggests separate fields for each value would be preferable than the combined from an efficiency perspective. The provisioning of these 2 fields is simplified and doesn't give the full picture of the circumstances, such as which components pass and fail, by how much, for how long and what adjustments to data might be required. Furthermore, this information doesn't indicate that the meter or metering installation is part of a sample testing scheme or has been individually tested. Therefore, for other market participants, this information would be misleading and incomplete.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 66.
80.	Powerlink Queensland	Failure can take place in any part of the metering installation which includes the meter, CTs, VTs or the wiring.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 38.
81.	Powermetric	We still feel that the meter LastTestDate provides little value without knowing what the MC's statery is and the MP's maintenance plan is. Therefgore this is of no value to	AEMO notes the respondent's comment and refers to the response in Table 1, Item 66.

No.	Consulted person	Comment	AEMO response
		anyone but the current MC or MP who would have this same info in their asset data bases.	
82.	Red Lumo	No comment at this time	
83.	TasNetworks	N/A	
84.	United Energy	N/A	
85.	Vector Metering	We do not support the addition of a Meter Test Result Accuracy field, because any meter that fails accuracy will be replaced at the time of the test or shortly after because it is non-compliant. By definition if the Meter is still in MSATS then it has passed the test;	AEMO notes the respondent's comment, refers to the changes discussed in the response in Table 1, Item 66 and notes in the majority of cases of meters will be replaced at time of test failure but there are exceptions due to unforeseen issues that will be captured in MSATS as failed.
Q5 What enumerations can be made for the Meter Use codes that would be useful for the market?			
86.	AGL	Clear identification of meter use, together with an enumerated list, will assist the broader management of energy meter deployment and management.	As per respondents suggestions, AEMO proposes the following enumerated list of values for Meter Use: • Average • Prepaid • Revenue • Check • Statistical • Information • Unknown • Sample • Logical • Solar/PV
87.	Alinta Energy	The proposes codes with the addition of a Private/Non Billing/customer enumeration would be useful for the market.	AEMO refers to the response in Table 1, Item 86.
88.	Aurora Energy	• Disconnection Method • Meter Commission Date • Meter Family Failure (only if exemption no & expiry are not used)	AEMO refers to the response in Table 1, Item 86.

No.	Consulted person	Comment	AEMO response
89.	Ausgrid	Ausgrid would support the following enumeration: - Revenue - Check - Statistical - Information	AEMO refers to the response in Table 1, Item 86.
90.	AusNet Services	No comment.	
91.	CitiPower Powercor	CitiPower Powercor does not hold a position on this matter.	AEMO notes the respondent's comment.
92.	Endeavour Energy	We agree with the suggested enumeration values define in table 30. However, we disagree that these values should be captured in this document. For the purpose of the consultation, we suggest that the values be captured in the consultation paper and when the solution is implemented we suggest that the values be captured and maintained in MSATS. See our comments on 'enumerated values to be easily modified' below for more detail.	AEMO notes the respondent's comment and refers to the response in Table 1, Item 86 and Table 14, Item 11.
93.	Energy Queensland - Energex and Ergon Energy Network	N/A	
94.	EnergyAustralia	Sample, Solar/PV	AEMO refers to the response in Table 1, Item 86.
95.	EvoEnergy	A = AVERAGE P = PREPAID	AEMO notes the respondent's comment and refers to the response in Table 1, Item 86.
96.	Intellihub	N/A	
97.	Metering Dynamics	We suggest, Revenue, Check, Logical, Sample enumerations.	AEMO refers to the response in Table 1, Item 86.
98.	Origin Energy	Origin's view is that identifying sites that are not simple 'revenue' sites such as Logical meters would be beneficial for the market.	AEMO refers to the response in Table 1, Item 86.
99.	PLUS ES	PLUS ES proposes the following enumeration:	AEMO refers to the response in Table 1, Item 86.

No.	Consulted person	Comment	AEMO response
		- Revenue - Check - Statistical - Information	
100.	Powerlink Queensland	REVENUE, CHECK are the relevant enumerations for WIGS NMIs that we currently use.	AEMO refers to the response in Table 1, Item 86.
101.	Powermetric	Proposal is OK	AEMO notes the respondent's support for the proposed change.
102.	Red Lumo	No comment at this time	
103.	TasNetworks	TasNetworks does not believe that any further additions are required.	AEMO refers to the response in Table 1, Item 86.
104.	United Energy	United Energy does not hold a position on this matter.	AEMO notes the respondent's comment.
105.	Vector Metering	Vector only deals with physical metering so 'Revenue' is about the only use we could assign. Given that smart meters now have many capabilities and can provide data for many purposes e.g. customer billing, network management etc, is trying to allocate a single use prudent? We accept that physical metering may need to be separate to logical metering but suggest that this be better done via a separate meter type.	AEMO refers to the response in Table 1, Item 86.
Q6 There are several existing fields that AEMO proposes removing from MSATS Standing Data. Do you see any value in their retention for the market? If so, please outline it. - Meter Constant may be a relevant field for older equipment as it refers to intrinsic constraint of meter in Wh/pulse. Is there value to this field for the market and if so is there another field that the constant could be listed in?			
106.	AGL	AGL does not support the amendment of Meter Test Result Accuracy. The proposal was to make the Meter Test Result Accuracy a combined date / result field – which would be very hard to validate and hard to manage through queries to produce information. AGL proposes the Meter Test Result Accuracy field be retained with an enumerated outcome – eg pass/fail and the Last Test Date be retained for the date, which can be easily validated. The two fields can then be used to produce useful reporting for industry.	AEMO refers to the response in Table 1, Item 66. As per respondent feedback, AEMO intend to remove all listed fields suggested for removal except for Last Test Date, this field will be retained in its current state. AEMO also proposes to remove the Meter Constant field as respondent feedback suggests this field has no value and is no longer used for older equipment.

No.	Consulted person	Comment	AEMO response
		Meter Constant , AGL supports the removal of this field as it related to older style meter hardware which is no longer relevant.	
107.	Alinta Energy	Alinta Energy supports the removal of the MSATS fields. AdditionalSiteInformation – O - MPB AssetManagmentPlan – O – MPB CalibrationTables – O – MPB CommunicaionsEquipmentType – O – MPB CommunicationsProtocol – O – MPB DataConversion – O – MPB DataValidations – O – MPB EstimationInstruments – O – MPB Contant – O – MPB Point – O/M – MPB Program – O – MPB Route – O – MPB NextTestDate – O – MPB Password – O – MPB RemotePhoneNumber – O – MPB TestCalibrationProgam – O – MPB TestPerformedBy – O – MPB TestResultAccuracy – O – MPB TestReslutNotes – O – MPB TransformerLocation – O – MPB TransfromerType – O – MPB UserAccessRights – O – MPB DeliveryPointIdentifier – O – LNSP AddressLine – O – LNSP	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 106.
108.	Aurora Energy	Aurora Energy does not use the Meter constant and therefore does not see any value in it retention	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 106.

No.	Consulted person	Comment	AEMO response
109.	Ausgrid	Ausgrid agrees with the fields AEMO are proposing to remove. Ausgrid does not believe this field is required, metering energy constants are applied in MDP systems to determine metering data.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 106.
110.	AusNet Services	AusNet Services supports the removal of the following fields. - AdditionalSiteInformation - AssetManagementPlan - CalibrationTables - CommunicationEquipmentType - CommunicationsProtocol - DataConversion - DataValidations - EstimationInstructions - MeasurementType - Constant - Point - Program - Route - NextTestDate - Password - RemotePhoneNumber - TestCalibrationProgram - TestPerformedBy - TestResultAccuracy - TestResultNotes - TransformerLocation - TransformerRatio - TransformerType - UserAccessRights - DeliveryPointIdentifier	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 106.

No.	Consulted person	Comment	AEMO response
		- AddressLine - NetworkAdditionalInformation - Demand1 - Demand2 Meter Constant, AusNet Services does not see any value in retaining the Meter Constant field. The older equipment is no longer used for revenue metering, and inadvertent population of this field can only confuse billing and metering staff.	
111.	CitiPower Powercor	CitiPower Powercor agrees with the removal of these fields. Meter Constant, CitiPower Powercor does not hold a position on this matter.	AEMO notes the respondent's support for the proposed change. AEMO notes the respondent's comment in relation to Meter Constant.
112.	Endeavour Energy	We agree with the suggested fields to be removed. We do not believe that these fields provide value to any other party except for the metering service provider, therefore they are not required in MSATS - this includes the Meter Constant field.	AEMO notes the respondent's support for the proposed change.
113.	Energy Queensland - Energex and Ergon Energy Network	We see no value in retaining these fields.	AEMO notes the respondent's support for the proposed change.
114.	EnergyAustralia	• Asset Management Plan - Not required with proposed fields (MFN Exemption Number & MFN Expiry Date) • Calibration Tables – Not required • Last Test Date – Not required with proposed fields (MFN Exemption Number & MFN Expiry Date); however, better repurposed for inspections, that is becoming "Last Inspection Date" – helps retailers mitigate CT ratio errors • Meter Constant – Not required with proposed fields Transformer Information Field (CT/VT Ratio) • Meter Point – Not required • Meter Program – Not required • Meter Route – Not required for MSATS, this is information that DNSPs can maintain	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 106.

No.	Consulted person	Comment	AEMO response
		• Meter Test & Calibration Program – Not required with proposed fields (Meter Test Result Accuracy) • Meter Test Result Notes – not required with proposed fields (Meter Test Result Accuracy) • Next Test Date – would be useful for medium term deployment planning, unless LNSPs provide predictions for family failures • Test Performed By – not required with proposed fields (Meter Test Result Accuracy)	
115.	ERM Power	No	AEMO notes the respondent's support for the proposed change.
116.	EvoEnergy	No comment, so please remove. If there are still meters out there that require this, then retain, or better yet, replace those meters, so that this field can get removed.	AEMO notes the respondent's support for the proposed change.
117.	Intellihub	No	AEMO notes the respondent's support for the proposed change.
118.	Metering Dynamics	No. Metering Dynamics, sees no value for the market in the meter constant field.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 106.
119.	Origin Energy	No comment	AEMO notes the respondent's comment.
120.	PLUS ES	PLUS ES supports the removal of all fields as suggested by AEMO. Some care needs to be taken to ensure values in Meter Constant are reflected in the Register Multiplier field before the Meter Constant field is removed. For example, with some BASIC meters the Meter Constant may be 40, but the register value maybe 1. Removing Meter Constant in these instances will give incorrect consumption values. Aspects such as the internal Wh/Pulse of the meter is just a characteristic of the meter make/model, therefore it shouldn't be in MSATS as a separate field.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 106.
121.	Powerlink Queensland	No, we see no value in retaining these as we currently don't use them.	AEMO notes the respondent's support for the proposed change.
122.	Powermetric	No	AEMO notes the respondent's support for the proposed change.
123.	Red Lumo	Red and Lumo see value in the following fields:	AEMO refers to the response in Table 1, Item 106.

No.	Consulted person	Comment	AEMO response
		Meter Route: At the point in which there are no requirements to physically read meters, Red and Lumo only support this field being deleted. While non-smart meters continue to exist, this field must continue to be populated by the MC (DNSP). Meter Test Results Notes: Whilst this may be difficult to make structured, it could be one of the exception cases whereby free text is allowed. We do see value in having this field populated, if meter test reports are not. Next Test Date: Useful in determining booking metering test requirements in advance or not, as well as informing customers of potential upcoming meter tests.	
124.	SA Power Networks	SA Power Networks support the removal of fields.	AEMO notes the respondent's support for the proposed change.
125.	TasNetworks	TasNetworks believe that consideration should be given to transitioning the fields to optional, to reduce the impact on participants when making system changes.	AEMO refers to the response in Table 1, Item 106.
126.	United Energy	United Energy agrees with the removal of these fields. Meter Constant, United Energy does not hold a position on this matter.	AEMO notes the respondent's support for the proposed change. AEMO notes the respondent's comment in relation to Meter Constant.
127.	Vector Metering	We do not support the removal of Last test date. We do not support the inclusion of Meter Test Result Accuracy (see above). We support the removal of Meter Point. This field is used by the MDP to order the sequence that a meter at an NMI appears in the field reading device and therefore has no relevance to anyone other than the manual meter reader. Meter Point doesn't have any relationship to suffix. Meter Constant was used to count the number of revolutions of a BASIC meter disk per Wh; This is not relevant for Electronic meters; Recommend its removal.	AEMO notes the respondent's support for the proposed change and refers to the responses in Table 1, Item 85 and 106.
Q7 A majority of workshop attendees did not support the inclusion of the aforementioned industry-proposed fields as they would not provide value to the market as a whole. Are any of them worth further consideration? If so, why and what value do they add to the market?			
128.	AGL	See list at end of formal response.	As the majority of respondents do not support the addition of the following proposed fields:

No.	Consulted person	Comment	AEMO response
		AGL specifically supports the inclusion of Disconnection Method as there are at least two methods to disconnect a NMI (Fuse and Street Disconnection), therefore the NMI status does not provide sufficient information. AGL does not support the removal of Last Test Date – see Q 6 for details. Meter Lock – one of the major issues facing the industry as an outcome of Power of Choice is the variety and management of meter locks. This has led to substantial costs and re-work, and changes such as Energy Queensland releasing their metering key to metering businesses. As such, AGL supports this information being included in MSATS in an enumerated list. Minimum Interval Length – AGL strongly supports the inclusion of this information. As a result of 5 ms, it has been identified that many 30 min meters cannot be reconfigured to 5 min meters and will need physical replacement. With the introduction of Demand Response, some sites may need to be upgraded to 1 min meter reads (to cope with a 5 min settlement cycle) and therefore there will be a lot of value in knowing which meters can be reconfigured, versus replaced. Meter Family Failure – see response to Q3. AGL strongly believes that if the exemption number is to remain as a number, without identifying the type of fault, then this field should be an enumerated Fault Type Field associated with the exemption number. Meter Test Report – see response to Q6. The combination of date and pass/fail should be adequate for data management and customer purposes. Plug In Meter – AGL believes that the proposal to include meter make and model should provide better information, as Plug In Meter is just one issue likely to be faced going forward. AGL would suggest that with the development of the make model enumeration list, that consideration be given to using that as the basis for a more comprehensive meter database which can be accessed by participants to understands the hardware in question.	• Disconnection Method • Meter Commission Date • Meter Locks • Minimum interval length • Meter Family Failure • Meter Test Report • Plug-in Meter Flag AEMO intends to not add these fields.
129.	Alinta Energy	It is not clear to Alinta Energy what question AEMO is asking here? Assuming this is requesting if there are any additional items that we would like to be consider and why see below responses;	AEMO refers to the response in Table 1, Item 128.

No.	Consulted person	Comment	AEMO response
		Solar and battery flags Alinta understands that currently this information is captured under the relevant DER obligations however, we believe there is fundamental value to both retailers and customers in having this information available in standing data. This would enable retailers to provide innovative products and services to customers based on their site-specific needs and help us be able to offer future services and support initiatives under demand side participation that is not readily available to us currently. This would also help customers access products and pricing tailored to their home as we have no way of identifying or knowing if there is solar or battery and the size of the units currently without customers providing this proactively, it is also worth noting networks have this information available. Life support During the consultation pertaining to life support in 2018, AEMO was given the task of exploring the long-term solution for life support via a central repository option and was requested by the IEC to review whether it could support this intuitive in line with CDR and other like changes. Having the ability to identify, manage and update life support in a market facing system would support all market participants activities and ensure adequate customer protections where identifiable. This would not contain sensitive data or customer information but would simply be a flag indicating the current registration status relevant at the site.	AEMO intends to continue to maintain the solar and battery flags as part of the DER obligations at this stage. The ACCC's submission to AEMO states, "A key tenet of the CDR is secure sharing of consumer data – that is, that the correct data relating to an authenticated consumer is shared with an accredited third party, in line with the consumer's consent." In future, AEMO understands that a highest priority in the energy CDR context will be to ensure the relevant controls in respect of personal or sensitive information. The key privacy questions concern: how consumers provide consent to the use of their data; the timeframes in which this use occurs; and how the data is treated once the service is provided. A consent management function could be a key role of an independent, trusted intermediary, with a strong record of prudent and secure information management. This function would: facilitate a single point of connection for consumers seeking to understand the use of their data; minimise friction in the system; and reduce costs to parties to CDR transactions. Currently, AEMO handles consumer data – including sensitive information such as life support – as a function of its existing services. However, AEMO does not store this information in its systems. Instead, the B2B

No.	Consulted person	Comment	AEMO response
			procedures sets out the processes by which participants – including retailers and distributers – store, as well as obtain, exchange and manage this information, in accordance with their obligations under the NER and National Energy Retail Rules (NERR). In this regard, AEMO notes that B2B communications may be influenced by some MSATS Standing Data items, but are not directly linked to the business-to-market operations. Accordingly, AEMO may consider a life support flag field in the context of future energy CDR, but not as part of the MSATS Standing Data Review.
130.	Aurora Energy	Aurora Energy agrees with AEMO's statement	AEMO notes the respondent's support for the proposed change.
131.	Ausgrid	Agree, should not be included.	AEMO notes the respondent's support for the proposed change.
132.	AusNet Services	AusNet Services agrees with the majority of attendees and does not support the inclusion of the following fields. - Disconnection Method - Meter Commission Date - Meter Locks - Minimum Interval Length - Meter Family Failure - Meter Test Report - Plug-in Meter Flag	AEMO notes the respondent's support for the proposed change.
133.	CitiPower Powercor	CitiPower Powercor does not support the inclusion of the proposed fields.	AEMO notes the respondent's support for the proposed change.
134.	Endeavour Energy	We believe that AEMO should consider adopting the field called Meter Commission Date. From our experience there are many instances where a meter is installed at a site and is not populated in MSATS for over 6 months, at which point MSATS will not accept a	AEMO refers to the response in Table 1, Item 128.

No.	Consulted person	Comment	AEMO response
		start date that aligns with the commissioning date (due to the 140 business day limit of the CR3001) We believe that including this new field will allow for metering providers to communicate the meter commissioning date, without the 140 business day retrospective constraint, and therefore communicate when to expect metering data from.	
135.	Energy Queensland - Energex and Ergon Energy Network	No	AEMO notes the respondent's comment.
136.	EnergyAustralia	Meter Commission Date: This will enable retailers to assist customers that are advising to be without electricity, instead of referring to the distributor. Disconnection Method: This will limit NACK / Not Complete service orders, as it will empower retailers to raise the appropriate request based on what has occurred at site. Meter Locks: This will limit NACK / Not Complete service orders, as it will enable retailers to advise the access requirements to the parties attending site (MC, MP, MDP). Plug-in Meter Flag: This is useful in reducing wasted truck fees; however, if meter type flag correctly identifies a plug-in meter, then there is no need.	AEMO refers to the response in Table 1, Item 128.
137.	ERM Power	No	AEMO notes the respondent's comment.
138.	EvoEnergy	Not worth further consideration.	AEMO notes the respondent's support for the proposed change.
139.	Intellihub	No	AEMO notes the respondent's comment.
140.	Metering Dynamics	No. Metering Dynamics sees no value for the market in these fields.	AEMO notes the respondent's support for the proposed change.
141.	Origin Energy	No comment	
142.	PLUS ES	PLUS ES support the requirement to identify metering installations as Meter Family Failures (MFF). This information should not be derived from the exemption field alone. If the exemption was no longer provided i.e. customer does not consent to exchange a MFF meter etc, it would be onerous to manage the replacement of the MFF meter,	AEMO refers to the response in Table 1, Item 45.

No.	Consulted person	Comment	AEMO response
		especially in instances where participant role/s were changed. i.e. an incoming FRMP, new MC, new MPB	
143.	Powerlink Queensland	No, we don't see any benefit from these proposed fields for WIGS NMIs.	AEMO notes the respondent's support for the proposed change.
144.	Powermetric	No	AEMO notes the respondent's comment.
145.	Red Lumo	Red and Lumo see value in the following fields: Meter Family Failure: This would assist with fault finding and metering prioritisation, reduce transfer restrictions. Meter Commission Date: This field would provide the retailer with information relevant to the metering installation, such as age. It is relevant for network and metering settlements. Disconnection Method: It will provide the incoming retailer the same visibility of the current retailer who receives the information in a service order response. This field is useful in order to ensure accurate information can be provided to customers. It can also assist in the appropriate actions to be taken, and avoid any potential delays to reconnect. We question whether AEMO can collate this information given it is a B2B Procedural matter. Meter Locks: We strongly support this field as it will assist in determining potential access issues. Recommend this field is enumerated. Some customers, especially new (move-in) customers, will not be aware of any locks or access issues to their meters. Being able to proactively advise them of this can save time and effort, and provide a better customer experience. Meter Test Report: This field should be made mandatory and backdated to ensure quality. Our only other idea is that a B2B process is created and a standardised format used (based on NMI M 6 - 2) so that the reports are easier to read and can be extracted by an automated system more easily. Can be useful for customers to be advised of test results, and provide them with more detail (and levels of standard).	AEMO refers to the response in Table 1, Items 45 and 128.
146.	TasNetworks	No.	AEMO notes the respondent's comment.
147.	United Energy	United Energy does not support the inclusion of the proposed fields.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
148.	Vector Metering	See below for comments on proposed fields Disconnection Method – Not required because the Meter Status/NMI status will provide this information. i.e. disconnected physically by the DNSP or via lifting the contactor in the meter by the MP. • Meter Commission Date – Unclear how this is useful. Retailers can see the latest meter details records via NMI discovery or MSATS metering reports which contain Start Dates. If meter has been in place for 5 years it is unclear how this is useful to anyone who is not the MP, who already know this information; • Meter Locks – Knowing if a key was required would be useful to avoid wasted truck visits when trying to replace a Malfunctioning/Family Failure meter; This would allow the MP to contact the customer to gain access before attending. Currently access issues related to locks impact up to 15% of malfunctions and family failure work; • Minimum interval length – No value - remove; All smart meters can be configured for almost any interval; • Meter Family Failure – There should be a Malfunction indicator – See comments 1-3 above; • Meter Test Report – No Value; MP can provide if necessary and has an obligation to do so. • Plug-in Meter Flag – This would give some indication of the complexities in exchanging the meter. There are estimated to be 100k-150k plug in meters across the NEM. MC's need to ensure specialised metering equipment (plug-in adapter bases) are available. These are not a standard item that all techs carry. Knowing this before attending site would reduce wasted truck visits.	AEMO notes the respondent's support for some of the proposed changes and refers to the response in Table 1, Item 128.
Q8 Do you have any other comments regarding the general Metering Installation Information fields?			
149.	AGL	See appendices at end of response. AGL strongly supports the inclusion of a field to identify why a meter is a Type 4A. Clause 7.8.4 requires the MC to record the small customer refusal, but in a competitive market the FRMP and MC may be churned at the same time, leaving the incoming FRMP with no records of such a refusal. This in turn can lead to the incoming FRMP trying to service a customer with inadequate information, which often leads to a poor customer experience.	AEMO refers to the assessment provided in section 4.2 of this draft report.

No.	Consulted person	Comment	AEMO response
		By including this information within MSATS the incoming FRMP will not need to rely on information from the previous FRMP or the previous MC (following an MC churn). Noting previous comments about this information, AGL considers that this information relates to an energy market service, in the same way that information about solar, battery or controlled load is recorded to provide a customer service.	
150.	Alinta Energy	NA	AEMO notes the respondent's comment.
151.	Aurora Energy	N/A	AEMO notes the respondent's comment.
152.	Ausgrid	No	AEMO notes the respondent's comment.
153.	AusNet Services	No comment.	
154.	CitiPower Powercor	CitiPower Powercor seeks clarification on section 3.1.1. Table 1 (page 8) of the Issues paper, states that Last Test Date will be repurposed and will be a mandatory field. Further down in the table it states Meter Test Accuracy will be amended to be in date format with a pass/fail flag. Table 2 (page 10) outlines the fields that will be removed from MSATS. For Last Test Date states, 'Assuming the Meter Test Result Accuracy field will be implemented as described, this field will be redundant and can be removed.' CitiPower Powercor strongly recommends the 'Last Test Date' field be retained with the date of the test, otherwise the results of the test recorded in 'Meter Test Accuracy' will be meaningless. Also, we (and assumingly most other MP's) replace any meter, at time of test, that fails the meter accuracy test (this is true for us with our 100% CT meter testing as well as our AS1284.13 Sample testing of direct connected meters). In this instance, there appears little point to have a mandatory field to record the pass/fail results (and particularly the fail result) of a removed meter? The installed meter serial number will then change in the NMI standing data from the failed meter to the replacement meter and the pass /fail flag will appear to be totally irrelevant to the newly installed meter? However, we also test direct connected meters as part of a family, and where a family is 'failed' through sample testing, there is a need to be able to flag 'all' meters in that family with a Family Fail Flag, as those other meters will not have been replaced during the sample testing process.	AEMO refers to the response in Table 1, Item 66.

No.	Consulted person	Comment	AEMO response
		If test result pass/fail details are going to replace or enhance the 'Last Test Date' record, then this should be itemised for not only the meter itself, but other components of the metering installation including LV Current Transformers and HV Voltage Transformers and HV Current Transformers. The "Last Test Date" Field should also be able to record the last test year of a Family Test, where the individual meters (or LVCT's) have not been tested, but are covered by sample testing within their family in that year, and in that case "Family Test 2020" should be entered. Should a family failure occur (of sample tested meters or LVCT's) then all members of the family should have their failure recorded in the "Meter Family Failure Field see (c).	
155.	Endeavour Energy	Yes, please see below our comments on 'New fields for non-contestable unmetered loads', 'Network Tariff Code' and 'Separate metering installation fields from metering fields'	AEMO notes the respondent's comment.
156.	Energy Queensland - Energex and Ergon Energy Network	No	AEMO notes the respondent's comment.
157.	EnergyAustralia	Near real-time updates to NMI/Meter Status fields would significantly improve the Re-Energisation process	AEMO notes the respondent's comment and will take this into consideration at design and implementation, alongside other related IT projects. AEMO is committed to the continuous uplift of the solutions which underpin market operations and support positive consumer outcomes.
158.	ERM Power	No	AEMO notes the respondent's comment.
159.	EvoEnergy	No further comments	
160.	Intellihub	No	AEMO notes the respondent's comment.
161.	Metering Dynamics	No comments.	
162.	Origin Energy	No comment	

No.	Consulted person	Comment	AEMO response
163.	PLUS ES	MRAM reason code was discussed but has been omitted from the issue paper and the identified fields. PLUS ES believes the ability to preferably identify or derive in MSATS if an MRAM meter is due to no network coverage, etc, provides value to participants. It will drive process efficiencies, cost reductions and support participants to meet their obligations. Especially in scenarios where a customer who requested the MRAM has moved out of a site, and the meter could potentially have the communications re-established. If there is an Incoming FRMP they do not have this information available to them. MCs who have the obligation to maintain this information and ensure that metering installation is a type 4, are not the participants who have the customer relationship, interaction and knowledge of customer movements (move in/move out). An incoming/new MC on an NMI do not know what has triggered the MRAM status. They could attempt to rectify a potential telecommunication coverage issue, but the reason could be that the customer refused the communications on the meter. The process of being compliant to MC Obligations with respect to meter communications is currently inefficient.	AEMO refers to the response in Table 1, Item 149.
164.	Powerlink Queensland	No, no other comments.	AEMO notes the respondent's comment.
165.	Powermetric	No	AEMO notes the respondent's comment.
166.	Red Lumo	For the Meter Read Type Code field, Red and Lumo suggest that rather than combining four pieces of information in a single field, each could be separated into its own relevant enumerated field - allowing for easier future changes if required. Also, rather than A = 5, B = 15 etc, it would be better to have an 'interval_length' field with values 5, 10, 15, 30 etc. (Noting that NEM12 allows 10-minute interval length, which is not provided for in this proposal).	AEMO intends to maintain the field as a combination of four pieces of information and will use the pre-existing fourth character within the field to provide the interval length. AEMO notes that interval lengths can only be sub-multiples of the settlement interval length by agreement. The current sub-multiple for 30 minutes is 15 minutes and, under the 5MS procedure changes, any interval length greater than 5 minutes would not be possible.
167.	SA Power Networks	SA Power Networks do not see value in the Meter Read Type Code being used for Type 5, 6, 7 or Non-Contestable UMS meters. The major value of this field and reason behind the proposed change was to enable identification of the associated metering data interval length. There is only a single interval length possible for these metering	AEMO notes that the Meter Read Type Code is not applicable to calculated meter types as evidenced by the first character representing either R (remote) or M (manual), hence, Type 7 and non-contestable is not

No.	Consulted person	Comment	AEMO response
		types and this is well known by industry. SA Power Networks therefore request that any changes make it clear that this field is not required to be provided for these meter types.	included in this field. AEMO notes the reason for applying the fourth character logic to include manually read meters is to avoid a mixture of three or four character length responses in the one field when the field is mandatory. AEMO recognises that industry will need to know capability of interval length is it 5 or 30 for Type 4A MRAM.
168.	TasNetworks	TasNetworks believe that the meter Manufacturer/Model fields should be required instead of mandatory. Test Result Accuracy – combining a date and extra character is not an efficient database practice. But further to this is there any value in this field? If the test is failed, then the meter should be replaced.	AEMO refers to the response in Table 1, Item 66.
169.	United Energy	United Energy seeks clarification on section 3.1.1. Table 1 (page 8) of the Issues paper, states that Last Test Date will be repurposed and will be a mandatory field. Further down in the table it states Meter Test Accuracy will be amended to be in date format with a pass/fail flag. Table 2 (page 10) outlines the fields that will be removed from MSATS. For Last Test Date states, 'Assuming the Meter Test Result Accuracy field will be implemented as described, this field will be redundant and can be removed.' United Energy strongly recommends the 'Last Test Date' field be retained with the date of the test, otherwise the results of the test recorded in 'Meter Test Accuracy' will be meaningless. Also, we (and assumingly most other MP's) replace any meter, at time of test, that fails the meter accuracy test (this is true for us with our 100% CT meter testing as well as our AS1284.13 Sample testing of direct connected meters). In this instance, there appears little point to have a mandatory field to record the pass/fail results (and particularly the fail result) of a removed meter? The installed meter serial number will then change in the NMI standing data from the failed meter to the replacement meter and the pass /fail flag will appear to be totally irrelevant to the newly installed meter? However, we also test direct connected meters as part of a family, and where a family is 'failed' through sample testing, there is a need to be able to flag 'all' meters in that	AEMO refers to the response in Table 1, Item 66.

No.	Consulted person	Comment	AEMO response
		family with a Family Fail Flag, as those other meters will not have been replaced during the sample testing process. If test result pass/fail details are going to replace or enhance the 'Last Test Date' record, then this should be itemised for not only the meter itself, but other components of the metering installation including LV Current Transformers and HV Voltage Transformers and HV Current Transformers. The "Last Test Date" Field should also be able to record the last test year of a Family Test, where the individual meters (or LVCT's) have not been tested, but are covered by sample testing within their family in that year, and in that case "Family Test 2020" should be entered. Should a family failure occur (of sample tested meters or LVCT's) then all members of the family should have their failure recorded in the "Meter Family Failure Field see (c).	
170.	Vector Metering	Vector believes MSATS needs to transition to near real-time updates for the NMI Status and Meter Status. This is required so that all parties can be aware of the accurate energisation status of a site as soon as possible. This will help with a better customer experience when they are moving into a premise and avoid customer left off supply; AEMO could use this as a prototype for moving all MSATS data to real time…	AEMO notes the respondent's comment and will take this into consideration at design and implementation, alongside other related IT projects. AEMO is committed to the continuous uplift of the solutions which underpin market operations and support positive consumer outcomes.

Table 2 Metering Installation Transformer Information

No.	Consulted person	Comment	AEMO response
Q9 Do you agree to AEMO's proposal with regards to splitting transformer information into CT and VT?			
1.	AGL	Yes. Clearer information will assist in the longer-term management of CT/VT equipment, in particular the last test date.	AEMO notes the respondent's support for the proposed change. As the majority of participant responses support the split of the transformer fields to CT and VT, AEMO intends to split the transformer information into CT and VT.
2.	Alinta Energy	Alinta Energy agrees with AEMO's proposal to split the transformer information into separate fields for CT's and VT's.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
3.	Aurora Energy	Aurora Energy agrees with AEMO's proposal	AEMO notes the respondent's support for the proposed change.
4.	Ausgrid	Ausgrid is not sure what additional benefit this will achieve, as this information should be captured by the MPB when installing and inspecting metering installation and stored in their systems. However if this is made a requirement, NMIs with a classification of Wholesale metering points (or under 5MS, bulk, xboundary, interconnector) should be exempt from providing this information as these sites will not churn.	AEMO refers to the responses in Table 2, Items 5 and 20. AEMO agree with excluding certain NMI Classification Codes (BULK, XBOUNDRY and INTERCON) for the CT and VT fields: • CT/VT Location • CT/VT Ratio • CT/VT Type • CT/VT Accuracy Class • CT/VT Last Test Date: Date However, this approach can only occur after ALL NMIs have been correctly assigned with the new 5MS/GS NMI Classification Codes.
5.	AusNet Services	AusNet Services does not oppose AEMO's proposal to splitting transformer information into CT and VT per say, however, we do object to the proposal to make these fields 'Required'. This information is of no benefit in Victoria for small customer metering where the MPB = MC = LNSP. Additionally, we question whether contestable MPBs will be reliably populating VT information given many VTs are installed by and owned by the LNSP.	AEMO notes that this change does not only cover small customer metering, rather it covers all NMIs with CT and VT equipment, including where a site is VT that is HV which are contestable sites and involve MCs. Making the fields Required only means that it needs to be provided if the information is available, if it is not available then participant does need to provide the information. The completion of this field will be dependent on whom holds the information, MC, LNSP. AEMO notes this information is of benefit to retailers, hence, making it available in the market. These benefits also extend to sites where the CT may have been provided by the network but it is a large site where it contestably metered. In addition, this change future proofs the Victorian market where metering contestability may occur in the future.

No.	Consulted person	Comment	AEMO response
6.	CitiPower Powercor	CitiPower Powercor supports splitting transformer information into CT and VT, provided it only applies to new sites or where work is performed post the introduction of this change.	AEMO notes the respondent's support for the proposed change and refers to the response provided in Table 2, Item 1. AEMO is reviewing the data cleansing and transition phases for the proposed changes in the MSATS Standing Data Review. AEMO has posed questions in section 4.10 of this Draft Report to gather information on participant requirements for the cleansing and transition phases.
7.	Endeavour Energy	Yes, we agree with the splitting of transformer information into CT and VT. This would allow for better communication of these metering installation equipment.	AEMO notes the respondent's support for the proposed change.
8.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex have no objections with AEMO's proposal. However, we seek clarity on the treatment of legacy metering, in terms of whether there is an expectation for this metering to be updated.	AEMO refers to the responses provided in Table 2, Items 5 and 6.
9.	EnergyAustralia	EnergyAustralia supports AEMO's proposal to split transformer information into CT and VT.	AEMO notes the respondent's support for the proposed change.
10.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change.
11.	EvoEnergy	Yes	AEMO notes the respondent's support for the proposed change.
12.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
13.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
14.	Origin Energy	Yes, Origin agrees with splitting transformer information into CT and VT types.	AEMO notes the respondent's support for the proposed change.
15.	PLUS ES	PLUS ES suggests it would be valuable to have a flag that identifies if a meter is associated with a CT and/or VT (or neither). This would be beneficial in assisting	AEMO intend to capture a flag of whether a premises has CT or VT through the new field Connection

No.	Consulted person	Comment	AEMO response
		market participants with identifying how the site needs to be managed. It would be easier to maintain/update with minimal burden.	Configuration. AEMO intends for the fields provided on CT and VT at the meter level to provide options for participants to identify if a CT or VT exists at a meter.
16.	Powerlink Queensland	Yes, we agree to the splitting of the transformer information, however keep in mind that we use up to 12 CTs and 12 VTs in a WIGS metering scheme.	AEMO notes the respondent's support for the proposed change.
17.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
18.	Red Lumo	Red and Lumo support this proposal.	AEMO notes the respondent's support for the proposed change.
19.	SA Power Networks	SA Power Networks have a neutral position on this item.	AEMO notes the respondent's comment.
20.	TasNetworks	TasNetworks don't believe this information would be widely used by participants outside of MPB/MC and therefore don't see any value in populating this information in MSATS. More value if this is kept externally to MSATS. TasNetworks believes the existing Multiplier field along with the CT and VT ratios are the only transformer information of value.	AEMO notes the respondent's comment and refers to the response provided in Table 2, Item 1 and 5.
21.	United Energy	United Energy supports splitting transformer information into CT and VT, provided it only applies to new sites or where work is performed post the introduction of this change.	AEMO notes the respondent's support for the proposed change and refers to the responses provided in Table 2, Items 5 and 6.
22.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change.
Q10 Do you agree to AEMO's proposal with regards to adding new transformer information fields which includes: CT/VT Accuracy Class, CT/VT Last Test Date?			
23.	AGL	Yes	AEMO notes the respondent's support for the proposed change.
24.	Alinta Energy	Alinta Energy supports the addition of these fields.	AEMO notes the respondent's support for the proposed change.
25.	Aurora Energy	Aurora Energy agrees with AEMO's proposal	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
26.	Ausgrid	Ausgrid is not sure what benefit the accuracy class field achieves. Last test date would be useful for incoming parties; however this could lead to parties discrimating against customers if they know a CT/VT test is due. NMIs with a classification of Wholesale metering points (or under 5MS, bulk, xboundary, interconnector) should be exempt from providing this information as these sites will not churn.	AEMO refers to the response in Table 2, Item 4 and 33.
27.	AusNet Services	As per AusNet Services response to Question 10.	AEMO notes the respondent's comment and refer to the response in Table 2, Item 5.
28.	CitiPower Powercor	CitiPower Powercor supports splitting transformer information into CT and VT, provided it only applies to new sites or where work is performed post the introduction of this change.	AEMO refers to the response in Table 2, Item 6.
29.	Endeavour Energy	Yes, we agree with adding new transformer information fields. However, we wish to suggest the following: CurrentTransformerType: - this should be the type of CT. This field should be an enumerated field, which should include the following values: A, B, C, S, T, U, V and W CurrentTransformerRatio: This should be made clearer that the ratio is the connected ratio, as opposed to the available ratio. This field should be an enumerated field, which should include the following values: 150:5 200:5 300:5 400:5 600:5 800:5 1000:5 1200:5 1500:5 2000:5 3000:5 4000:5	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 4.3 of this draft report.

No.	Consulted person	Comment	AEMO response
		CurrentTransformerAccuracyClass: This field should be an enumerated field, which should include the following values: 0.1, 0.2, 0.5, 3, 5, 0.1S, 0.2S and 0.5S VT Primary and Secondary Voltages: We suggest that this new field be added as it would help an incoming metering provider to better understand the metering installation and therefore better prepare for the initial site visit. This field should be an enumerated field, which should include the following values: 132KV / 110v, 66KV / 110v, 33KV / 110v, 11KV / 110v	
30.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex have no objections with AEMO's proposal. However, we seek clarity on the treatment of legacy metering, in terms of whether there is an expectation for this metering to be updated.	AEMO refers to the response in Table 2, Items 1 and 6.
31.	EnergyAustralia	Yes, it will provide the required information to retailers to ensure that customers are quoted and service orders are dispathced correctly.	AEMO notes the respondent's support for the proposed change.
32.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change.
33.	EvoEnergy	No, as this information, for older sites, may be difficult to obtain, but understand the benefits to the market.	AEMO notes the respondents comment and refer to the response in Table 2, Items 1 and 5.
34.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
35.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
36.	Origin Energy	Yes, Origin agrees with AEMO's proposal with regards to adding new transformer information fields. As meters are tested separately to the CT/VT, the retailer is able to determine and provide information to the customer if required as well as ensuring that external MC/MP's are complying with their obligations.	AEMO notes the respondent's support for the proposed change.
37.	PLUS ES	PLUS ES does not oppose these fields if value is delivered. MC & MP must properly asset manage CT's and VT's because of NER compliance. The details required for this are complex and best kept within the MP & MC systems.	AEMO notes the respondents comment and refer to the response in Table 2, Items 1 and 5. AEMO proposes the following changes to the current fields:

No.	Consulted person	Comment	AEMO response
		Reflecting a partial amount of this in MSATS would just be a burden without benefit for the market. If Last Test Date for CT and last test date for VT had to be included, then this would need to be enumerated to identify if the CT was associated with a sample plan or a timetabled plan. This is because the LV CT's on a sample plan are "tested" by the family. The drawback of having these dates in MSATS is that it will encourage discrimination by FRMP's selecting these sites.	Field 1: Test - List of options: Tested (definition – part of 100% testing), Sample Tested (definition – tested as part of a sample plan), Sample (definition – part of an approved sample plan), set as Required where a CT or VT exists as part of the metering installation Field 2: Sample Family ID, set as Required if a CT or VT is part of a family within an approved sample plan Field 3: Date – date represents actual test date for those tested or date represents family expiry date for those included in an approved sample plan, set as Required where a CT or VT exists as part of the metering installation.
38.	Powerlink Queensland	No, we don't agree with the addition of these new fields into the standing data for WIGS NMIs as CT/VT Accuracy Class determined by the rules and MSATS isn't the tool to police compliance.	AEMO notes the respondents comment and refer to the response in Table 2, Items 1 and 5.
39.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
40.	Red Lumo	Red and Lumo support this proposal.	AEMO notes the respondent's support for the proposed change.
41.	SA Power Networks	SA Power Networks do not support the inclusion of these fields for Type 5 & 6 NMI's where we are providing the MPB function.	AEMO notes the respondents comment and refer to the response in Table 2, Items 1 and 5.
42.	TasNetworks	TasNetworks don't believe this information would be widely used by participants outside of MPB/MC and therefore don't see any value in populating this information in MSATS. More value if this is kept externally to MSATS.	AEMO notes the respondents comment and refer to the response in Table 2, Items 1 and 5.
43.	United Energy	United Energy supports splitting transformer information into CT and VT, provided it only applies to new sites or where work is performed post the introduction of this change.	AEMO notes the respondent's support for the proposed changes and refers to the response in Table 2, Item 21.
44.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change.
Q11 Do you agree with the validations proposed by AEMO for the transformer information fields? If not, please provide other types of validations that can be applied.			

No.	Consulted person	Comment	AEMO response
45.	AGL	Location could be split to GPS and supporting text, especially for HV sites. Ratio – careful analysis should be undertaken to minimise the possible variations so that it is difficult to load non-valid information. This is particularly important as the Ratio drives the load calculation and therefore the customer billing. This is a regular cause of incorrect energy measurement. Type – no issue. Accuracy - careful analysis should be undertaken to minimise the possible variations so that it is difficult to load non-valid information Test Date – no issue	AEMO notes the respondent's suggestions and support for some of the changes and refers to the list values provided in section 4.3 of this draft report.
46.	Alinta Energy	Alinta Energy does not have an opinion on what this field should contain as it is a field that it is unlikely to use.	AEMO notes the respondent's comment.
47.	Aurora Energy	Aurora Energy agrees with AEMO's proposal	AEMO notes the respondent's support for the proposed change.
48.	Ausgrid	NMIs with a classification of Wholesale metering points (or under 5MS, bulk, xboundary, interconnector) should be exempt from providing this information as these sites will not churn.	AEMO notes the respondents comment and refers to the response in Table 2, Item 4.
49.	AusNet Services	As per AusNet Services response to Question 10. Additionally the enumerated list for CT/VT Type should be "single phase, multi phase". As some connections have two phases connected.	AEMO notes the respondent's suggestion and refers to the list values provided in section 4.3 of this draft report.
50.	CitiPower Powercor	CitiPower Powercor believes the treatment of family testing of LVCT's need to be addressed, where the sample testing of a set of CT's, each with their own test dates, should when completed allow for the remaining CT's in that family to be labelled as "Family Test 2020" etc. This will confirm they have not been individually tested but covered by the family sampling process. Where an LVCT Family fails, that CT Family failure should be recorded in the "Meter Family Failure Field" see (c).	AEMO notes the respondents comment and refers to the response in Table 2, Item 37.
51.	Endeavour Energy	We wish to suggest the following additional validations: • All the CT information fields are mandatory when the ConnectionConfiguration indicates that there are CTs • All the VT information fields are mandatory when the ConnectionConfiguration indicates that there are VTs	AEMO notes the respondent's suggestion and refers to the list values provided in section 4.3 of this draft report.

No.	Consulted person	Comment	AEMO response
		• The value in CurrentTransformerRatio is appropriate for the CurrentTransformerType. See below: CT Type CT Ratio A 150 / 300 / 600 : 5 B 400 / 800 / 1200 : 5 C 1000 / 2000 / 3000 : 5 S 200 : 5 T 800 : 5 U 2000 : 5 V 4000 : 5 W 1500 : 5	
52.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex have no objections to this proposal.	AEMO notes the respondent's comment.
53.	EnergyAustralia	EnergyAustralia is content with the validatons proposed by AEMO.	AEMO notes the respondent's support for the proposed change.
54.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change.
55.	EvoEnergy	Need to define this further as participants will hold this in their systems as 40, or 40:1, or 200/005. Are all acceptable?	AEMO notes the respondent's suggestion and refers to the list values provided in section 4.3 of this draft report.
56.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
57.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
58.	Origin Energy	Yes, Origin agrees with the validations proposed by AEMO for the transformer information fields.	AEMO notes the respondent's support for the proposed change.
59.	PLUS ES	See comments above with respect to CT/VT	AEMO notes the respondent's comment.

No.	Consulted person	Comment	AEMO response
60.	Powerlink Queensland	Entering and maintain this additional information for WIGS NMIs is time-consuming with little benefit.	AEMO refers to the response in Table 2, Items 1 and 5.
61.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
62.	Red Lumo	No comment at this time	AEMO notes the respondent's comment.
63.	SA Power Networks	SA Power Networks have a neutral position on this item.	AEMO notes the respondent's comment.
64.	TasNetworks	TasNetworks don't believe this information would be widely used by participants outside of MPB/MC and therefore don't see any value in populating this information in MSATS. More value if this is kept externally to MSATS.	AEMO refers to the response in Table 2, Items 1 and 5.
65.	United Energy	United Energy believes the treatment of family testing of LVCT's need to be addressed, where the sample testing of a set of CT's, each with their own test dates, should when completed allow for the remaining CT's in that family to be labelled as "Family Test 2020" etc. This will confirm they have not been individually tested but covered by the family sampling process. Where an LVCT Family fails, that CT Family failure should be recorded in the "Meter Family Failure Field" see (c).	AEMO notes the respondents comment and refers to the response in Table 2, Item 37.
66.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change.
Q12 Do you agree to not to add CT/VT serial number fields, and if you do not agree, can you propose solutions for adding those fields in (i.e. new NMI devices table) and will adding them provide more benefit than costs to your business and customers			
67.	AGL	If Serial Number is sufficiently valuable to metering businesses, then AGL proposes that it be part of the new group of CT/VT fields which will be created as a result of this proposal, otherwise we leave that to the Metering Businesses for a decision.	AEMO notes the respondent's comment.
68.	Alinta Energy	Alinta Energy agrees to not including transformer serial numbers in MSATS. If we require this information, then we can obtain it from the relevant MC/MPB.	AEMO notes the respondent's support for the proposed change.
69.	Aurora Energy	Aurora Energy agrees with AEMO's proposal	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
70.	Ausgrid	Agree, this should be captured by the MPB when installing and inspecting metering installation and stored in their systems.	AEMO notes the respondent's support for the proposed change.
71.	AusNet Services	AusNet Services supports AEMO's proposal to not add CT/VT Serial Numbers. Transformer serial numbers would be completely irrelevant to the market.	AEMO notes the respondent's support for the proposed change.
72.	CitiPower Powercor	CitiPower Powercor agrees to not add CT/VT serial number fields.	AEMO notes the respondent's support for the proposed change.
73.	Endeavour Energy	We agree with AEMO to not add CT/VT serial number fields. We believe that it is sufficient for a metering service provider to identify a metering installation by referring to the site address and the meter serial number.	AEMO notes the respondent's support for the proposed change.
74.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex agree to not add CT/VT serial details. However, we consider that there is benefit in having this information available for multi metered/measured sites in order to ascertain the correct relationship between meter and CT/VT.	AEMO notes the respondent's support for the proposed change.
75.	EnergyAustralia	Yes we agree with this decision, as there is no obvious benefit in storing this information in MSATS.	AEMO notes the respondent's support for the proposed change.
76.	EvoEnergy	Agree not to add serial numbers, as this information, for older sites, may be difficult to obtain, and does not add value.	AEMO notes the respondent's support for the proposed change.
77.	Intellihub	Disagree. Providing the serial number can then be mateched with the teste certificates.	As the majority of responses support not adding the new fields of CT/VT serial numbers, AEMO intends not to add these new fields.
78.	Metering Dynamics	Yes. Metering Dynamics, supports not adding CT/VT serial numbers and see no benefit from having this detail in MSATS.	AEMO notes the respondent's support for the proposed change.
79.	Origin Energy	No, Origin does not agree to add CT/VT serial number fields as this would be costly to undertake. Currently this information is verified directly with the MP's and works effectively.	AEMO notes the respondent's support for the proposed change.
80.	PLUS ES	PLUS ES supports to not include the CT/VT serial number fields in MSATS. It can only be reflected at a cost to PLUS ES for little if any benefit.	AEMO notes the respondent's support for the proposed change.
81.	Powerlink Queensland	We agree that CT/VT serial number fields shouldn't be added as maintaining this information in MSATS will be time-consuming with little benefit. The rules determine	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
		that we have an asset management tool to store this information, on which we are audited on. Having it in MSATS would be redundant.	
82.	Powermetric	This adds considerable value when checking and validation instrument transformer test results. This would also be nice to have for reference, as this is sometimes impossible to obtain safely when the site is energised. If everything above needs to be implemented, we see this as minimal extra work.	AEMO refers to the response in Table 2, Item 77.
83.	Red Lumo	No comment at this time	
84.	SA Power Networks	SA Power Networks agree that these field should not be added.	AEMO notes the respondent's support for the proposed change.
85.	TasNetworks	TasNetworks don't believe this information would be widely used by participants outside of MPB/MC and therefore don't see any value in populating this information in MSATS. More value if this is kept externally to MSATS.	AEMO notes the respondent's support for the proposed change.
86.	United Energy	United Energy agrees to not add CT/VT serial number fields.	AEMO notes the respondent's support for the proposed change.
87.	Vector Metering	No, we believe CT/VT serial numbers should be maintained where possible; Should good data modelling practise dictate that these should be in a separate CATS table then we support this as well;	AEMO refers to the response in Table 2, Item 77.

Table 3 Register level Information

No.	Consulted person	Comment	AEMO response
Q13 Do you agree with amending the fields Controlled Load and Time of Day to include enumerated list of values? If Yes, what values can be in the enumerated list for the fields: - Controlled Load - Time of Day			

No.	Consulted person	Comment	AEMO response
1.	AGL	Yes Controlled Load needs to contain sufficient information to support Tariff application as well as the changes required for the implementation of the Demand Response market. The MSATS enumerations should also be reflected in the B2B Enumerations to ensure a consistent application of information through the market. Eg: • External – Customer • External – Network Control device • External – Other • Internal - Time Control • Internal - Network Control • Internal - Other Time of Day AGL supports enumerated lists to simplify data management and ensure valid information is loaded to MSATS	AEMO notes the respondent's support for the proposed change and suggestion, and refers to the list values provided in section 5.2 of this draft report.
2.	Alinta Energy	Alinta Energy supports the changing of the Controlled Load and Time of Day fields to an enumerated list of values. The Controlled Load enumerated list should be consistence with the B2B enumerations.	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
3.	Aurora Energy	Aurora Energy agrees with AEMO's statement • Controlled Load • Time of Day	AEMO notes the respondent's support for the proposed change.
4.	Ausgrid	Agree. Controlled load – No, CL1, CL2, Other The Network tariff code can also be used to determine if controlled load is allocated to the register.	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
5.	AusNet Services	AusNet Services does not support the following amendments proposed by AEMO. - The field 'ControlledLoad' amended from being free text to an enumerated list. There is no defined benefit in providing this information in Victoria where the MPB = LNSP.	As the majority of participant responses supported the amendment of the fields, AEMO intends to amend the fields by defining an enumerated list of values for those fields.

No.	Consulted person	Comment	AEMO response
		- The field 'TimeofDay' amended from being free text to an enumerated list. There is no defined benefit in providing this information in Victoria where the MPB = MC = LNSP.	
6.	CitiPower Powercor	CitiPower Powercor does not agree with amending these fields as the amendments do not create any benefit for the distributor. Load control could be dynamically controlled by distributor's which would make these amendments redundant.	AEMO refers to the response in Table 3, Item 5
7.	Endeavour Energy	We agree with AEMO to change the Controlled Load and Time of Day fields to enumerated fields. We suggest that the Controlled Load field should include the values of 'No', 'CL1' and 'CL2'. These values are required to support the scenario where the metering provider provides controlled load functionality via their meter. In this scenario the metering provider is responsible for configuring the meter for a particular controlled load setting and therefore needs to communicate this setting. In addition to a value of 'ALLDAY', we suggest that the Time of Day field should also include the values of 'PEAK', 'SHOULDER' and 'OFFPEAK'. These values are required to support an accumulation meter with time of use capability. We note that currently the values expected for the Time of Day field for an interval meter is "INTERVAL'. For consistency we suggest that the value of 'INTERVAL' not be included as an enumerated value and that 'ALLDAY', if applicable, be used instead for an interval meter. We believe that the information for the Controlled Load and Time of Day are mutually exclusive, that is if the register is not measuring controlled load then it must be measuring something else as described in the time of day field. Therefore for consideration, the Controlled Load field could be eliminated and the enumerated values for this field be included in the Time of Day field, except for the value of 'No'.	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
8.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex agree in relation to the Controlled Load Field. However, we seek clarity on whether data is required to be updated in relation to legacy basic meters. Ergon Energy Network and Energex use the Time of Day field to determine the peak, off-peak, and shoulder rates.	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report. AEMO notes data transition to the new and amended fields needs to occur and have included in section 4.10 of this draft report as a series of questions to help AEMO define the data transition plans.

No.	Consulted person	Comment	AEMO response
9.	EnergyAustralia	– Controlled Load POOL PUMP HOT WATER SLAB HEATING Other suitable appliances – Time of Day AEDT, AEST, ACDT.	AEMO notes the respondent's suggestion and refers to the list values provided in section 5.2 of this draft report. AEMO notes the market only operates in EST – Eastern Standard Time.
10.	ERM Power	Yes, we do support the field, but we need to understand the proposed enumerated field values. Please provide examples of the values.	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
11.	EvoEnergy	Agree to amendments Proposed Controlled Load values No CL1 CL2 CL3 Proposed Time of Day values INTERVAL PEAK BUSINESS SHOULDER EVENING OFFPEAK ALLDAY CONTROLLED	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
12.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
13.	Metering Dynamics	Yes. In relation to: • controlled load, the value should reference Yes, No; and • Time of Day - All Day, Peak, Off Peak, Shoulder, Interval.	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
14.	Origin Energy	Yes, Origin agrees with amending the fields, Controlled Load and Time of Day, to include enumerated list of values. The values should identify/differentiate between Ripple, Time of Day, Internal and External	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
15.	PLUS ES	PLUS ES supports amending the fields and enumerating them. - Controlled Load – Yes, No, External - Time Of Day – Interval, Peak, Shoulder, Off Peak, Demand, Capacity, CL1, CL2, CL3, CLS*, Other *CLS = Controlled Load Special. Network Tariff would advise the type of Controlled Load.	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
16.	Powerlink Queensland	We agree to amend these fields to be enumerated. For WIGS NMIs we would use the following enumerations. Controlled Load: NO, CL1, CL2 Time of Day: INTERVAL	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
17.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
18.	Red Lumo	Red and Lumo support amending the fields and including enumerated lists.	AEMO notes the respondent's support for the proposed change.
19.	SA Power Networks	SA Power Networks support these proposed changes.	AEMO notes the respondent's support for the proposed change.
20.	TasNetworks	TasNetworks strong preference would be for both of these fields to remain unchanged.	AEMO refers to the response in Table 3, Item 5.
21.	United Energy	United Energy does not agree with amending these fields as the amendments do not create any benefit for the distributor. Load control could be dynamically controlled by distributor's which would make these amendments redundant.	AEMO refers to the response in Table 3, Item 5.

No.	Consulted person	Comment	AEMO response
22.	Vector Metering	yes, however it would need to reflect all published DNSP CL schemes, not just CL1 and CL2- Note: Current NTC do not necessarily reflect the time settings programmed at the site. DB's have confirmed that in some instances you have no way of knowing the legacy switching arrangements until you visit site and look at the time switch settings; Customers are entitled to keep these switching times under the DNSP's connection arrangements even where the meter has been replaced. Lack of clarity on the switching times can lead to customers having periods with no hot water or dedicate circuits being energised outside published switching times resulting in higher bills for customers as their devices consume energy outside the tariffs designated times. Placing these values into an enumerated value needs to be carefully considered because could create a barrier to accurately represent any new switching products. If a party introduces a new scheme/program, then there would need to be an update to the enumerated list – this could create an environment where the data becomes inaccurate as business avoid having to go through this process. Time of Day should be removed for Interval meters. It is concept that is not relevant to an interval Data Stream;	AEMO notes the respondent's support for the proposed change and refers to the list values provided in section 5.2 of this draft report.
Q14 Do you agree with AEMO's proposal to remove the following fields? - Demand1 - Demand2 - Network Additional Information			
23.	AGL	AGL supports the proposal to cleanse the data and implement enumerated lists, noting that there are currently many versions of demand and more are expected over time.	AEMO notes the respondent's comment and as the majority of respondent feedback supports the removal of Demand1 and Demand2, AEMO intends to remove these fields.
24.	Alinta Energy	Alinta Energy supports the removal of the MSATS fields.	AEMO notes the respondent's support for the proposed change.
25.	Aurora Energy	Aurora Energy agrees with AEMO's proposal	AEMO notes the respondent's support for the proposed change.
26.	Ausgrid	Agree.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
27.	AusNet Services	AusNet Services supports the removal of the following fields. - Demand1 - Demand2 - NetworkAdditionalInformation	AEMO notes the respondent's support for the proposed change.
28.	CitiPower Powercor	CitiPower Powercor supports AEMO's proposal.	AEMO notes the respondent's support for the proposed change.
29.	Endeavour Energy	We agree with the suggested fields to be removed. We note that these fields are network tariff related fields, with the demand fields rarely used and the additional information field only used to provide the name of the network tariff code.	AEMO notes the respondent's support for the proposed change.
30.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex do not support the removal of the Network Additional Information field. However, Demand1 and Demand 2 can be removed.	AEMO notes the respondents comment and some respondents have indicated they use and gain benefit from having the field Network Additional field. AEMO intends to remove the Demand1 and Demand2 fields and explore the need for keeping the existing field of Network Additional Information in section 4.7 of the draft report.
31.	EnergyAustralia	EnergyAustralia supports AEMO's proposal to remove the fields.	AEMO notes the respondent's support for the proposed change.
32.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change.
33.	EvoEnergy	Agree	AEMO notes the respondent's support for the proposed change.
34.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
35.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
36.	Origin Energy	These fields would have added value but would need to be extended to cope with rolling 12 month demand. If not, then they can be removed. Origin seeks clarification if these fields will this information be stored in any other fields moving forward?	AEMO notes it is not viable to have these fields extended to cope with rolling 12 month demand, and the number will not be stored elsewhere, Network Tariff will identify if

No.	Consulted person	Comment	AEMO response
			demand exists for that site. In addition, AEMO refers to the response in Table 3, Item 30.
37.	PLUS ES	PLUS ES supports the proposed removal of these fields.	AEMO notes the respondent's support for the proposed change.
38.	Powerlink Queensland	We agree with removal of the Demand1 and Demand2 fields. We currently store information in the Network Additional Information field which identifies the substation and whether it is on the Revenue or Check meter. We agree that this field could also be removed as this information can also be found in the Additional Site information/Meter Location and meter use field of the associated meter.	AEMO refers to the response in Table 3, Item 30.
39.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
40.	Red Lumo	Red and Lumo do not support the removal of Network Additional Information. Removal of this will increase costs in the long run as any additional matters can be added here instead of requiring a schema change.	AEMO refers to the response in Table 3, Item 30.
41.	SA Power Networks	SA Power Networks support the removal of fields.	AEMO notes the respondent's support for the proposed change.
42.	TasNetworks	Partly, Network Additional Information is used by TasNetworks is used to populate basic meter register circuit information and the meter tariff code. There is no other field suitable to provide this information. TasNetworks agree to removing the demand fields.	AEMO refers to the response in Table 3, Item 30.
43.	United Energy	United Energy supports AEMO's proposal.	AEMO notes the respondent's support for the proposed change.
44.	Vector Metering	Agreed to remove Demand and Network Additional Information Fields;	AEMO notes the respondent's support for the proposed change.

Table 4 Connection and Metering point Details

No.	Consulted person	Comment	AEMO response
Q15 Do you agree with the proposal to include the Connection Configuration field as described above? Why/why not?			
1.	AGL	AGL supports this proposal as it can be used as a validation check on other information available.	AEMO notes the respondent's support for the proposed change.
2.	Alinta Energy	Alinta Energy supports the inclusion of a Connection Configuration field. This field will allow for a quick assessment of what configuration of the connection point is. Alinta Energy proposes that a fifth character is considered, for Expected energy flows. • B - if bi-directional energy flow • I – for Energy flowing from the Customer to the Network • E – for Energy flowing from the network to the customer.	AEMO notes the respondent's support for the proposed change.
3.	Aurora Energy	Aurora Energy agrees with AEMO's proposal – This will help clarify what is on site – We would also like to reconsider "Shared Isolation Points Flag" and while this may only be added post a site visit will be help when identify requirements for other site visits	AEMO notes the respondent's support for the proposed change and refers to the responses in Table 5.
4.	Ausgrid	No, this information can be derived from other fields, such as meter make and model, number of meters and associated network tariffs. There would be difficulty in determining if a site has 2 or 3 phases. Installations in Ausgrid's network contain the following problematic examples: • Poly phase metering, 2 and 3 phase meters, and these are not identified as which is 2 or 3 phase; • Site that have 2 phases with a single phase meter on each phase (one phase Domestic tariff, other phase CL tariff).	AEMO notes the respondent's comments however the majority of respondent feedback supports the introduction of this field. AEMO intends for the field to capture the NMI's capability at an asset level, not the meter level. AEMO notes that not all meter make and model, number of meters and associated network tariffs will provide this information. The information captured in this configuration field will provide for incoming MCs and retailers to efficiently manage churned sites.
5.	AusNet Services	AusNet Services does not support the inclusion of the Connection Configuration field. The information is either already known by the parties who need to know it (including the customer) or can be easily inferred by other standing data fields. However, if this field is to be included, AusNet Services proposes that the data within the field only becomes 'Required' for new meter installs as of May 2022 onwards.	AEMO notes the respondent's comment and refer to the response in Table 4, Item 4. AEMO will allow for a transition period to update the information in this field after which time the field will be Mandatory including for legacy meters.
6.	CitiPower Powercor	CitiPower Powercor supports AEMO's proposal.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
7.	Endeavour Energy	We agree with adding the Connection Configuration field as it provides key information about the metering installation. It should be made clearer that the code for the 'Phases in Use' field is at the metering installation level and not the meter level. We suggest that the Connection Configuration field be captured at a metering installation level and not at the meter level, therefore this field should not be part of the meter-register table. See our feedback on 'separate metering installation fields from metering fields' below for more detail.	AEMO notes the respondent's support for the proposed change and intends for the field to capture the NMI's capability at an asset level, not the meter level. AEMO agrees with the recommendation and has changed the proposed field from the meter register table to the NMI Data table and assigned the field to the LNSP to provide the data.
8.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex do not see the benefit of this information being populated in MSATS. We seek clarity on whether the MPB is expected to update all existing sites to this new configuration, and if yes, how the MPB will know this information?	AEMO notes the respondent's comment and refer to the response in Table 4, Item 4.
9.	EnergyAustralia	Yes, it provides a simple/basic view of the configuration at the site. It is expected that participants could review the connection configuration field as an initial assessment, depending on the configuration further review would be required (i.e. if CT/VT were present).	AEMO notes the respondent's support for the proposed change.
10.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change.
11.	EvoEnergy	Agree, as it would provide relevant information to the new MPB before attending a site to exchange a meter, thus reduce costs. Must also include in C7 report.	AEMO notes the respondent's support for the proposed change. AEMO agrees with the recommendation to include this field in the C7 report.
12.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
13.	Metering Dynamics	Yes. However, we seek clarification on how this field will be populated. For example, would it form part of the CR30xx transactions for an MP or would it be its own transaction. In addition, we consider that validation between this field for CT/VT Present and the Metering InstallationTransformer Information fields may add value. For example, if Connection Configuration indicates CT/VT present, Metering InstallationTransformer Information must be populated.	AEMO notes the respondent's support for the proposed change comment and refer to the response in Table 4, Item 4. AEMO will review the options for validations on the suite of standing data.

No.	Consulted person	Comment	AEMO response
14.	Origin Energy	Yes, Origin agrees with the proposal to include the Connection Configuration field as it will allow retailers to appropriately take action when churning meters as well as reduce wasted visits in the field. Origin also seeks confirmation if information regarding whether a site has solar or a battery will be included?	AEMO notes the respondent's support for the proposed change. AEMO does not intend to include solar or battery in this configuration.
15.	PLUS ES	PLUS ES agrees with the objective of this field, however not in the form that it is presented. It is suggested that the enumeration could be simplified into a code with a description and reducing some of the details that could be difficult to ascertain. PLUS ES proposes the following enumeration, believing it would achieve most of the benefits of the AEMO proposed fields whilst minimising its complexity and cost of maintenance: • Low Voltage Direct Connected • Low Voltage CT Connected • High Voltage CT & VT Connected The 'number of phases' is excluded, as it is difficult to ascertain accurately in some direct connected cases, where there may be some nuances that are difficult to enumerate. i.e. a two-phase supply fed from a three-phase network - metering achieved with two single phase meters.	AEMO notes the respondent's support for the objective of the proposed change. AEMO intends to have one field to efficiently provide the connection configuration and refer to the response in Table 4, Item 7.
16.	Powerlink Queensland	We don't agree that this field should be included for WIGS NMIs as it will be always the same, thus providing no value.	AEMO notes the respondent's comment and refer to the response in Table 4, Item 4.
17.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
18.	Red Lumo	Red and Lumo agree that this information is beneficial. However, it is more valuable with each component to have its own separate field to make the processing and querying of this information simpler and more accurate. For example, where there are only two options (shared fuse), it could be fulfilled with a Y/N flag. Again, this field should be populated upon creation by the DNSPs. Optionality for this field will render it useless.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 4, Item 15.
19.	SA Power Networks	SA Power Networks support this proposed change.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
20.	TasNetworks	No. TasNetworks don't believe there is sufficient value in this information being populated in MSATS.	AEMO notes the respondent's comment and refer to the response in Table 4, Item 4.
21.	United Energy	United Energy supports AEMO's proposal.	AEMO notes the respondent's support for the proposed change.
22.	Vector Metering	Phase in Use seems to be describing characteristics of the supply to the premise. The Meter Register table contains information about the meter, not the Supply. There can be numerous meters at a connection – mixture of 3 phase and single phase; Use of a combined field to represent the configuration has no benefit over individual fields; We support the use of individual fields; The below fields are recommended and reflect the key configuration at a site for the Meter. • Meter Connection type should be "Whole Current connected" or "Transformer connected"; • Meter Type should indicate "Single Phase" or "3 Phase"; • Transformer type should indicate Low Voltage (CT) or High Voltage (VT);	AEMO notes the respondent's comment and refer to the response in Table 4, Item 7.
Q16 Are there any connection configurations that could not be contained in the above Connection Configuration field?			
23.	AGL	AGL notes that there are certain components of the connection configuration which would not be available in this Configuration field. For example – a 2-phase connection most likely has 3-phase cable. A 2-phase connection may have a 3-phase meter. Should this configuration be both the connection information and the asset information as separate information, which may mean a longer field: Eg a 2-phase connection L2NN, might be extended to L2NN33, where the 3 represents the service capability and the second 3 represents the meter capability.	AEMO intends for the field to capture the NMI's capability at an asset level, not the meter level and refer to the responses in Table 4, Items 4 and 7. Configuration at the meter level remains a separate decision and separate data.
24.	Alinta Energy	Alinta Energy does not believe that it is best placed to provide AEMO with this advice and will defer to the LSNP's for this information.	AEMO notes the respondent's comment.
25.	Aurora Energy	Aurora Energy does not believe so	AEMO notes the respondent's comment.
26.	Ausgrid	No	AEMO notes the respondent's comment.
27.	AusNet Services	AusNet Services believes that 'SWER' – Single Wire Earth Return might not be able to be contained in the Connection Configuration field and nor should it be contained in	AEMO notes the respondent's comment. AEMO intends for the field to capture the NMI's capability at an asset

No.	Consulted person	Comment	AEMO response
		an MSATS field. It is only relevant to the customer when the customer is negotiating an alteration to their connection point with the Distribution Network Service Provider.	level, not the network level. SWER is at the network level and is not intended to be included in this field.
28.	CitiPower Powercor	CitiPower Powercor does not have any other meaningful configurations that are justified for inclusion.	AEMO notes the respondent's comment.
29.	Endeavour Energy	No, we believe that all metering installations can be described by this new Connection Configuration field.	AEMO notes the respondent's comment.
30.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex believe that the connection configurations have been captured adequately.	AEMO notes the respondent's comment.
31.	EnergyAustralia	EnergyAustralia believes that the connection configurations in the field represent the majority of configurations. Any remaining configuations not covered are generally highly convoluted and in many cases non-compliant.	AEMO notes the respondent's comment.
32.	ERM Power	No	AEMO notes the respondent's comment.
33.	EvoEnergy	What do you do if there are multiple meters at a NMI with different connection arrangements? E.g. 1 phase and 3 phase; WC meter and CT meter.	AEMO intends for the field to capture the NMI's capability at an asset level, not the meter level. Phase is the description of the connection, not the meters. Configuration at the meter level remains a separate decision and separate data.
34.	Intellihub	N/A	AEMO notes the respondent's comment.
35.	Metering Dynamics	No	AEMO notes the respondent's comment.
36.	Origin Energy	No comment	
37.	PLUS ES	PLUS ES has no comment.	
38.	Powerlink Queensland	This information could be very complex. We suggest this is better covered off in the NMI application.	AEMO intends for the field to capture the NMI's capability at an asset level and the nominated configurations are standard across all of industry.
39.	Powermetric	No	AEMO notes the respondent's comment.

No.	Consulted person	Comment	AEMO response
40.	Red Lumo	No comment at this time	
41.	SA Power Networks	SA Power Networks had not Identified any additions.	AEMO notes the respondent's comment.
42.	TasNetworks	As above.	AEMO notes the respondent's comment.
43.	United Energy	United Energy does not have any other meaningful configurations that are justified for inclusion.	AEMO notes the respondent's comment.
44.	Vector Metering	See 15.	AEMO notes the respondent's comment.

Table 5 Shared Isolation Points Flag Field

No.	Consulted person	Comment	AEMO response
Q17 Are the values sufficient? What additional information should be provided, and how could it be validated?			
1.	AGL	While the identification of shared isolation is very valuable, without the GIS information or a suitable link, the field itself simply becomes an alert that there is a shared fuse. Without identifying the NMIs which are linked to the same fuse, the processing of the work will still require a physical visit to scope the site, however this is still more efficient than attending site and cancelling work.	AEMO notes the respondent's support for the proposed change and notes the comments on premises location and linkage to other NMIs. AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
2.	Alinta Energy	Alinta Energy supports the proposed Y, N and Unknown.	AEMO notes the respondent's support for the proposed change.
3.	Aurora Energy	Aurora Energy would like to see the number of shared points affected, however understand that this is hard to validate and does not help identify the other sites who share the fuse	AEMO notes the respondent's comment.
4.	Ausgrid	Yes, guidelines need to be developed in the use and maintenance of this field. If a site is 'Unknown' or 'Yes', and a meter is exchanged and shared fuse removed (for that particular NMI), the MPB should update this field to 'No'.	AEMO notes the respondent's support for the proposed change and agrees that guidelines and appropriate procedure changes following the finalisation of the AEMC's Introduction of metering coordinator planned

No.	Consulted person	Comment	AEMO response
			interruptions Rule Change ERC0275 will need to be provided for this field.
5.	AusNet Services	AusNet Services proposes to Include 'Unknown' as an additional value in this field, as per the Issue Paper. The Issues Paper stated that "Unknown" would be a suitable value for this field as the AEMC has no expectation that the LNSP perform field visits to obtain this information proactively, however in Table 4 CATS_METER_REGISTER - Browser cross reference the Browser Format only stipulates 'CHAR(2)'. This table needs to be updated to reflect the advice provided by the AEMC.	AEMO notes the respondent's support for the proposed change and notes that the field could be populated with Y (Yes), N (No) or U (Unknown). AEMO has changed the proposed field from the meter register table to the NMI Data table and assigned the field to the LNSP to provide the data. AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
6.	CitiPower Powercor	CitiPower Powercor strongly recommends that only a Yes or blank is required. We believe that authenticating or updating the No's will create unnecessary work without achieving any benefit. If the field is blank it should be assumed that shared isolation does not exist	AEMO notes the respondent's suggested values. AEMO intends to use Yes, No and Unknown as a Mandatory field cannot contain blanks. AEMO intends to include the option of Unknown as it is appropriate rather than guessing Yes or No.
7.	Endeavour Energy	Yes, we believe that the 3 proposed values are sufficient.	AEMO notes the respondent's support for the proposed change.
8.	Energy Queensland - Energex and Ergon Energy Network	In general terms, Ergon Energy Network and Energex agree with this field. The LNSP, while being able to update the field initially, would require the MP to maintain the data in this field as they install Meter Isolation Links as part of any ongoing work at a site.	AEMO notes the respondent's general support for the proposed change.
9.	EnergyAustralia	Yes, the basic enumerations are acceptable. Identification of shared fusing prior to attending site will limit any NACKing of service orders. Additional information on how to rectify the shared isolation point would need to be determined via a site visit, or via discussions with the distributor; as the configurations are too diverse and complicated to document in MSATS.	AEMO notes the respondent's support for the proposed change.
10.	ERM Power	Yes – The value should be Yes or No only, otherwise, it defeats the purpose.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
11.	EvoEnergy	Yes	AEMO notes the respondent's support for the proposed change.
12.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
13.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
14.	Origin Energy	The values should be Y/N or Blank for Unknown. AEMO should consider a method for linking all shared supply points together (such as a code that applies to all the NMI's on the same shared supply) to reduce overall industry cost in needing to maintain this data. There also needs to be a clear understanding on who will update/maintain this information i.e. DNSP or MP.	AEMO notes the respondent's suggested values. AEMO intends to use Yes, No and Unknown as a Mandatory field cannot contain blanks. AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
15.	PLUS ES	Single point of isolation / Shared fuse is a historical issue which now is being addressed following deregulation. There are process driven and cost efficiencies to be gained if a NMI with a shared isolation point is identified. LNSPs are the best positioned to update the information against the NMI and more comprehensively against all the NMIs of a site with shared fuses as they are the common participant. An MPB/MC may not be the participant for all the NMIs.	AEMO notes the respondent's suggestions and agrees that this should be a field at the NMI level provided by the LNSP. Any MPs that identify shared fusing should advise the LNSP to ensure the data is updated in MSATS. AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
16.	Powerlink Queensland	No value for TNSPs for WIGS NMIs, this is covered off in the application and drawing updates.	AEMO notes the respondent's comment. AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
17.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
18.	Red Lumo	No comment at this time	
19.	SA Power Networks	If this change is imposed on the industry by the AEMC, then the current values are sufficient. These changes should not proceed unless mandated via the AEMC final determination linked to the MC Planned Interruption consultation.	AEMO notes the respondent's comment about the field being sufficient.

No.	Consulted person	Comment	AEMO response
			AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
20.	TasNetworks	TasNetworks believe this fields should be included in the CATS NMI DATA table instead of CATS METER REGISTER. The suggested values may be sufficient, but this issue will require further consultation with the industry to understand the business processes surrounding it.	AEMO notes the respondent's suggestions and agrees that this should be a field at the NMI level provided by the LNSP. AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
21.	United Energy	United Energy strongly recommends that only a Yes or blank is required. We believe that authenticating or updating the No's will create unnecessary work without achieving any benefit. If the field is blank it should be assumed that shared isolation does not exist.	AEMO notes the respondent's suggested values and refers the response in Table 5, Item 6.
22.	Vector Metering	Shared Fuse should reflect whether this Connection Point (NMI) can be independently isolated without impacting any other NMI. The only values required would be yes or no; Obviously all new meter installations will be able to be independently isolated so these will have a value of 'Yes' . The issue will be legacy metering. MP's should be obligated to determine a sites status. If this does occur then this flag will be of little value; By calling this field 'Shared Fuse' it is not immediately obvious what this represents. Suggest calling the field 'Can be independently isolated' flag or the CBII flag. This field should not be on the CATS_METER_REGISTER entity but should be on the CATS_NMI_DATA as it represents the status of the connection point or NMI and not an individual meter;	AEMO notes the respondent's suggestions and agrees that this should be a field at the NMI level provided by the LNSP. AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
Q18 Should "Unknown" be able to be changed into "Yes" / "No"?			
23.	AGL	The only value which is meaningful is Yes or No, which are definitive statements. Unknown is not definitive and has no value. Requiring unknown means this field has to be populated and then amended. Yes and No clearly identify that some sort of site visit has been undertaken. In both cases, the criteria and responsibility for updating this field needs to be clear.	AEMO intends to include the option of Unknown as it is appropriate rather than guessing Yes or No. AEMO agrees that updates should occur from Unknown to Yes/No but not the reverse.

No.	Consulted person	Comment	AEMO response
			AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
24.	Alinta Energy	Alinta Energy supports that this is a mandatory field and understands that there may be many sites with an "Unknown" status initially, however when the LNSP becomes aware of the status either through notification from other participants or other means, then there should be an expectation for this information to be updated and the Unknown be changed to a Y or a N.	AEMO notes the respondent's support for the inclusion of Unknown. AEMO agrees that updates should occur from Unknown to Yes/No but not the reverse.
25.	Aurora Energy	Yes	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
26.	Ausgrid	Yes, and 'Yes'/'No' to 'unknown' if it is incorrectly populated.	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
27.	AusNet Services	As the new 'SharedFuse' field is Mandatory, the use of "Unknown" will be used as the default position for the LNSP until a site visit occurs and a shared fuse scenario can be confirmed. Parties should not be required to guess whether a shared fuse is present when a site inspection is required to identify shared fusing. Where a site is flagged as "Unknown" the LNSP or metering provider should be able update the field to "Yes"/ "No". The LNSP or metering provider should be permitted to update related standing data without updating the status of the "shared isolation points flag field." That is, validation should not preclude the population of Unknown. Not all updates to standing data occur after a site visit.	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
28.	CitiPower Powercor	CitiPower Powercor strongly recommends that only a Yes or blank is required. We believe that authenticating or updating the No's will create unnecessary work without achieving any benefit. If the field is blank it should be assumed that shared isolation does not exist.	AEMO notes the respondent's suggested values and refers the response in Table 5, Item 6.
29.	Endeavour Energy	Yes, we believe that the value should be allowed to change to any other allowable value including from 'unknown' to either 'yes' or 'no.	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.

No.	Consulted person	Comment	AEMO response
30.	Energy Queensland - Energex and Ergon Energy Network	Yes	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
31.	EnergyAustralia	Yes. if 'unknown' is available, all sites will be flagged this way. Limiting the choices will put some onus on distributors to provide the information.	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
32.	ERM Power	Yes – Enforce Yes/No value.	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
33.	EvoEnergy	Yes when newer information becomes available.	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
34.	Intellihub	Yes. What is the mechanism for changing the status of the flag if the LNSP is responsible for it but the MC/MP finds the site configured differently or installs a meter isolation link which means the sites shared isolation point status changes?	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24. AEMO notes that communication between the MC/MP would need to be developed to enable the LNSP to maintain an accurate record.
35.	Metering Dynamics	Yes	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
36.	Origin Energy	Yes, as per response for question 17, on site visit or becoming aware of the shared fuse it should be updated to yes or no (required).	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
37.	PLUS ES	PLUS ES suggests the ability to update Unknown to Yes/No should be available, including the ability to amend the Yes to a No and vice versa. However further requirements of these fields have a dependency on the MC Planned Outage determination. This has been delayed until 21 May 2020.	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24. AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.

No.	Consulted person	Comment	AEMO response
		Given that the submissions on the draft report are due on the 22 May 2020, PLUS ES recommends that AEMO considers an extension to this date to allow participants to review the final rule and incorporate feedback as applicable into their submission.	AEMO has delayed the timing of responses to this draft report.
38.	Powerlink Queensland	Yes, but if possible should not be able to change to unknown.	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
39.	Powermetric	Yes	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
40.	Red Lumo	Yes	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
41.	SA Power Networks	SA Power Networks be that "Unknown" should be kept and used for day 1.	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
42.	TasNetworks	Yes	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.
43.	United Energy	United Energy strongly recommends that only a Yes or blank is required. We believe that authenticating or updating the No's will create unnecessary work without achieving any benefit. If the field is blank it should be assumed that shared isolation does not exist.	AEMO notes the respondent's suggested values and refers the response in Table 5, Item 6.
44.	Vector Metering	MP's responsible for legacy metering should be required to reflect the status on all meters; Given that these meters are visited every 3 months for reading MDP can advise the MP of the status and MSATS can be updated to accurately reflect the NMI status;	AEMO notes the respondent's support for the inclusion of Unknown and refers to the responses in Table 5, Items 23 and 24.

Table 6 Metering Installation Location Information

No.	Consulted person	Comment	AEMO response
Q19 Do you support the deletion of Additional Site Information?			
1.	AGL	AGL supports the use of GPS coordinates for meter and CT locations, but notes that for high rise and shopping centres, GPS may not be adequate or suitable. This field may be useful for those situations where it is not possible to use GPS coordinates or for supporting information, such as associated with UMS connections, where the connection point may be very different to the device location or high rises.	The majority of respondents support the deletion of the Additional Site Information field and incorporating the information it has previously provided into an increased character length Meter Location field. Accordingly, AEMO intends to remove the Additional Site Information field and increase the character length available for the Meter Location field.
2.	Alinta Energy	Alinta Energy supports the removal of the MSATS fields	AEMO notes the respondent's support for the proposed change.
3.	Aurora Energy	Aurora Energy agrees with AEMO's proposal	AEMO notes the respondent's support for the proposed change.
4.	Ausgrid	Yes.	AEMO notes the respondent's support for the proposed change.
5.	AusNet Services	AusNet Services supports the deletion of the Additional Site Information field.	AEMO notes the respondent's support for the proposed change.
6.	CitiPower Powercor	CitiPower Powercor supports this deletion.	AEMO notes the respondent's support for the proposed change.
7.	Endeavour Energy	Yes, we agree that the Additional Site Information field can be deleted after extending the number of characters for the Meter Location field from 50 to 200 and moving any existing data from the Additional Site Information field to the Meter Location field.	AEMO notes the respondent's support for the proposed change.
8.	Energy Queensland - Energex and Ergon Energy Network	Yes	AEMO notes the respondent's support for the proposed change.
9.	EnergyAustralia	EnergyAustralia supports the removal of Additional Site Information, dependent on the addition of GPS coordinates at the meter level.	AEMO notes the respondent's support for the proposed change and dependencies with other proposed field changes.

No.	Consulted person	Comment	AEMO response
		We do not support the removal of any field that will not be adequately replaced by additional fields or amendements to current fields.	
10.	EvoEnergy	Yes	AEMO notes the respondent's support for the proposed change.
11.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
12.	Metering Dynamics	Yes, subject to the Hazard and Meter Location fields being increased in size in order to handle additional information.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 6, Item 1.
13.	Origin Energy	Origin does not support the deletion of Additional Site Information. Whilst GPS coordinates is good for location, DNSP's may have additional information in their own internal systems which assists them with locating a site. Having this information available will assist in reducing wasted visits. There is also value in adding this field in the MP C7 report.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 1.
14.	PLUS ES	PLUS ES supports the deletion of the Additional Site Information.	AEMO notes the respondent's support for the proposed change.
15.	Powerlink Queensland	WE don't support the deletion of the Additional Site Information field. We already have it populated for most of our Meters, however the same information we put in it could be in the meter location field.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 1.
16.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
17.	Red Lumo	Red and Lumo value the information provided in this field. However, Red and Lumo would support having the various pieces of information stored in their own structured fields.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 1.
18.	SA Power Networks	SA Power Networks support the removal of field.	AEMO notes the respondent's support for the proposed change.
19.	TasNetworks	TasNetworks preferred solution would be for this field to remain, however this change could be accommodated.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 1.
20.	United Energy	United Energy supports this deletion.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
21.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change.
Q20 Are there any pieces of information that would be useful to explicitly flag for inclusion in the Meter Location field? (these can be included in the definition of the field)			
22.	AGL	AGL leaves this feedback to the metering businesses.	AEMO notes the respondent's comment.
23.	Alinta Energy	No further info needs.	AEMO notes the respondent's comment.
24.	Aurora Energy	Something like FLS (front left side) FRS (front right side) Free hand text is still useful as AE do use the location in their billing system and is provided by TasNetworks	AEMO notes the respondent's comments and will consider the respondent's possible values in the description of Meter Location.
25.	Ausgrid	Where the metering is not located in an obvious position.	AEMO notes the respondent's comments and will consider the respondent's possible values in the description of Meter Location.
26.	AusNet Services	AusNet Services has not identified any additional information required to be included in the Meter Location field definition.	AEMO notes the respondent's comment.
27.	CitiPower Powercor	CitiPower Powercor does not hold a position on this matter.	AEMO notes the respondent's comment.
28.	Endeavour Energy	No, we believe that it is sufficient to define the Meter Location field to be a free text field used to describe the location of the meter or how to access the meter.	AEMO notes the respondent's comment.
29.	Energy Queensland - Energex and Ergon Energy Network	No	AEMO notes the respondent's comment.
30.	EnergyAustralia	No	AEMO notes the respondent's comment.
31.	EvoEnergy	No comment	AEMO notes the respondent's comment.
32.	Intellihub	Not specifically since all the data in the additional site information field will be transferred to the meter location.	AEMO notes the respondent's comment.
33.	Metering Dynamics	No	AEMO notes the respondent's comment.

No.	Consulted person	Comment	AEMO response
34.	Origin Energy	This would be useful with GPS coordinates to give an indication of how to locate the meter.	AEMO notes the respondent's comment and refer to the responses provided to Questions 21 to 27 on GPS coordinate in Table 6.
35.	PLUS ES	PLUS ES assumes that Meter Location field referenced is the Location field in Standing Data for MSATS doc. It is when meters are hidden from view or not located where you would expect them to be that the information proves valuable; such as in an outbuilding: barn, shed, dairy building or near the dam of the property or in the basement of a building.	AEMO notes the respondent's assumption is correct.
36.	Powerlink Queensland	For meters located in a substation the substation name and the asset it's metering.	AEMO notes the respondent's comments and will consider the respondent's possible values in the description of Meter Location.
37.	Powermetric	No	AEMO notes the respondent's comment.
38.	Red Lumo	No comment at this time	
39.	TasNetworks	No.	AEMO notes the respondent's comment.
40.	United Energy	United Energy does not hold a position on this matter.	AEMO notes the respondent's comment.
41.	Vector Metering	No;	AEMO notes the respondent's comment.
Q21 Does your organisation support the mandatory provision of GPS coordinates for all rural sites?			
42.	AGL	AGL supports the use of GPS coordinates for meter and CT locations, but notes that for high rise and shopping centres, GPS may not be adequate or suitable.	To improve the ease of meter location, particularly in rural locations, AEMO intends for the GPS coordinates field to be established. AEMO will allow for a transition period of one year to update the information in this field after which time the field will be Mandatory. During the transition period the field will be 'Required'. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
43.	Alinta Energy	Alinta Energy supports the capturing of GPS coordinates for all installation.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs.

No.	Consulted person	Comment	AEMO response
			AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
44.	Aurora Energy	Aurora Energy agrees with AEMO's proposal however we are unsure who would provide this data the LNSP or MC?	AEMO notes the respondent's support for the proposed change and note the MP should provide these coordinates. In the case of Type 5 or 6 metering, this would be the distributor in their role as the MP.
45.	Ausgrid	Yes, but should be a required field not mandatory. Ausgrid currently store GPS coordinates for sites, however this is normally 10 metres into the property from the point of common coupling.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 42.
46.	AusNet Services	AusNet Services does not support the mandatory provision of GPS coordinates for rural sites in Victoria where the MPB = MC = LNSP, where metering contestability is not permitted under electricity law. Aside from adding no benefit in Victoria. The cost associated with providing this information is extremely high for an MPB. Has a cost benefit analysis been conducted by AEMO for this field to be included into the Consultation? Why can't the customer self-identify their google maps coordinates to the retailer coordinating the meter change? Surely this is cheaper than the cost of a site visit to every meter in rural area and causes less distress to customers than seeing a MPB or DNSP staff member at their meter box. Once a remotely read meter is installed customers generally expect it to be left alone, unless it fails. AEMO is surely not prepared to answer phone calls from customers asking why there a metering staff member at their meter box. AusNet Services proposes this field be removed from the Consultation and a separate ICF be raised by the proponent of this change.	AEMO notes the respondent's comments and refer to the response in Table 6, Item 42. AEMO's assessment is that the benefits of providing GPS coordinates enhances the capability of industry to locate and provide metering services. AEMO notes that this change does not only cover small customer metering, rather it covers all rural NMIs including contestable sites and involving MCs. A fundamental objective of the energy markets is efficiency in the long-term interests of consumers. AEMO's assessment is that the proposal provides an opportunity to significantly streamline processes.
47.	CitiPower Powercor	CitiPower Powercor supports the provision of GPS coordinates for all, not just rural sites. This should apply only to new connections, meter exchanges or changes in the Meter Provider role post the introduction of this change.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover more NMIs.
48.	Endeavour Energy	We do not support adding GPS coordinates to MSATS because the cost to collect and provide this information outweighs the benefit, especially when there are other cost effective ways to locate the meter. If GPS coordinates were to be added to MSATS then the answer to the question is 'No'.	AEMO notes the respondent's comments and refer to the response in Table 6, Item 42. AEMO notes that for premises, the network configuration and premises connection may not be as simple as tracing an overhead line. AEMO is aware of rural connections that have been

No.	Consulted person	Comment	AEMO response
		For rural sites, it is very common for these premises to be connected via overhead mains and therefore it would not be difficult to locate the meter by following the overhead mains. For the small percentage where the overhead mains are converted to underground within the premises then it is not uncommon for the meter to be located on a physical structure, eg the house or the shed, therefore with the help of comments on the meter location the meter can be easily located.	made from the nearest overhead mains at the time the premises is connected and does not always follow a logical or geographically identifiable path. This creates a level of complexity that GPS coordinates will help to simplify. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
49.	Energy Queensland - Energex and Ergon Energy Network	Prior to supporting this provision, Ergon Energy Network and Energex would require a cost benefits analysis.	AEMO notes the respondent's comments and refer to the response in Table 6, Item 42 and 48.
50.	EnergyAustralia	EnergyAustralia believes there is merit and value in requiring GPS coordinates available (mandatory) for all areas, not just rural. There are many instances where meter locations are difficult to determine within urban and city locations.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
51.	ERM Power	Yes, the field should be required for all new sites where the meter is currently capable of providing the location for all new sites.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all new NMIs. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
52.	EvoEnergy	No do not support, as it is a cost with no benefit to the current MPB. Should be captured as part of meter replacement or new installations.	AEMO notes the respondent's comments and refer to the response in Table 6, Item 42 and 48.
53.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
54.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
55.	Origin Energy	Yes, Origin supports the mandatory provision of GPS coordinates for all rural sites.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
56.	PLUS ES	PLUS ES supports the provision of GPS co-ordinates for rural areas, however question the benefit of mandatory. There is always the question of a cost benefit analysis if they were mandatory. PLUS ES supports and recommends the process to obtain GPS co-ordinates when at the site is best endeavours but a Required field in MSATS. Provide the co-ordinates when you have obtained them. Otherwise making the field mandatory may deliver inaccurate or false records.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 42.
57.	Powerlink Queensland	No, there are potential network security issues around the provision of this critical infrastructure asset data. Also, some sites may need to be surveyed too find the GPS co-ordinates.	AEMO notes the respondent's comments and note the intent of the field is capture the location of meter, not network assets. MSATS data should not imped on the security of the sites.
58.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
59.	Red Lumo	Red and Lumo believe this could be useful for contestable metering providers needing to exchange non-contestable meters for contestable meters.	AEMO notes the respondent's support for the proposed change.
60.	SA Power Networks	SA Power Networks support this approach however, allowances should be provided where the LNSP is acting as the MP as we may not have capture information for 100% of the required sites and this will be a costly activity to collect and populate – flexible timeframes should be provided to enable an efficient process to be used.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 42.
61.	TasNetworks	TasNetworks would need to consider the organisational impact of recording and storing this information. We are cautious about making it mandatory given the potential system (market & field) and business process changes required.	AEMO notes the respondent's comments and refer to the response in Table 6, Item 42.
62.	United Energy	United Energy supports the provision of GPS coordinates for all, not just rural sites. This should apply only to new connections, meter exchanges or changes in the Meter Provider role post the introduction of this change.	AEMO notes the respondent's support for the proposed change.
63.	Vector Metering	Yes;	AEMO notes the respondent's support for the proposed change.
Q22 If the provision of GPS coordinates for all rural NMIs were made mandatory, does your organisation support the use of "Designated regional area postcodes" to define "rural"? If not, what alternative would your organisation prefer?			

No.	Consulted person	Comment	AEMO response
64.	AGL	AGL believes that GPS coordinates should extend to urban areas as well, especially for meter locations which are for street equipment (eg traffic lights) or large expanses – such as university sites, UMS connections, parks etc.	AEMO notes the suggested extension to cover all NMIs across urban areas and note the intention of the field is to target metered sites in rural areas. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
65.	Alinta Energy	Alinta Energy proposes that this field be Mandatory for all sites. Alita Energy proposes that a GPS coordinate of 0's be used where this information is unavailable and AEMO monitors MPB's as part of its regular audit regime to ensure that MPB's are appropriately populating this field.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs and refer to the response in Table 6, Item 42.
66.	Aurora Energy	Aurora Energy agrees with this approach however, Tasmanian post codes cover vast areas and may not capture all rural areas. This is something we have struggled with when trying to define rural areas using a specific code or reference	AEMO notes the respondent's support for the proposed change and notes the challenges in defining Tasmanian rural areas. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
67.	Ausgrid	No - Postcodes cannot be used to determine whether a sites is rural and most post codes will contain both rural and non rural installations. Using this post code would require country town to include GPS coordinates which is not the intent. The definition of rural areas is determined by the council zoning determination. Ausgrid connection policy define rural as: • An area zoned as rural under a local environment plan made under the Environmental Planning and Assessment Act 1979 (NSW).	AEMO notes the respondent's comment and notes that to enable a consistent application of the definition of rural the suggested 'Designated regional area postcodes' does include country towns. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
68.	AusNet Services	As per AusNet Services response to Question 21.	AEMO refers to the response in Table 6, Item 46.
69.	CitiPower Powercor	CitiPower Powercor supports the provision of GPS coordinates for all, not just rural sites.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
70.	Endeavour Energy	No, if GPS coordinates were to be added to MSATS then we do not agree with the proposal to use designated regional area postcodes to define rural. This definition is	AEMO notes the respondent's comment and notes that to enable a consistent application of the definition of

No.	Consulted person	Comment	AEMO response
		too broad because the postcodes that are captured in this definition also captures urban premises.	rural the suggested 'Designated regional area postcodes' does include townships. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
71.	Energy Queensland - Energex and Ergon Energy Network	If GPS coordinates are mandatory, then it should apply to all NMIs.	AEMO notes the respondent's comment and the suggested extension to cover all NMIs and refer to the responses in Table 6, Items 42 and 48.
72.	EnergyAustralia	EnergyAustralia believes there is merit and value in requiring GPS coordinates available (mandatory) for all areas, not just rural. There are many instances where meter locations are difficult to determine within urban and city locations.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
73.	EvoEnergy	Need a defined national source.	AEMO notes the respondent's comment.
74.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
75.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
76.	Origin Energy	Yes, Origin supports the use of "Designated regional area postcodes" to define "rural.	AEMO notes the respondent's support for the proposed change.
77.	PLUS ES	Postcodes cannot be used to determine whether a site is rural, and most post codes will contain both rural and non-rural zoning. Using this post code would require a country town to include GPS coordinates which is not the intent. The definition of rural areas is generally determined by state or council zoning. Hence, PLUS ES recommends the process to obtain GPS co-ordinates when at the site is best endeavours but a Required field in MSATS.	AEMO notes the respondent's comment and notes that to enable a consistent application of the definition of rural the suggested 'Designated regional area postcodes' does include country towns. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
78.	Powerlink Queensland	Prefer to exclude WIGS NMIs from needing to have GPS co-ordinates for network security reasons.	AEMO refers to the response in Table 6, Item 57.

No.	Consulted person	Comment	AEMO response
79.	Powermetric	Yes, we see us making this a blanket requirement and providing it for all sites.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
80.	Red Lumo	No comment at this time	
81.	SA Power Networks	SA Power Networks support this concept, however, allowances will need to be made that enable for the exclusion of major regional centres/townships that would fall within the post code areas.	AEMO notes the respondent's support for the proposed concept and notes that to enable a consistent application of the definition of rural the suggested 'Designated regional area postcodes' does include major regional centres/townships. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
82.	TasNetworks	If mandatory, this would be an acceptable definition of rural to TasNetworks.	AEMO notes the respondent's support for the proposed change.
83.	United Energy	United Energy supports the provision of GPS coordinates for all, not just rural sites.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs. AEMO has included in section 4.6 of this draft report as a series of questions to help AEMO further define the application of GPS Coordinates.
84.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change.
Q23 Does your organisation support the mandatory provision of GPS coordinates for any sites with an MRIM meter?			
85.	AGL	AGL believes that GPS coordinates should be included for all meters, not just MRIM, but MRAM, Comms, VICAMI etc.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs.
86.	Alinta Energy	See answer to question 22	AEMO refers to the response in Table 6, Item 65.
87.	Aurora Energy	Yes Aurora Energy would support this	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
88.	Ausgrid	Ausgrid believes this should be a required field not mandatory. If AEMO make this mandatory there should be an analysis conducted on the cost/benefit. Why is MRAM and BASIC meters not included under this requirement?	AEMO notes the respondent's comment and refer to the response in Table 6, Item 42. AEMO notes the intention of the field is to cover manually read meters which includes MRAM and Basic.
89.	AusNet Services	As per AusNet Services response to Question 21.	AEMO refers to the response in Table 6, Item 46.
90.	CitiPower Powercor	CitiPower Powercor supports the provision of GPS coordinates for sites with an MRIM meter.	AEMO notes the respondent's support for the proposed change.
91.	Endeavour Energy	No, if GPS coordinates were to be added to MSATS then this should not be mandatory for existing MRIM metering installations. It is not clear why GPS coordinates is suggested to be mandatory for an MRIM metering installations in contrast to other metering types. Without an explanation of the benefits or the use case for an MRIM metering installations we do not believe that the cost to collect and provide this information outweighs the benefit, especially when there are other cost effective ways to locate the meter.	AEMO notes the respondent's comment and refer to the responses in Table 6, Item 42, 46 and 48.
92.	Energy Queensland - Energex and Ergon Energy Network	If GPS coordinates are mandatory, then it should apply to all NMIs.	AEMO notes the respondent's comment and the suggested extension to cover all NMIs and refer to the response in Table 6, Item 42.
93.	EnergyAustralia	EnergyAustralia believes there is merit and value in requiring GPS coordinates available (mandatory) for all metering types. There are many instances where meter locations are difficult to determine, and GPS coordinates would eleviate these issues.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs and refer to the response in Table 6, Item 42.
94.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 42.
95.	EvoEnergy	No, as it is a cost with no benefit to the current MPB with no benefits.	AEMO notes the respondent's comment and refer to the responses in Table 6, Item 42, 46 and 48.
96.	Intellihub	Why have MRIM's been singeled out here?	AEMO notes the respondent's comment and refer to the response in Table 6, Item 42. AEMO notes the intention of the field is to cover manually read meters which includes MRAM and Basic.

No.	Consulted person	Comment	AEMO response
97.	Metering Dynamics	Yes. However, we seek clarification on whether this provision will also apply to MRAM sites.	AEMO notes the respondent's comment and refer to the response in Table 6, Item 42. AEMO notes the intention of the field is to cover manually read meters which includes MRAM and Basic.
98.	Origin Energy	Yes, Origin supports the mandatory provision of GPS coordinates for any sites with an MRIM meter.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 42.
99.	PLUS ES	PLUS ES recommends a cost benefit analysis as the MRIM is a declining metering population for NECF states. Does MRIM include VIC AMI meters? We also seek clarity why the requirement is only MRIM and does not include MRAM meters.	AEMO notes the respondent's comment and refer to the responses in Table 6, Item 42, 46 and 48. AEMO notes that VICAMI is classified as MRIM and the intention of the field is to cover manually read meters which includes MRAM and Basic.
100.	Powerlink Queensland	We provide no comment as we don't have any MRIMs.	AEMO notes the respondent's comment.
101.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 42.
102.	Red Lumo	No comment at this time	AEMO notes the respondent's comment.
103.	SA Power Networks	SA Power Networks believe that GPS coordinates should only be mandatory in rural locations – subject to exclusion provided in response to Q21.	AEMO notes the respondent's comment and refer to the response in Table 6, Item 60.
104.	TasNetworks	N/A for TasNetworks, no MRIM meters in the Tasmanian jurisdiction.	AEMO notes the respondent's comment.
105.	United Energy	United Energy supports the provision of GPS coordinates for sites with an MRIM meter.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 42.
106.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 42.
Q24 Does your organisation support the mandatory provision of GPS coordinates for any new installations?			
107.	AGL	Yes	AEMO notes the respondent's support for the proposed change and note the provision of this data will be mandatory from the change effective date.
108.	Alinta Energy	See answer to question 22	AEMO refers to the response in Table 6, Item 65.

No.	Consulted person	Comment	AEMO response
109.	Aurora Energy	Yes Aurora Energy would support this	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
110.	Ausgrid	Yes, if they can be captured then they should be. This should be a required field only.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
111.	AusNet Services	As per AusNet Services response to Question 21.	AEMO refers to the response in Table 6, Item 46.
112.	CitiPower Powercor	CitiPower Powercor supports the provision of GPS coordinates for new installations.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
113.	Endeavour Energy	No, if GPS coordinates were to be added to MSATS then we believe for premises where the location of the meter is easily identifiable, eg residential sites, then adding GPS coordinates does not add any value. For sites where the meter is location is not easily identifiable, eg apartments, then comments about the meter location would be sufficient and at times could be better than GPS coordinates (eg meter located in basement – GPS coordinates would not be helpful but meter location comments would be helpful).	AEMO notes the respondent's comment and refer to the responses in Table 6, Item 42, 46 and 48.
114.	Energy Queensland - Energex and Ergon Energy Network	If GPS coordinates are mandatory, then it should apply to all NMIs.	AEMO notes the respondent's comment and the suggested extension to cover all NMIs and refer to the response in Table 6, Item 107.
115.	EnergyAustralia	Yes, EnergyAustralia strongly supports GPS coordinates being mandatory for all installations, existing and new.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs and refer to the response in Table 6, Item 107.
116.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
117.	EvoEnergy	Yes as it can be part of the meter installation process, if not already.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
118.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
119.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.

No.	Consulted person	Comment	AEMO response
120.	Origin Energy	Yes, Origin supports the mandatory provision of GPS coordinates for any new installations.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
121.	PLUS ES	PLUS ES supports the Required provision of GPS co-ordinates for any new metering installation, to cater for the scenario when the GPS co-ordinates cannot be captured.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
122.	Powerlink Queensland	Prefer to exclude WIGS NMIs from needing to have GPS co-ordinates for network security reasons.	AEMO refers to the response in Table 6, Item 57.
123.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
124.	Red Lumo	No comment at this time	
125.	SA Power Networks	SA Power Networks support this proposed change.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
126.	TasNetworks	TasNetworks would need to consider the organisational impact of recording and storing this information. We are cautious about making it mandatory given the potential system (market & field) and business process changes required.	AEMO notes the respondent's comment.
127.	United Energy	United Energy supports the provision of GPS coordinates for new installations.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
128.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change and refer to the response in Table 6, Item 107.
Q25 Does your organisation believe that the provision of this information should be made mandatory for any other scenarios?			
129.	AGL	Yes – some clear guidelines need to be provided so that the DBs and MCs have a clear responsibility for capturing GPS coordinates when visiting customer sites, so that the information can be captured over time.	AEMO notes the respondent's comment and refer to the response in Table 6, Item 42.
130.	Alinta Energy	See answer to question 22	AEMO refers to the response in Table 6, Item 65.
131.	Aurora Energy	Aurora Energy would like this to also cover any meter exchange	AEMO notes that it intends for this to cover any new meter installed including meter exchanges.
132.	Ausgrid	Not mandatory only required. How are GPS coordinates going to be captured where the coordinates cannot be obtained? (eg. basements or meter located inside).	AEMO notes the respondent's comment and refer to the response in Table 6, Item 42.

No.	Consulted person	Comment	AEMO response
133.	AusNet Services	As per AusNet Services response to Question 21.	AEMO refers to the response in Table 6, Item 46.
134.	CitiPower Powercor	CitiPower Powercor supports the provision of GPS coordinates post a meter replacement or meter churn.	AEMO notes that it intends for this to cover any new meter installed including meter exchanges.
135.	Endeavour Energy	No, if GPS coordinates were to be added to MSATS then GPS coordinates should not be mandatory for any scenario. We do not believe that the cost to collect and provide this information outweighs the benefit, especially when there are other cost-effective ways to locate the meter.	AEMO notes the respondent's comment and refer to the responses in Table 6, Item 42 and 107.
136.	Energy Queensland - Energex and Ergon Energy Network	If GPS coordinates are mandatory, then it should apply to all NMIs.	AEMO notes the respondent's comment and the suggested extension to cover all NMIs and refer to the responses in Table 6, Item 42 and 107.
137.	EnergyAustralia	Yes, all meter types, old and new. The transition period can provide for the inconvenience and logistical issues. The benefits of accurate meter location will outweigh the negatives in having to obtain the coordinates.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs and refer to the responses in Table 6, Item 42 and 107.
138.	ERM Power	Yes – where the meters are capable of providing the location for all new sites.	AEMO notes the respondent's suggestion to consider coverage of meters at new sites that are capable of providing the location. AEMO notes that GPS coordinates can be collected at the point of installation via a variety of devices or applications and can be provided by some existing remotely read meters.
139.	EvoEnergy	No	AEMO notes the respondent's comment.
140.	Intellihub	Yes	AEMO notes the respondent's comment.
141.	Metering Dynamics	No	AEMO notes the respondent's comment.
142.	Origin Energy	Yes, Origin believes that the provision of this information should be made mandatory for existing meters in case of meter fault issues or for any other emergency. There is an opportunity for DNSP's as part of their meter reading schedule to capture the GPS coordinates for every site. This way within 90 days of a meter read cycle all GPS coordinates would be available.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all meters and refer to the responses in Table 6, Item 42 and 107.

No.	Consulted person	Comment	AEMO response
143.	PLUS ES	PLUS ES believes that making the field mandatory for any scenario will be a costly proposition. What happens if the network coverage prevents the information being captured or there is a requirement to procure technology not reliant on network coverage? For that purpose PLUS ES recommends the fields to be Required.	AEMO notes the respondent's comment and refer to the responses in Table 6, Item 42 and 107.
144.	Powerlink Queensland	No, not for any scenarios involving WIGS NMIs.	AEMO notes the respondent's comment.
145.	Powermetric	Yes	AEMO notes the respondent's comment.
146.	Red Lumo	No comment at this time	AEMO notes the respondent's comment.
147.	SA Power Networks	SA Power Networks think that there may be some merit in considering the inclusion of all business/commercial type sites excluding the CBD. (The CBD will present issues as GPS coordinates will not provide full value due to close proximity of different sites).	AEMO notes the respondent's suggestion to consider coverage of business/commercial type sites outside of the CBD.
148.	TasNetworks	No.	AEMO notes the respondent's comment.
149.	United Energy	United Energy supports the provision of GPS coordinates post a meter replacement or meter churn.	AEMO notes that it intends for this to cover any new meter installed including meter exchanges.
150.	Vector Metering	If you do not make the fields mandatory and population becomes 'optional' then businesses will choose not to collect and not to populate. This will dilute the benefits of collecting the information. Locating meters especially in rural locations is a material issue; All meters regardless of type should have location details made available in MSATS;	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs and refer to the responses in Table 6, Item 42 and 107.
Q26 Does your organisation believe that the provision of this information should be made required for any other scenarios?			
151.	AGL	Yes – some clear guidelines need to be provided so that the DBs and MCs have a clear responsibility for capturing GPS coordinates when visiting customer sites.	AEMO notes the respondent's comment and refer to the response in Table 6, Item 42.
152.	Alinta Energy	See answer to question 22	AEMO refers to the response in Table 6, Item 65.
153.	Aurora Energy	As above if not mandatory	AEMO notes the respondent's comment and refer to the response in Table 6, Item 42.
154.	Ausgrid	Not mandatory only required.	AEMO notes the respondent's comment and refer to the response in Table 6, Item 42.

No.	Consulted person	Comment	AEMO response
155.	AusNet Services	AusNet Services does not support that the provision of GPS information should be made 'Required' for any other scenarios in Victoria where the MPB = MC = LNSP.	AEMO notes the respondent's comment and refer to the response in Table 6, Item 42.
156.	CitiPower Powercor	CitiPower Powercor supports the provision of GPS coordinates post a meter replacement or meter churn.	AEMO notes that it intends for this to cover any new meter installed including meter exchanges.
157.	Endeavour Energy	Yes, if GPS coordinates were to be added to MSATS then GPS coordinates should only be required for new metering installations and any changes to existing metering installations. We note that the B2B NOMW transaction already require GPS coordinates for new metering installation and any changes to existing metering installations. Therefore, we believe that by aligning to the B2B Procedure there would not any additional cost on participants.	AEMO notes the respondent's comment and refer to the responses in Table 6, Items 42 and 107.
158.	Energy Queensland - Energex and Ergon Energy Network	If GPS coordinates are mandatory, then it should apply to all NMIs.	AEMO notes the respondent's comment and the suggested extension to cover all NMIs and refer to the responses in Table 6, Item 42 and 107.
159.	EnergyAustralia	No, as above.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 137.
160.	ERM Power	Yes - where the meters are capable.	AEMO notes the respondent's comment and the suggested extension to cover NMIs where the meters are capable to provide it and refer to the responses in Table 6, Item 42 and 107.
161.	EvoEnergy	For all existing NMI's.	AEMO notes the respondent's comment and the suggested extension to cover all NMIs and refer to the responses in Table 6, Item 42 and 107.
162.	Intellihub	Sure	AEMO notes the respondent's comment.
163.	Metering Dynamics	Yes	AEMO notes the respondent's comment.
164.	Origin Energy	Yes, Origin believes that the provision of this information should be made required for whenever any party attends a site.	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all meters and refer to the responses in Table 6, Item 42 and 107. AEMO notes that provision of data to this field is

No.	Consulted person	Comment	AEMO response
			nominated to be by the MP including distributors who are the initial MP.
165.	PLUS ES	PLUS ES believes that the requirement to capture GPS co-ordinates should be the same irrespective of the type or the location of the meter. The procedure should encourage best endeavours to capture GPS co-ordinates, but the field population should be Required.	AEMO notes the respondent's comment and the suggested extension to cover all meters and refer to the responses in Table 6, Item 42 and 107.
166.	Powerlink Queensland	No, not for any scenarios involving WIGS NMIs.	AEMO notes the respondent's comment.
167.	Powermetric	Yes	AEMO notes the respondent's comment.
168.	Red Lumo	No comment at this time	AEMO notes the respondent's comment.
169.	SA Power Networks	SA Power Networks support this proposed change.	AEMO notes the respondent's comment and refer to the responses in Table 6, Items 42 and 107.
170.	TasNetworks	Yes, TasNetworks believes that GPS coordinates should only be required fields.	AEMO notes the respondent's comment and refer to the responses in Table 6, Items 42 and 107.
171.	United Energy	United Energy supports the provision of GPS coordinates post a meter replacement or meter churn.	AEMO notes that it intends for this to cover any new meter installed including meter exchanges.
172.	Vector Metering	If you do not make the fields mandatory and population becomes 'optional' then businesses will choose not to collect and not to populate. This will dilute the benefits of collecting the information. Locating meters especially in rural locations is a material issue; All meters regardless of type should have location details made available in MSATS;	AEMO notes the respondent's support for the proposed change and the suggested extension to cover all NMIs and refer to the responses in Table 6, Item 42 and 107.
Q27 Bearing in mind that GPS coordinates to four decimal places allow identification to the nearest 10 metres, that GPS coordinates to five decimal places allows identification to the nearest metre, and that GPS coordinates to six decimal places allows identification to the nearest 10 centimetres, if the field is added should it be to four, five, or six decimal places?			
173.	AGL	AGL would suggest that 5 decimal places (ie the nearest metre) should be adequate for locating a meter. Also, noting that the GPC equipment, may not be physically able to get any closer to the meter in any case. Four decimal places (10m) does not seem adequate for locating a meter.	As the majority of responses support the provision of GPS coordinates to five decimal places, AEMO intends to set the field to five decimal places.

No.	Consulted person	Comment	AEMO response
174.	Alinta Energy	Alinta Energy believes that 4 decimals should provide enough resolution.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
175.	Aurora Energy	Aurora Energy would recommend 5 decimal places	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
176.	Ausgrid	Ausgrid current GIS supports GPS coordinates to 6 decimal places.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
177.	AusNet Services	No comment.	AEMO notes the respondent's comment.
178.	CitiPower Powercor	CitiPower Powercor recommends that 5 decimal places is about right as there is no additional benefit in being any more exact. Accuracy to within a meter is more than adequate.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
179.	Endeavour Energy	If GPS coordinates were to be added to MSATS then we suggest that it should be up to 7 decimal places. This aligns with the number of decimal places for the GPS coordinates defined in the B2B NOMW transaction.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
180.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex suggest that five decimal places are appropriate.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
181.	EnergyAustralia	EnergyAustralia's preference is for GPS coordinates to six decimal places, as this will enable an accuracy level that is valid for at a meter level. Our view is that GPS coordinates provide a path to remove meter location issues. We believe that G-NAF and DPID are suitable for rectifying address location issues.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
182.	ERM Power	Five	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
183.	EvoEnergy	Four	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
184.	Intellihub	6	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
185.	Metering Dynamics	Metering Dynamics supports 5 decimal places if the field is added.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.

No.	Consulted person	Comment	AEMO response
186.	Origin Energy	Origin suggests six decimal places as it gives the nearest point of identification and ensures the coordinates are provided to the closest point possible.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
187.	PLUS ES	PLUS ES supports the 5 decimal places (identification to the nearest 1 m). Anything greater than 5 decimal places would be redundant and anything less may not deliver the benefits.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
188.	Powerlink Queensland	The more accurate the better for the purposed of identifying a meter's location for a DNSP, as opposed to locating a premises / parcel of land. For a TNSP WIGS NMIs the metering installation could spread over a few 100 square metres so 2 decimal spaces is sufficient. Suggest differentiating between the TNSP vs DNSP or by metering Type.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
189.	Powermetric	Five	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
190.	Red Lumo	Ideally 5 decimal places.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
191.	SA Power Networks	SA Power Networks would suggest that the systems field design should be future proofed and therefore provide for six decimal places but the procedures provide flexibility in the length that can be provided.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
192.	TasNetworks	TasNetworks believes that 5 decimal places would be adequate. In some case 4 decimal places may be all that can be captured due to site restrictions.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
193.	United Energy	United Energy recommends that 5 decimal places is about right as there is no additional benefit in being any more exact. Accuracy to within a meter is more than adequate	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.
194.	Vector Metering	Four; 10 meters is close enough.	AEMO notes the respondent's comment and refers to the response in Table 6, Item 173.

Table 7 Meter Read and Estimation Information

No.	Consulted person	Comment	AEMO response
Q28 Do you agree with AEMO's proposal to amend or remove the meter read and estimation information as per the proposal above, if not please specify which ones you do not agree with and why?			
1.	AGL	NSRD is an important piece of information, especially for MRAM and basic meters, especially in an environment of faster switching. Data Validation, Estimation and Measurement Type are fields that AGL supports the removal of.	AEMO notes the respondent's support for the proposed change.
2.	Alinta Energy	Alinta Energy agrees to the removal of the field EstimationInstructions. Note it has not be strucktrough on page 17 of the document Standing Data for MSATS v 5.1.	AEMO notes the respondent's support for the proposed change. AEMO will amend the Standing Data for MSATS guideline at the draft report stage.
3.	Aurora Energy	Aurora Energy agrees with AEMO's proposed approach	AEMO notes the respondent's support for the proposed change.
4.	Ausgrid	Ausgrid agrees with both proposals: • making the NSRD a required field for manually read meters and • removing the estimation fields.	AEMO notes the respondent's support for the proposed change.
5.	AusNet Services	AusNet Services supports the amendment to make the 'NextScheduledReadDate' a 'Required' field. AusNet Services also supports the removal of the following fields. - DataValidations - EstimationInstructions - MeasurementType	AEMO notes the respondent's support for the proposed change.
6.	CitiPower Powercor	CitiPower Powercor supports AEMO's proposal.	AEMO notes the respondent's support for the proposed change.
7.	Endeavour Energy	Yes, we agree with amending the Next Scheduled Read Date from 'Optional' to 'Required' for manually read meters and the removal of the 3 suggested fields. To determine if a meter is manually read we suggest that AEMO look at the first character of the Read Type Code field, as opposed to the Installation Type Code field, because some metering installations that is normally manually read can be remotely	AEMO notes the respondent's support for the proposed change. AEMO notes the provision of NSRD is Mandatory for MDPs for manually read meters as per clause 2.4.(p) of the MSATS CATS Procedure v4.7. Manually read meters are determined by Installation Type Code – MRIM, MRAM or Basic. AEMO notes this change intends to align

No.	Consulted person	Comment	AEMO response
		read. For example, under 7.8.9.b of the NER remote collection of metering data is allowed for type 5 and 6 metering installation.	the MSATS for Standing Data guideline to the CATS Procedure and will change the wording in the guideline to 'Mandatory for manually read meters and Type 7 metering installations and Not Used for remotely read meters'.
8.	Energy Queensland - Energex and Ergon Energy Network	Yes	AEMO notes the respondent's support for the proposed change.
9.	EnergyAustralia	EnergyAustralia agrees with AEMO's proposal to remove the fields; however, we understand that these fields are more aligned with MDP requirements, therefore their views on the merit of amending/removal should be paramount.	AEMO notes the respondent's support for the proposed change.
10.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change.
11.	EvoEnergy	Agree	AEMO notes the respondent's support for the proposed change.
12.	Intellihub	Yes. Why is the NSRD only 'required' for manually read meters why not 'mandatory'	AEMO notes the respondent's comment and refers to the response in Table 7, Item 7.
13.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
14.	Origin Energy	Origin supports AEMO's proposal to amend or remove the meter read and estimation information.	AEMO notes the respondent's support for the proposed change.
15.	PLUS ES	PLUS ES supports both proposals: • making the NSRD a required field; only for manually read meters and • removing the estimation fields.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 7, Item 7.
16.	Powerlink Queensland	Agree but not due to the proposal above but because we only have Type 1 to 3 metering on WIGS NMIs which don't make use of these fields.	AEMO notes the respondent's comment.
17.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
18.	Red Lumo	Red and Lumo believe that if the Measurement Type field was populated and held to a standard, it could be useful in determining if the MC/LNSP is providing all metering data from a meter. This is particularly useful in disputes where sites have been configured for solar before approval. It should be made mandatory.	AEMO proposes to delete the Measurement Type field as the majority of participant responses see no use for it and support its removal.
19.	SA Power Networks	SA Power Networks support this proposed change.	AEMO notes the respondent's support for the proposed change.
20.	TasNetworks	Yes	AEMO notes the respondent's support for the proposed change.
21.	United Energy	United Energy supports AEMO's proposal.	AEMO notes the respondent's support for the proposed change.
22.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change.

Table 8 Meter Communications Information

No.	Consulted person	Comment	AEMO response
Q29 Do you agree with AEMO's proposal to remove the meter communications information fields as per the proposal above, if not please specify which ones you do not agree with and why?			
1.	AGL	AGL supports AEMOs proposal to remove the following fields: • Communications Equipment Type • Data Conversion • Remote Phone Number • However, the Communication Protocol provided useful information historically, when the meters connected with 2G had to be upgraded when the 2G network was turned off. AGL can therefore see value in this field being populated to manage future changes in communications requirements, eg 3G networks being retired. Password / User Access Rights - It was noted that there may be options for customers to have direct access to meters via interface devices (eg Zigby in AMI meters). This	AEMO notes the respondent's support for part of the proposed change. As the majority of respondents support the removal of the fields and see no value or use for them, AEMO proposes to delete the fields: • Communications Equipment Type • Communication Protocol • Data Conversion • Password • Remote Phone Number • User Access Rights

No.	Consulted person	Comment	AEMO response
		generally requires a password or activation, therefore this field may be beneficial in flagging the requirement to support customer meter access.	
2.	Alinta Energy	Alinta Energy agrees to the removal of this field.	AEMO notes the respondent's support for the proposed change.
3.	Aurora Energy	Aurora Energy agrees with AEMO's proposed approach	AEMO notes the respondent's support for the proposed change.
4.	Ausgrid	Yes	AEMO notes the respondent's support for the proposed change.
5.	AusNet Services	AusNet Services supports the removal of the following fields. - CommunicationEquipmentType - CommunicationsProtocol - DataConversion - Password - RemotePhoneNumber - UserAccessRights	AEMO notes the respondent's support for the proposed change.
6.	CitiPower Powercor	CitiPower Powercor supports AEMO's proposal.	AEMO notes the respondent's support for the proposed change.
7.	Endeavour Energy	Yes, we agree with the suggested fields to be removed. We do not believe that these fields provide value to any other party except for the metering service provider, therefore they are not required in MSATS	AEMO notes the respondent's support for the proposed change.
8.	Energy Queensland - Energex and Ergon Energy Network	Yes	AEMO notes the respondent's support for the proposed change.
9.	EnergyAustralia	Yes, the information that was stored in the removed fields is accessible to the responsible parties for the meters. The majority of meters that would require the information in the removed fields are maintained by the LNSP. With PoC it will further limit the need for this information, as these - predominantly old -meters will be replaced.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
10.	EvoEnergy	Not required by any participant except the person that loaded it into MSATS, so please remove.	AEMO notes the respondent's support for the proposed change.
11.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
12.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
13.	Origin Energy	Origin supports AEMO's proposal to remove the meter communications information fields.	AEMO notes the respondent's support for the proposed change.
14.	PLUS ES	PLUS ES supports the removal of the communications fields, they are no longer relevant to the market where dynamic IPs are used.	AEMO notes the respondent's support for the proposed change.
15.	Powerlink Queensland	We agree to the removal of this field as we don't use these fields for WIGS NMIs.	AEMO notes the respondent's support for the proposed change.
16.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
17.	Red Lumo	No comment at this time	AEMO notes the respondent's comment.
18.	SA Power Networks	SA Power Networks support this proposed change.	AEMO notes the respondent's support for the proposed change.
19.	TasNetworks	Yes	AEMO notes the respondent's support for the proposed change.
20.	United Energy	United Energy supports AEMO's proposal.	AEMO notes the respondent's support for the proposed change.
21.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change.

NMI Details

Table 9 Address Structure

No.	Consulted person	Comment	AEMO response
Q30 Do you agree with the proposal to remove unstructured address fields, following a period for data holders to clean their existing data?			
1.	AGL	Yes – or at least going forward with an obligation to update noting that the MSATS address is for the physical connection. AGL also queries how this would be populated for UMS devices – such as BBQs in Parks, or buildings within large properties like university campuses which may require unstructured information. AGL suggests the obligation should be to use structured addresses unless only unstructured works. But given the proposal to include GNAF / GPS is this change warranted	AEMO notes the respondent's support for the proposed change and notes the majority of respondents support this change. AEMO also notes that structured address details are being complimented by the additional location details available through the combination of the Meter Location, Location Descriptor, GNAF and GPS. AEMO notes that the Location Descriptor and Meter Location fields will be lengthened to enable ease of use.
2.	Alinta	Alinta Energy strongly supports the removal of unstructured address fields on MSATS.	AEMO notes the respondent's support for the proposed change.
3.	Aurora Energy	Aurora Energy agrees with AEMO's proposed approach	AEMO notes the respondent's support for the proposed change.
4.	Ausgrid	Yes	AEMO notes the respondent's support for the proposed change.
5.	AusNet	AusNet Services supports the removal of the following fields provided a sufficient transition period will be provided to LNSPs to perform data cleansing activities. - AddressLine (line 1-3)	AEMO notes the respondent's support for the proposed change. Given overall support for moving to structured address fields, AEMO is considering a 2 year transition period. AEMO notes data transition to the new, amended and removed fields needs to occur and have included in section 4.10 of this draft report a series of questions to help AEMO define the data transition plans.
6.	CitiPower Powercor	CitiPower Powercor does not support the removal of unstructured address fields. We don't see any benefit in doing so and it would only result in additional cost and complexity.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 1.

No.	Consulted person	Comment	AEMO response
7.	Endeavour Energy	Yes, we agree with the removal of the unstructured address fields. The use of structured addresses allows for better validation and management of this important information.	AEMO notes the respondent's support for the proposed change.
8.	Energy Australia	EnergyAustralia support the removal of unstructured address fields, given a period for data holders to clean their existing data.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 9, Item 5.
9.	Energy Queensland - Energex and Ergon Energy Network	Yes	AEMO notes the respondent's support for the proposed change.
10.	ERM Power	No - The address fields should remain unchanged as we will not have the structured address for all sites, especially new connections. Example, phone towers & pumps that don't always have the mandatory information for a structured address to be created.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 1.
11.	EvoEnergy	Yes, no longer required as an address can be found for any site, or made up based on various maps available for each NSP.	AEMO notes the respondent's support for the proposed change.
12.	Intellihub	Yes. Only if every address scenario can be catered for in the structured address fields. Has every Australian property been allocated a structured address?	AEMO notes the respondent's support for the proposed change and considers that currently stored unstructured addresses can be cleansed and aligned to structured fields and refers to the response in Table 9, Item 1.
13.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
14.	Origin Energy	Yes, Origin agrees with the proposal to remove unstructured address field as it will allow for clear identification of sites and remove ambiguity from unstructured address details. In addition, Origin seek clarification on how long will the period be for data holders to clean the data?	AEMO notes the respondent's support for the proposed change and refer to the response in Table 9, Item 5.
15.	PLUS ES	PLUS ES supports the proposal for the removal of Unstructured Address fields.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
16.	Powerlink	We agree with the removal of unstructured address fields, however some of our connections still do not have structured addresses.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 1.
17.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
18.	Red and Lumo	Yes, Red and Lumo support the removal of the unstructured address post the thorough clean-up of the structured address, and the addition of newly proposed fields (ie: G-NAF).	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 1.
19.	SA Power	SA Power Networks have invested a significant amount and time and resources to improve the quality of site addressing information held within our systems, however, this work is ongoing any solutions should continue to provide and maintain the current data held within un-structured fields where no current structured address is provided. SA Power Networks would support the provision of any newly created NMI's with only a structured format.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 1.
20.	TasNetworks	Yes	AEMO notes the respondent's support for the proposed change.
21.	United Energy	United Energy does not support the removal of unstructured address fields. We don't see any benefit in doing so and it would only result in additional cost and complexity.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 1.
22.	Vector Metering	Yes; There is no need for a grace period as businesses should start cleaning data immediately so unstructured address can be removed as soon as procedures become effective.	AEMO notes the respondent's support for the proposed change and refer to the response in Table 9, Item 5.
Q31 Are there any reasons to keep the Unstructured Address fields, given that additional locational information (e.g. "pump by the dam") can be provided in other fields, e.g. Location Descriptor where we have proposed to lengthen the characters available?			
23.	AGL	AGL believes that the obligation should be to use the structured address fields unless they are not suitable, such as for UMS NMIs or some generator sites, in which case the unstructured fields could then be used.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 1.
24.	Alinta	Alinta Energy agrees that the lengthening of the Location Descriptor field should ensure that Unstructured Address fields can be removed from MSATS.	AEMO notes the respondent's support for the proposed change.
25.	Aurora Energy	As per the pre-consultation session I believe it was agreed that there would be no reason to keep the unstructured address if the other fields were extended	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
26.	Ausgrid	No, this information can be provided in meter location.	AEMO notes the respondent's support for the proposed change.
27.	AusNet	AusNet Services believes there are no reasons to keep the Unstructured Address fields.	AEMO notes the respondent's support for the proposed change.
28.	CitiPower Powercor	CitiPower Powercor does not support the removal of unstructured address fields. We don't see any benefit in doing so and it would only result in additional cost and complexity.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 1.
29.	Endeavour Energy	No, there is no reason to keep unstructured address fields. Our current process is to convert any valid unstructured addresses received via the Allocate NMI service order into structured addresses, therefore from our experience there is no scenario where an address cannot be entered as a structured address.	AEMO notes the respondent's support for the proposed change.
30.	Energy Australia	No	AEMO notes the respondent's support for the proposed change.
31.	Energy Queensland - Energex and Ergon Energy Network	No	AEMO notes the respondent's support for the proposed change.
32.	ERM Power	No - The address fields should remain unchanged as we will not have the structured address for all sites, especially new connections. Example, phone towers & pumps that don't always have the mandatory information for a structured address to be created.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 1.
33.	EvoEnergy	No, lose this field and increase the length of the Location Descriptor.	AEMO notes the respondent's support and comment for the proposed change.
34.	Intellihub	Yes. Only if every address scenario can be catered for in the structured address fields. Has every Australian property been allocated a structured address?	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 1.
35.	Metering Dynamics	No. Metering Dynamics considers that any additional information can be captured in other fields.	AEMO notes the respondent's support and comment for the proposed change.
36.	Origin Energy	Origin's position is that there is no reason to keep the unstructured address.	AEMO notes the respondent's support and comment for the proposed change.

No.	Consulted person	Comment	AEMO response
		In addition, all address information needs to be discoverable in the C7 reports to enable the Meter Providers to have the full information.	
37.	PLUS ES	PLUS ES has not identified any reasons to maintain the Unstructured Address fields.	AEMO notes the respondent's support for the proposed change.
38.	Powerlink	"Pump by the dam" is no use to a TNSP, building name has been used to identify the substation.	AEMO notes the respondent's comment.
39.	Powermetric	No	AEMO notes the respondent's support for the proposed change.
40.	Red and Lumo	In the long run, Red and Lumo do not see any reason the Unstructured Address fields should be kept so long as all currently available additional information is re-populated elsewhere.	AEMO notes the respondent's support and comment for the proposed change.
41.	SA Power	SA Power Networks have invested a significant amount and time and resources to improve the quality of site addressing information held within our systems, however, this work is ongoing any solutions should continue to provide and maintain the current data held within un-structured fields where no current structured address is provided. SA Power Networks would support the provision of any newly created NMI's with only a structured format.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 1.
42.	TasNetworks	No	AEMO notes the respondent's support for the proposed change.
43.	United Energy	United Energy does not support the removal of unstructured address fields. We don't see any benefit in doing so and it would only result in additional cost and complexity.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 1.
44.	Vector Metering	No	AEMO notes the respondent's support for the proposed change.
Q32 Do you agree with the proposal to add G-NAF PID to MSATS if the data were populated by AEMO on the basis of structured address (as is currently done for DPIDs) and thereafter by LNSPs?			
45.	AGL	AGL supports this proposal.	AEMO notes the respondent's support for the proposed change.
46.	Alinta	Alinta Energy supports AEMO adding the G-NAF PID.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
47.	Aurora Energy	Aurora Energy agrees with AEMO's proposed approach	AEMO notes the respondent's support for the proposed change.
48.	Ausgrid	Ausgrid would like to highlight that at the standing data workshop, it was identified that there was going to be further work and analysis completed on the viability and cost benefit of including this field. G-NAF is not always available when creating NMI standing data for new sites, it may be some time before this data is made available. In addition, the maintenance of these fields is limited to how often the GNAF database is updated. Ausgrid notes that one of the G-NAF limitations is that G-NAF supports the delivery address and not the site address.	AEMO notes the respondent's comment. AEMO intends to provide the updates quarterly, pending an investigation into feasibility of this option. The field will be Required rather than Mandatory, so if it is not available at the time of NMI creation then the field does not need to be populated. Regarding the comment about limitations, AEMO refers to G-NAF FAQ's on the website psma.com.au that "G-NAF contains addresses for physical locations, not postal locations".
49.	AusNet	AusNet Services does not support the inclusion of the G-NAF PID field. The G-NAF data is updated too infrequently (only updated quarterly in Feb, May, August and November) to be included as a data set, especially for NMI Creation (CRC 20XX) for New Connections. Sometimes even services like LandVic are not updated frequently enough and networks are needing to refer online planning permit processes to undertake connections. If the G-NAF PID field is made Mandatory, as indicated in the Standing Data for MSATS document released with the Stage 1 Consultation, then the LNSP will not be able to create a NMI without this dataset and may stall the NMI creation process, especially for new sub divisions/estates. Customer advocates are already critical of delays in connections for new developments caused by LandVic not being up to date. The effect of implementing this change would be to delay connection processes. Consumer advocates and government authorities would not be pleased with this outcome. Additionally, the G-NAF data that has been made openly available is the raw G-NAF data which is a complex database consisting of more than 30 tables of data. That makes it difficult to use without considerable manipulation. Further information can be found in the following link. https://data.gov.au/data/dataset/19432f89-dc3a-4ef3-b943-5326ef1dbecc The provision of this information requires further cost-benefit analysis outside of the MSATS Standing Data Review. AusNet Services proposes this field be removed from the Consultation and a separate ICF be raised by the proponent of this change.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.

No.	Consulted person	Comment	AEMO response
		Additionally, recommendations made from customer advocates to government authorities on this matter have been shared with the AER. It may be appropriate for AEMO to understand these recommendations on strictly confidential basis.	
50.	CitiPower Powercor	CitiPower Powercor does not support the use of G-NAF PID as the benefits would not outweigh the cost and complexity of introducing this change.	AEMO notes the respondent's comments and refers to the response in Table 9, Item 48.
51.	Endeavour Energy	No, we disagree with the proposal to add GNAF PID if the distributor is obligated to populate and maintain this field in MSATS. This is because it would require significant system changes however no use case has been put forward to explain how GNAF PID can be used to benefit the industry or the customer. Should retailers or AEMO believe that there are benefits of adding GNAF PID then we suggest that AEMO populates and maintain this field to minimise the collective cost to industry.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
52.	Energy Australia	Yes, the G-NAF PID is another step to ensuring accuracy in NMI addresses. This is a significant issue that the industry has had for many years, anything that can be done to reduce the poor customer experience should be adopted. The data initially being updated by AEMO seems to be the best approach, as they can roll out the updates across all LNSPs at once. New addresses should be the responsibility for the LNSP.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 48.
53.	Energy Queensland - Energex and Ergon Energy Network	Yes, provided that AEMO is responsible for populating this field.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 48.
54.	ERM Power	Yes – We need to investigate and understand the benefits, especially if we are going ahead with the structured addresses.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 48.
55.	EvoEnergy	Only agree if the G-NAF has relevant information for Greenfield sites where construction has not yet started. Field should be Required, not Mandatory.	AEMO notes the respondent's tentative support for the proposed change and refers to the response in Table 9, Item 48.
56.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
57.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
58.	Origin Energy	Yes, Origin agrees with the proposal to add G-NAF PID to MSATS if the data were populated by AEMO on the basis of structured address (as is currently done for DPIDs) and thereafter by LNSPs as it will assist with validating addresses.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 48.
59.	PLUS ES	PLUS ES supports that the G-NAF PID is added to MSATS, however, we do not believe this information alone will eliminate the challenges of locating/identifying a site. One of its limitations is that G-NAF supports the delivery address and not the site address. A combination of GPS co-ordinates, Structured Address fields and the G-NAF PID will ultimately provide the most complete location information.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 1. Regarding the comment about limitations, AEMO refers to G-NAF FAQ's on the website psma.com.au that "G-NAF contains addresses for physical locations, not postal locations".
60.	Powerlink	We agree with the addition of this field if it is to be populated by AEMO.	AEMO notes the respondent's support for the proposed change.
61.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
62.	Red and Lumo	Red and Lumo strongly recommend that G-NAF ID should be added in, and that in the first instance this field should be populated by AEMO for consistency and to ensure accuracy. Thereafter it can be managed by the LNSPs.	AEMO notes the respondent's support for the proposed change and refers to the response to Table 9, Item 48.
63.	SA Power	SA Power Networks do not hold this information within our systems as we use other reference data to establish and maintain an accurate site address information and we would not want to be responsible for the provision of this information. If AEMO proceed with being the owner and therefore responsible for the provision and maintenance of this data, then AEMO will need to ensure they have in place a process that would quickly maintain this information in line with any ongoing changes that the LNSP makes to other site address fields.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48. AEMO also notes that DPID is currently updated quarterly and G-NAF would follow the same the process.
64.	TasNetworks	TasNetworks agree that AEMO could populate the field based on addresses, however we would need to evaluate the viability of populating them going forward. We don't see any benefit from a DNSP point of view to populate this field. Could AEMO consider populating the G-NAF via regular updates?	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 48.
65.	United Energy	United Energy does not support the use of G-NAF PID as the benefits would not outweigh the cost and complexity of introducing this change.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 48.

No.	Consulted person	Comment	AEMO response
66.	Vector Metering	Maybe; The biggest issue on addresses relates to new suburbs and new connections; This is because Streets have not been named or sign posted, or change their name so it can be difficult to accurately know you are in the correct location; G-NAF data states it takes between 2 and 6 months to get updated and made available. Presumably it will be like other sources e.g. Lands and Survey data and will most likely be well after when a retailer needs to install a meter. Once a meter is in place and its GPS location is in MSATS there is no need for the G-NAF Data	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
Q33 Do you agree with the proposal to add G-NAF PID to MSATS if the data were populated entirely by LNSPs?			
67.	AGL	AGL believes that it is more efficient for AEMO to populate the existing data in MSATS with the networks being responsible for populating MSATS as part of NMI creation.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
68.	Alinta	Alinta Energy would prefer the option proposed in question 32	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
69.	Aurora Energy	Aurora Energy agrees with AEMO's proposed approach	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
70.	Ausgrid	Ausgrid would like to highlight that at the standing data workshop, it was identified that there was going to be further work and analysis completed on the viability and cost benefit of including this field. G-NAF is not always available when creating NMI standing data for new sites, it may be some time before this data is made available. In addition, the maintenance of these fields is limited to how often the GNAF database is updated. Ausgrid notes that one of the G-NAF limitations is that G-NAF supports the delivery address and not the site address.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
71.	AusNet	As per AusNet Services response to Question 32.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
72.	CitiPower Powercor	CitiPower Powercor does not support this proposal.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
73.	Endeavour Energy	No, we disagree with the proposal to add GNAF PID if the distributor is obligated to populate and maintain this field in MSATS. See our comments to question 32.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
74.	Energy Australia	If the GNAF-PID was only going to proceed if it was updated by the LNSP, we would support this approach as well.	AEMO notes the respondent's support and comment for the proposed change.

No.	Consulted person	Comment	AEMO response
75.	Energy Queensland - Energex and Ergon Energy Network	No	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
76.	ERM Power	Yes – We need to investigate and understand the benefits, especially if we are going ahead with the structured addresses.	AEMO notes the respondent's support for the proposed change.
77.	EvoEnergy	Disagree as this information is not available when NMI creation happens within network systems. Field should be Required, not Mandatory.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
78.	Intellihub	Yes	AEMO notes the respondent's support for the proposed change.
79.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
80.	Origin Energy	Yes, Origin agrees with the proposal to add G-NAF PID to MSATS if the data were populated entirely by LNSPs.	AEMO notes the respondent's support for the proposed change.
81.	PLUS ES	PLUS ES has no comment.	AEMO notes the respondent's comment.
82.	Powerlink	We don't agree with the proposal to add this field if it's to be populated by the LNSP as we currently don't store this information and a requirement on us to manage this information would be time-consuming for little value on WIGS NMIs	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
83.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
84.	Red and Lumo	Red and Lumo would support the LNSPs being entirely responsible for the population.	AEMO notes the respondent's support for the proposed change.
85.	SA Power	SA Power Networks does not support the provision of this information – we believe that structured and accurate site address information is a better solution rather than creating another reference point that may be incorrect and misleading.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
86.	TasNetworks	No	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.

No.	Consulted person	Comment	AEMO response
87.	United Energy	United Energy does not support this proposal.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
88.	Vector Metering	See 32; Will accurate G-NAF Data be available at NMI Allocation? Presumably the retailer will need to provide this to the DB, much like the address today…Who provides this to the Retailer?	AEMO notes the respondent's comment and refers to the response in Table 9, Item 48.
Q34 If AEMO were to add the G-NAF PID field (which would uniquely identify a physical address), do participants believe there is use in keeping the DPID field?			
89.	AGL	AGL sees value in maintaining the DPID information as this relates to Australia Post, and a substantial amount of correspondence sis still issued to customers via Australia Post. AGL suggest that this field be maintained for an additional 5 years at which time an assessment is made to determine if it should be retained.	AEMO notes the respondent's comment and. AEMO considers the proposed G-NAF PID field would supersede the DPID. As such, AEMO will assess whether DPID is still required after a transition period.
90.	Alinta	Alinta Energy would support not keeping the DPID field.	AEMO notes the respondent's comment
91.	Aurora Energy	Aurora Energy does not see the need to keep the DPID address as this is used as a postal address identifier and not a location identifier	AEMO notes the respondent's comment.
92.	Ausgrid	Ausgrid would like to highlight that at the standing data workshop, it was identified that there was going to be further work and analysis completed on the viability and cost benefit of including this field. G-NAF is not always available when creating NMI standing data for new sites, it may be some time before this data is made available. In addition, the maintenance of these fields is limited to how often the GNAF database is updated. Ausgrid notes that one of the G-NAF limitations is that G-NAF supports the delivery address and not the site address. The DPID should remain, until analysis has been conducted on the use of GNAF.	AEMO notes the respondent's comment and refers to the responses in Table 9, Items 1, 48 and 89.
93.	AusNet	AusNet Services does not support the inclusion of the DeliveryPointIdentifier field or the G-NAF PID fields.	AEMO notes the respondent's comment.
94.	CitiPower Powercor	CitiPower Powercor does not support the use of G-NAF PID and recommends AEMO retains the DPID field.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 89.
95.	Endeavour Energy	Regardless of whether GNAF PID is added to MSATS or not, we suggest that DPID be removed because it does not provide any value to industry.	AEMO notes the respondent's comment

No.	Consulted person	Comment	AEMO response
96.	Energy Australia	No, we believe that the G-NAF PID references the DPID. The only consideration is that it can take a few months for G-NAF PID to be updated, in this period it might be useful to have the DPID, as it is updated quicker.	AEMO notes the respondent's comment and notes DPID is not in G-NAF. AEMO refers to G-NAF FAQ's on the website psma.com.au that "G-NAF contains addresses for physical locations, not postal locations".
97.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex support the removal of the DPID Field.	AEMO notes the respondent's support for the proposed change.
98.	ERM Power	Yes – We requires the DPID field for address/property creation. We need to understand the G-NAF field and system impact in details.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 89.
99.	EvoEnergy	No, remove DPID.	AEMO notes the respondent's comment.
100.	Intellihub	No	AEMO notes the respondent's comment.
101.	Metering Dynamics	No	AEMO notes the respondent's comment.
102.	Origin Energy	Origin supports keeping the DPID field.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 89.
103.	PLUS ES	PLUS ES understands that there is a % of locations that the G-NAF PID will not identify. DPID should be maintained if it provides value to participants. This field should be Required. Provide if you have the information.	AEMO notes the respondent's comment and refers to the response in Table 9, Item 89.
104.	Powerlink	No, the additional of the G-NAF PID field would make the DPID redundant.	AEMO notes the respondent's support for the proposed change.
105.	Powermetric	Yes	AEMO notes the respondent's comment
106.	Red and Lumo	Yes - Red and Lumo believe that at the very least for a transition period the DPID field should be kept as participants get used to utilising G-NAF ID. DPID should then be reviewed later on for removal.	AEMO notes the respondent's comment. AEMO notes data transition to the new and amended fields needs to occur and have included in section 4.10 of this draft report as a series of questions to help AEMO define the data transition plans.
107.	SA Power	SA Power Networks did not support the inclusion of the DPID field when previously included in MSATS by AEMO.	AEMO notes the respondent's comment.

No.	Consulted person	Comment	AEMO response
108.	TasNetworks	No. TasNetworks do not use the DPID.	AEMO notes the respondent's comment.
109.	United Energy	United Energy does not support the use of G-NAF PID and recommends AEMO retains the DPID field.	AEMO notes the respondent's comment and refers to the response in Table 9 item 89.
110.	Vector Metering	DPID is a postal address, G-NAF is a physical location; Presumably these are used for different purposes; We don't use DPID.	AEMO notes the respondent's comment.
Q35 Would your organisation support adding Section Number and DP Number if G-NAF PID were also to be added?			
111.	AGL	AGL understands that if GNAF is used, then Section No and DP No should not be required, and therefore this information is unnecessary.	AEMO notes the respondent's comment.
112.	Alinta	Alinta Energy would support including the Section Number and DP number.	AEMO notes the respondent's support for the proposed change.
113.	Aurora Energy	Aurora Energy would support this approach	AEMO notes the respondent's support for the proposed change.
114.	Ausgrid	No, structured addresses have proven in the past to alleviate site identification issues. See above comments on GNAF.	AEMO notes the respondent's comment.
115.	AusNet	AusNet Services supports the introduction of Section Number and DP Number for the NSW Jurisdiction, it does not support the introduction of these fields for the VIC Jurisdiction even if the G-NAF PID was not added.	AEMO notes the respondent's support for the proposed change for NSW only.
116.	CitiPower Powercor	CitiPower Powercor does not support the use of G-NAF PID.	AEMO notes the respondent's comment.
117.	Endeavour Energy	Regardless of whether GNAF PID is added to MSATS or not, we suggest that Section Number and DP Number be added to MSATS. This is because from our experience it can take 6 months or longer for the GNAF PID to be issued for a site. From the time a NMI is populated in MSATS and when the GNAF PID is populated in MSATS, retailers could confirm a NMI by checking the Section Number and DP Number fields. Even when the GNAF PID is populated in MSATS, customers are more likely to know their Lot, Section Number and/or DP Number than the GNAF PID, therefore retailers could confirm a NMI by checking the Section Number and DP Number fields against the information provided to them by the customer. Also, should AEMO take on the	AEMO notes the respondent's support for the proposed change and agree that the addition of these fields will support NMI creation in NSW. Section/DP numbers are discoverable from G-NAF but AEMO agrees that these are not available at the NMI creation stage.

No.	Consulted person	Comment	AEMO response
		responsibility to populate the GNAF PID then Section Number and DP Number is required to uniquely identify and link the GNAF PID to the right NMI.	
118.	Energy Australia	We support the inclusion of Section Number, as this has been highlighted as a requirement in NSW. EnergyAustralia supports any additions that will reduce issues and discrepancies on address or meter location.	AEMO notes the respondent's support for the proposed change.
119.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex believe this is not relevant in Queensland.	AEMO notes the respondent's comment.
120.	ERM Power	No	AEMO notes the respondent's comment.
121.	EvoEnergy	Yes, as we could use it in the ACT to assist in uniquely identifying an address (we also have a Section Number but could map the DP number field as our Block Number).	AEMO notes the respondent's support for the proposed change.
122.	Intellihub	No	AEMO notes the respondent's comment.
123.	Metering Dynamics	Our understanding is that these fields would not be required if the G-NAF PID is added as they are identifiable via the G-NAF PID.	AEMO notes the respondent's comment.
124.	Origin Energy	No comment	AEMO notes the respondent's comment.
125.	PLUS ES	PLUS ES recommends the field to be Required	AEMO notes the respondent's comment.
126.	Powerlink	No, these fields provide no value for WIGS NMIs.	AEMO notes the respondent's comment.
127.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
128.	Red and Lumo	Red and Lumo have no specific stand on having the section number and DP number added in, if G-NAF was added.	AEMO notes the respondent's comment.
129.	SA Power	SA Power Networks would be supportive of the inclusion of Section Number and DP Number only.	AEMO notes the respondent's support for the proposed change.
130.	TasNetworks	Section and DP numbers N/A for TasNetworks.	AEMO notes the respondent's comment.
131.	United Energy	United Energy does not support the use of G-NAF PID.	AEMO notes the respondent's comment.

No.	Consulted person	Comment	AEMO response
132.	Vector Metering	Depends on timing availability of G-NAF. See 32 and 33.	AEMO notes the respondent's comment.
Q36 Would your organisation support adding Section Number and DP Number if G-NAF PID were not to be added?			
133.	AGL	If GNAF is not included, then the Section No and DP No would be required by NSW DBs for NMI creation. Unless other jurisdictions require it, then these fields should only be required for NSW.	AEMO notes the respondent's support for the proposed change.
134.	Alinta	Alinta Energy would support including the Section Number and DP number.	AEMO notes the respondent's support for the proposed change.
135.	Aurora Energy	Aurora Energy would prefer the G-NAF PID approach	AEMO notes the respondent's comment.
136.	Ausgrid	No, structured addresses have proven in the past to alleviate site identification issues.	AEMO notes the respondent's support for the proposed change.
137.	AusNet	AusNet Services believes, as per the pre-consultation workshop that Section Number and DP were only required for the NSW Jurisdiction. AusNet Services does not support the inclusion of Section Number and DP Number for the VIC Jurisdiction nor the inclusion of the G-NAF PID as per our response to Question 33.	AEMO notes the respondent's support for the proposed change for NSW only.
138.	CitiPower Powercor	CitiPower Powercor does not support the use of G-NAF PID.	AEMO notes the respondent's comment.
139.	Endeavour Energy	Regardless of whether GNAF PID is added to MSATS or not, we suggest that Section Number and DP Number be added to MSATS. See our comments to question 35.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 9, Item 117.
140.	Energy Australia	Yes; however, our preference is for both, and at a minimum G-NAF PID.	AEMO notes the respondent's support for the proposed change.
141.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex believe this is not relevant in Queensland.	AEMO notes the respondent's comment.
142.	ERM Power	No	AEMO notes the respondent's comment.
143.	EvoEnergy	Yes, preferred option.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
144.	Intellihub	No	AEMO notes the respondent's comment.
145.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
146.	Origin Energy	No comment	AEMO notes the respondent's comment.
147.	PLUS ES	PLUS ES recommends the field to be Required	AEMO notes the respondent's comment.
148.	Powerlink	No, these fields provide no value for WIGS NMIs.	AEMO notes the respondent's comment.
149.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
150.	Red and Lumo	Red and Lumo strongly recommend that G-NAF ID be added, not only as it mitigates the need for more additional fields (DP number, Section, DPID), but it is an ID which remains consistent with that property - and still remains linked if that property becomes subdivided. However, if it was not added, we have no specific position on having Section Number or DP Number.	AEMO notes the respondent's comment.
151.	SA Power	SA Power Networks would be supportive of the inclusion of Section Number and DP Number only.	AEMO notes the respondent's support for the proposed change.
152.	TasNetworks	Section and DP numbers N/A for TasNetworks.	AEMO notes the respondent's comment.
153.	United Energy	United Energy does not support the use of G-NAF PID.	AEMO notes the respondent's comment.
154.	Vector Metering	Yes	AEMO notes the respondent's support for the proposed change.

Table 10 Feeder Class

No.	Consulted person	Comment	AEMO response
Q37 Do you agree with the proposal to make Feeder Class required for the jurisdiction of Queensland?			
1.	AGL	This is required for QLD, so it makes sense to retain it for QLD, on the basis that EQ maintains it.	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
2.	Alinta	Alinta Energy supports addition of this field.	AEMO notes the respondent's support for the proposed change.
3.	Aurora Energy	Aurora Energy has no preference	AEMO notes the respondent's comment.
4.	Ausgrid	No Comments	
5.	AusNet	AusNet Services supports making Feeder Class 'Required' for the QLD Jurisdiction only.	AEMO notes the respondent's support for the proposed change.
6.	CitiPower Powercor	CitiPower Powercor does not believe this change is relevant in Victoria.	AEMO notes the respondent's comment.
7.	Endeavour Energy	Yes, we agree with making Feeder Class required for QLD but optional for other jurisdictions because this field is predominately only used in QLD.	AEMO notes the respondent's support for the proposed change.
8.	Energy Australia	Yes, Feeder Class should be made required in QLD, as this has been highlighted as a requirement in QLD.	AEMO notes the respondent's support for the proposed change.
9.	Energy Queensland - Energex and Ergon Energy Network	Ergon Energy Network and Energex believe this is only required in ERGONETP Network area rather than whole of Queensland.	AEMO notes the respondent's comment. AEMO intends to make the field 'Required in the Queensland jurisdiction where relevant'.
10.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change.
11.	EvoEnergy	Yes	AEMO notes the respondent's support for the proposed change.
12.	Intellihub	Yes.	AEMO notes the respondent's support for the proposed change.
13.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
14.	Origin Energy	Yes, Origin agrees with the proposal to make Feeder Class required for the jurisdiction of Queensland.	AEMO notes the respondent's support for the proposed change.
15.	PLUS ES	PLUS ES has no comment.	

No.	Consulted person	Comment	AEMO response
16.	Powerlink	We agree for non-WIGS NMIs	AEMO notes the respondent's comment and refer to the response in Table 10, Item 9.
17.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
18.	Red and Lumo	No comment at this time.	
19.	SA Power	SA Power Networks support this proposed change.	AEMO notes the respondent's support for the proposed change.
20.	TasNetworks	N/A for TasNetworks	AEMO notes the respondent's comment.
21.	United Energy	United Energy does not believe this change is relevant in Victoria.	AEMO notes the respondent's comment.
22.	Vector Metering	Yes. Doesn't impact MP's.	AEMO notes the respondent's support for the proposed change.

Table 11 Transmission Node Identifier2

No.	Consulted person	Comment	AEMO response
Q38 Do you agree with the proposal to introduce TNI2?			
1.	AGL	AGL can see value in the use of TNI2 for some of the changes arising from Global Settlements, but noting the discussion held at the Standing Data workshop, AGL believes that AEMO should work closely with DBs to determine whether or not this inclusion add the value expected and can be made useful for Global Market settlements.	AEMO notes the respondent's comment. AEMO proposes to include this field to provide data for Global Settlement and will populate this field on behalf of the Market.
2.	Alinta	Alinta Energy supports addition of this field.	AEMO notes the respondent's support for the proposed change.
3.	Aurora Energy	Aurora Energy has no preference	AEMO notes the respondent's comment.
4.	Ausgrid	Agree	AEMO notes the respondent's support for the proposed change.

No.	Consulted person	Comment	AEMO response
5.	AusNet	AusNet Services supports the inclusion of the TNI2 field provided AEMO populates this information ongoing.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 11, Item 1.
6.	CitiPower Powercor	CitiPower Powercor supports this proposal.	AEMO notes the respondent's support for the proposed change.
7.	Endeavour Energy	Yes, we agree with the proposal to add a TNI2 field because this will help AEMO to manage global settlements where there are cross boundary connection points.	AEMO notes the respondent's support for the proposed change.
8.	Energy Australia	Yes, we strongly support the introduction of TNI2. As a Local Retailer, we would see significant benefit in improving the accuracy of settlement for cross-border/boundary connection points.	AEMO notes the respondent's support for the proposed change.
9.	Energy Queensland - Energex and Ergon Energy Network	Yes	AEMO notes the respondent's support for the proposed change.
10.	ERM Power	Yes	AEMO notes the respondent's support for the proposed change.
11.	EvoEnergy	Yes	AEMO notes the respondent's support for the proposed change.
12.	Intellihub	Yes.	AEMO notes the respondent's support for the proposed change.
13.	Metering Dynamics	Yes	AEMO notes the respondent's support for the proposed change.
14.	Origin Energy	Yes, Origin agrees with the proposal to introduce TNI2.	AEMO notes the respondent's support for the proposed change.
15.	PLUS ES	PLUS ES agrees with the proposal to introduce TNI2 – given the limited volumes it could remain in MSATS only.	AEMO notes the respondent's support for the proposed change.
16.	Powerlink	We agree to the introduction of a TNI2 field provided it is populated by AEMO as this field provides no value for us.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 11, Item 1.

No.	Consulted person	Comment	AEMO response
17.	Powermetric	Yes	AEMO notes the respondent's support for the proposed change.
18.	Red and Lumo	Yes, Red and Lumo agree with the proposal to introduce TNI2 as it will enable the successful introduction of global settlements processing.	AEMO notes the respondent's support for the proposed change.
19.	SA Power	SA Power Networks support this proposed change.	AEMO notes the respondent's support for the proposed change.
20.	TasNetworks	Yes, but this is not relevant for TasNetworks.	AEMO notes the respondent's support for the proposed change.
21.	United Energy	United Energy supports this proposal.	AEMO notes the respondent's support for the proposed change.
22.	Vector Metering	Yes. Doesn't impact MP's.	AEMO notes the respondent's support for the proposed change.

NER Schedule 7.1

Table 12 NER Schedule 7.1 Rule Change Proposal

No.	Consulted person	Comment	AEMO response
Q39 Do you see any benefit in Schedule 7.1 remaining as-is? If so, please detail the benefit.			
1.	AGL	AGL broadly supports this move to minimise the requirements set out in Schedule 7.1 as it will allow greater flexibility for the market. AGL believes that Schedule 7.1 should contain some high level (but not exhaustive information) on what MSATS should contain. However, AGL believes that as NMI standing data is substantially for use by industry participants, and that a number of B2B processes either rely on it or are driven by the available NMI standing data that the overall governance of the NMI standing should rest jointly with AEMO and an industry body, such as the IEC, not just AEMO alone	AEMO notes that MSATS Standing Data enables the functioning of the market. The intent is to propose a Rule change which will provide flexibility for the future. If the Rule is changed, then, in the future, the change process through the Electricity Retail Consultative Forum will be the mechanism to proceed with any proposed procedural changes, including changes to MSATS Standing Data. This ERCF Change Process accepts change proposals that are registered via issue change forms (ICFs), including proposals from the IEC.

No.	Consulted person	Comment	AEMO response
			AEMO's proposal considers that any changes to MSATS Standing Data involves a procedure consultation, rather than a Rule change consultation. AEMO notes that B2B communications may be influenced by some MSATS Standing Data items, but are not directly linked to the business-to-market operations. AEMO proposes that the NER still provides that MSATS Standing Data fields are to be maintained as part of market procedures. Accordingly, AEMO intends to advance the Rule change proposal, on this basis.
2.	Alinta	Alinta Energy supports a review of Schedule 7.1 Alinta Energy believes that Schedule 7.1 should contain some high level information on what MSATS should contain.	AEMO notes the respondent's comment.
3.	Aurora Energy	Aurora Energy see no benefit in this remaining	AEMO notes the respondent's comment.
4.	Ausgrid	No	AEMO notes the respondent's comment.
5.	AusNet	AusNet Services does not see any benefit in retaining Schedule 7.1 in the NER.	AEMO notes the respondent's comment.
6.	CitiPower Powercor	CitiPower Powercor does not see any benefit in retaining Schedule 7.1 as-is.	AEMO notes the respondent's comment.
7.	Endeavour Energy	No, we do not see any benefit of Schedule 7.1 remaining as is. The current approach of listing all the required fields is too prescriptive and therefore does afford enough flexibility to manage changes to accommodate industry changes.	AEMO notes the respondent's comment.
8.	Energy Australia	EnergyAustralia agree that the process is lengthy and burdensome for what seem to be obvious changes, however, the main benefit is that any change/field removal would need to go through a thorough assessment and consultation process, thereby reducing the risk of a field being removed/changed in error.	AEMO notes the respondent's comment and refers to the response in Table 12, Item 1.
9.	Energy Queensland - Energex and Ergon Energy Network	No	AEMO notes the respondent's comment.

No.	Consulted person	Comment	AEMO response
10.	ERM Power	Yes	AEMO notes the respondent's comment.
11.	EvoEnergy	No, should not be detailed, but rather state the obvious minimum and changes to be consulted.	AEMO notes the respondent's comment.
12.	Intellihub	No	AEMO notes the respondent's comment.
13.	Metering Dynamics	No. In our opinion, Schedule 7.1 should only be providing the high-level requirements for the Metering Register and the details held within the relevant market procedures - MSATS Procedures (CATS, WIGS, Standing Data for MSATS, etc.).	AEMO notes the respondent's comment.
14.	Origin Energy	Origin's position is that there needs to be an NER Clause which makes it clear that fields are to be maintained by the relevant participant – not simply a procedure but also an obligation.	AEMO notes the respondent's comment and refers to the response in Table 12, Item 1.
15.	PLUS ES	PLUS ES does not see any benefit in retaining Schedule 7.1 as is.	AEMO notes the respondent's comment.
16.	Powerlink	No, it's currently too prescriptive and some fields listed haven't been implemented in MSATS.	AEMO notes the respondent's comment.
17.	Powermetric	Yes	AEMO notes the respondent's comment.
18.	Red and Lumo	There are some fields (e.g. Write Passwords) that do not belong in MSATS, but are required for the market. We will reassess our position at the completion of this project, but at this stage there is no harm in MSATS containing some of the schedule, but removal of the schedule is not required. This change has not been justified that it will meet the NEO in order for us to support it being removed.	AEMO notes the respondent's comment and notes that for any Rule change proposal the AEMC will assess if the NEO has been met to enable the proposal to proceed.
19.	SA Power	No response	AEMO notes the respondent's comment.
20.	TasNetworks	No	AEMO notes the respondent's comment.
21.	United Energy	United Energy does not see any benefit in retaining Schedule 7.1 as-is.	AEMO notes the respondent's comment.
22.	Vector Metering	No	AEMO notes the respondent's comment.
Q40 Do you support AEMO's proposal? If you do not, please detail why.			
23.	AGL	AGL broadly supports this move to minimise the requirements set out in Schedule 7.1 as it will allow greater flexibility for the market.	AEMO notes the respondent's support for AEMO's proposal and refers to the response in Table 12, Item 1.

No.	Consulted person	Comment	AEMO response
		AGL believes that Schedule 7.1 should contain some high level (but not exhaustive information) on what MSATS should contain. However, AGL believes that as NMI standing data is substantially for use by industry participants, and that a number of B2B processes either rely on it or are driven by the available NMI standing data that the overall governance of the NMI standing should rest jointly with AEMO and an industry body, such as the IEC, not just AEMO alone	
24.	Alinta	Alinta Energy broadly supports AEMO's proposal and can see how minimising the requirements of S7.1 will allow for greater flexibility in the market.	AEMO notes the respondent's support for AEMO's proposal.
25.	Aurora Energy	Aurora Energy would support this approach	AEMO notes the respondent's support for AEMO's proposal.
26.	Ausgrid	Ausgrid agrees with AEMO's proposal.	AEMO notes the respondent's support for AEMO's proposal.
27.	AusNet	AusNet Services supports AEMO's proposal to remove Schedule 7.1 within the NER.	AEMO notes the respondent's for AEMO's proposal and notes that AEMO is proposing to amend Schedule 7.1, not remove it.
28.	CitiPower Powercor	CitiPower Powercor supports this proposal.	AEMO notes the respondent's support for AEMO's proposal.
29.	Endeavour Energy	Yes, we support AEMO's proposal in principle. We reserve our decision when we see AEMO's detailed proposal.	AEMO notes the respondent's support for AEMO's proposal.
30.	Energy Australia	EnergyAustralia support the proposal, we are confident that AEMO has the processes in place to ensure that any change to the fields in MSATS will be analysed thoroughly, and not progressed if it is not in the best interest of the market or participants.	AEMO notes the respondent's support for AEMO's proposal.
31.	Energy Queensland - Energex and Ergon Energy Network	Yes	AEMO notes the respondent's support for AEMO's proposal.
32.	ERM Power	As previously commented, we see that the AEMC need to be involved in changes made in this space and that moving this information will remove them from these decisions	AEMO notes the respondent's comment and that AEMO is proposing to amend Schedule 7.1, not remove it and to submit a rule change proposal to the AEMC.

No.	Consulted person	Comment	AEMO response
33.	EvoEnergy	Yes	AEMO notes the respondent's support for AEMO's proposal.
34.	Intellihub	Yes	AEMO notes the respondent's support for AEMO's proposal.
35.	Metering Dynamics	Yes	AEMO notes the respondent's support for AEMO's proposal.
36.	Origin Energy	As per question 39, this should go hand in hand with the standing data review feedback and NER will need to align to reflect those mandatory fields once the standing data fields are confirmed.	AEMO notes the respondent's comment and refers to the response in Table 12, Item 14.
37.	PLUS ES	PLUS ES supports AEMO's proposal.	AEMO notes the respondent's support for AEMO's proposal.
38.	Powerlink	Yes, we support the proposal. We see this as a more efficient way for AEMO and participants to manage the rules requirement around what standing data should be required.	AEMO notes the respondent's support for AEMO's proposal.
39.	Powermetric	As previously commented, we see that the AEMC need to be involved in changes made in this space and that moving this information will remove them from these decisions	AEMO notes the respondent's comment and that AEMO is proposing to amend Schedule 7.1, not remove it and to submit a rule change proposal to the AEMC.
40.	Red and Lumo	No response	AEMO notes the respondent's comment.
41.	SA Power	SA Power Networks support this proposed change.	AEMO notes the respondent's support for AEMO's proposal.
42.	TasNetworks	Yes	AEMO notes the respondent's support for AEMO's proposal.
43.	United Energy	United Energy supports this proposal.	AEMO notes the respondent's support for AEMO's proposal.
44.	Vector Metering	Yes, remove the required MSATS content from Rules and place it in the procedures.	AEMO notes the respondent's support for AEMO's proposal.

Table 13 Fields referenced in the NER that are not implemented in MSATS

No.	Consulted person	Comment	AEMO response
Q41 Do you see any benefit in adding the aforementioned fields to MSATS? If so, in which table would you propose they be added and how can the quality of data be ensured?			
23.	AGL	AGL believes that generally the Rules should be sufficiently high-level ensuring clarity of obligation and governance, with specific details being managed through procedures. Having said that, the relevant information, where required, can be managed through other means.	AEMO notes the respondent's comment.
24.	Alinta	Alinta Energy does not see any value in adding other fields to MSATS, this information should be retained and maintained by the other accredited providers (MPB's and MDP's) and participants (MC's and LNSP's) so that they can carry out their obligations.	AEMO notes the respondent's comment.
25.	Aurora Energy	Aurora Energy does not see the benefit from adding these fields	AEMO notes the respondent's comment.
26.	Ausgrid	No	AEMO notes the respondent's comment.
27.	AusNet	AusNet Services does not see any benefit in adding the following data fields to MSATS. - Loss compensation calculation details - Data register coding details - 'Write' password (to be contained in a hidden or protected field) Publishing the write password in a system that provides the data to any retailer nominated metering provider, especially if they were transferred in error, would be a breach of security controls. AEMO would need to indemnify metering parties from losses in these circumstances.	AEMO notes the respondent's comment and with regards to the write password, AEMO has no intention of breaching security controls.
28.	CitiPower Powercor	CitiPower Powercor does not see any benefit in adding the fields in MSATS.	AEMO notes the respondent's comment.
29.	Endeavour Energy	No, we do not see any benefit of adding the 3 aforementioned fields. We do not believe that these fields provide value to any other party except for the metering service provider, therefore they are not required in MSATS.	AEMO notes the respondent's comment.
30.	Energy Australia	No, there should be a requirement for the information to be maintained by participants, but there is no need for it to be accessible via MSATS.	AEMO notes the respondent's comment.

No.	Consulted person	Comment	AEMO response
31.	Energy Queensland - Energex and Ergon Energy Network	No	AEMO notes the respondent's comment.
32.	ERM Power	No	AEMO notes the respondent's comment.
33.	EvoEnergy	These fields would add no benefit.	AEMO notes the respondent's comment.
34.	Intellihub	No	AEMO notes the respondent's comment.
35.	Metering Dynamics	No. We agree to these fields being removed from Schedule 7.1.	AEMO notes the respondent's comment.
36.	Origin Energy	Origin's position is to not include obsolete or irrelevant fields into MSATS.	AEMO notes the respondent's comment.
37.	PLUS ES	PLUS ES hasn't identified any potential business/market efficiencies driven by these fields being added to MSATS.	AEMO notes the respondent's comment.
38.	Powerlink	No, we see no benefit in adding any of these fields for WIGS NMIs.	AEMO notes the respondent's comment.
39.	Powermetric	No	AEMO notes the respondent's comment.
40.	Red and Lumo	No comment at this time.	AEMO notes the respondent's comment.
41.	SA Power	No response	AEMO notes the respondent's comment.
42.	TasNetworks	No	AEMO notes the respondent's comment.
43.	United Energy	United Energy does not see any benefit in adding the fields in MSATS.	AEMO notes the respondent's comment.
44.	Vector Metering	No	AEMO notes the respondent's comment.

Proposed Changes in Standing Data for MSATS Guideline

Table 14 Proposed changes in Standing Data for MSATS Guideline General

No.	Consulted person	Section No / Field Name	Comments	AEMO response
1.	Aurora Energy	3.2 NMI's Affected	All connection points where a transmission network connects to another transmission Network – Delete repeated word (points)	AEMO agrees and will update the guideline accordingly.
2.	Aurora Energy	4.1. Field definitions - Table 3 CATS_METER_REGISTER - Field definitions	Aurora Energy supports Manufacture and model be made mandatory	AEMO notes the respondent's support for the proposed change.
3.	Aurora Energy	4.1. Field definitions - Table 3 CATS_METER_REGISTER - Field definitions	Should Read Type Code not be Mandatory rather than required	AEMO will amend the field to Mandatory.
4.	Aurora Energy	4.1. Field definitions - Table 3 CATS_METER_REGISTER - Field definitions	NextScheduledReadDate – Should this not include MRAM Type 4a meters as well	AEMO notes the provision of NSRD is Mandatory for MDPs for manually read meters as per clause 2.4.(p) of the MSATS CATS Procedure v4.7. Manually read meters are determined by Installation Type Code – MRIM, MRAM or Basic. AEMO notes this change intends to align the MSATS for Standing Data guideline to the CATS Procedure and will change the wording in the guideline to 'Mandatory for manually read meters and Type 7 metering installations and Not Used for remotely read meters'.
5.	Aurora Energy	9.1. Field definitions Table 18 CATS_REGISTER_IDENTIFIER- Field definitions	RegisterID states For Interval Meters, the RegisterID must match the content of the 'Suffix' within the CATS_REGISTER_IDENTIFIER table. E.g. 'E1', 'B1', 'Q1', 'K1', etc. Suffix states For Interval Meters, the Suffix in the	AEMO notes the respondent's comment and refers to the response in Table 1, Item 75.

No.	Consulted person	Section No / Field Name	Comments	AEMO response
			CATS_REGISTER_IDENTIFIER table must match the RegisterID in the CATS_REGISTER_IDENTIFIER table. E.g. 'E1', 'B1' However this is a known issue that these do not match yet they are mandatory and while as mentioned previously, while this needs to be tidied up – this is probably not the best time to carry out this exercise.	
6.	AusNet	Table 4 CATS_METER_REGISTER – Browser cross reference • Current Transformer Location • Current Transformer Type • Current Transformer Ratio • Current Transformer Accuracy Class • Voltage Transformer Location • Voltage Transformer Type • Voltage Transformer Ratio • Voltage Transformer Accuracy Class	The format of these fields is listed as 'VARCHAR' in the Browser cross reference table when all other of the same format type are 'VARCHAR2, should these also be 'VARCHAR2'?	AEMO agrees and will change these items to VARCHAR2.
7.	AusNet	Table 5 CATS_METER_REGISTER – Examples • Estimation Instructions • Point	These fields have been marked as 'Removed', the corresponding examples need to be removed from Table 5 CATS_METER_REGISTER - Examples	AEMO agrees and will remove the examples in Table 5.
8.	AusNet	Table 3 CATS_METER_REGISTER – Field definitions Table 4 CATS_METER_REGISTER – Browser cross reference Table 5 CATS_METER_REGISTER – Examples • Measurement Type	As per Section 3.1.6 of the Issues Paper, AEMO has proposed to remove this field therefore this field should be removed from all relevant tables.	AEMO agrees and will remove the fields from all relevant tables.
9.	AusNet	Table 3 CATS_METER_REGISTER – Field definitions	As per Section 3.1.1 of the Issue Paper, AEMO has proposed these field will require enumerated lists, therefore they are longer free text. The	AEMO agrees and will update the field description.

No.	Consulted person	Section No / Field Name	Comments	AEMO response
		• Manufacturer • Model	description for these field requires updating to align to the proposed approach.	
10.	AusNet	Table 4 CATS_METER_REGISTER – Browser cross reference • Shared Fuse	As per Section 3.1.4 of the Issues Paper "the AEMC does not expect that LNSPs proactively inspect sites to gather this information, and as such, AEMO proposes that this field be populated with the values of "Yes", "No", and "Unknown"." However, the format stipulated in Table 4 only stipulates CHAR(2). The format requires updating to cater for AEMO's proposal to include "Unknown".	AEMO notes that even though it is char(2), the options available could be Y = Yes; N = No; U = Unknown. AEMO also refers to the responses in Table 5.
11.	Endeavour Energy	Enumerated values to be easily modified	We note that AEMO is proposing to have enumerated fields. We support this in principle as it will allow for higher quality data to be populated in MSATS. However, this must be supported with a solution that will allow for addition, deletion or modification of the enumerated values to be done quickly, and therefore should not have to be subjected to a procedure consultation or a schema change to make these changes. We note that some of the enumerated values are defined in the Standing Data for MSATS document which suggests that consultation is required if the enumerated values were to be added, deleted or modified. We suggest that a similar approach to Network Tariff Code be adopted whereby the enumerated values are not defined in a document but is instead maintained within MSATS.	AEMO will review the options for how enumerated fields will be built in MSATS and will take this into consideration at design and implementation, alongside other related IT projects. AEMO is committed to the continuous uplift of the solutions which underpin market operations and support positive consumer outcomes. The Standing Data for MSATS document is a guideline, not a procedure. Hence changes to it does not require formal Rules consultation.
12.	Endeavour Energy	Optional fields	We note that AEMO is proposing to remove or change, where possible, all the optional fields. However the fields Hazard, Location and Aggregate are still listed as optional. We suggest AEMO consider changing these fields to 'required'.	AEMO agrees that the fields Hazard, Location and Aggregate should be made Required and have updated the guideline accordingly.
13.	PLUS ES	General	PLUS ES understood the discussion was to eliminate the optional fields in MSATS. Hence, it recommends that the fields should be amended to 'Required'. i.e. Measurement Type should be 'Required' with a note in the description field "NOT USED for Type 6&7 Transfers.	AEMO will review the items left as Optional in the guideline including these fields and suggest options where

No.	Consulted person	Section No / Field Name	Comments	AEMO response
				'Required for xxx, Not Used for xxx' could apply.
14.	PLUS ES	Read Type Code	PLUS ES recommends that this field should be made Mandatory. Participants will know this information. The Bulk Upload Tool should be considered for initial bulk population of fields.	The field has been amended from Required to Mandatory. AEMO is reviewing the data cleansing and transition phases for the proposed changes in the MSATS Standing Data Review. AEMO has posed questions in section 4.10 of this Draft Report to gather information on participant requirements for the cleansing and transition phases.
15.	PLUS ES	Shared Fuse v45	PLUS ES notes that the value of Unknown has been discussed in the issue paper. But has been missed from the 'Standing Data for MSATS' document. PLUS ES suggests for the description field to be reworded: A flag to indicate whether the metering installation has a shared fuse, where: 'Y' = shared fuse is present. 'N' = shared fuse is not present and 'Unknown' = not known	AEMO has updated the draft versions of the Standing Data for MSATS to include Unknown based on feedback received from the Issues Paper. AEMO notes this field is subject to any changes in the AEMC's Introduction of metering coordinator planned interruptions Rule Change ERC0275 final determination.
16.	PLUS ES	Shared Fuse v51	This field has been indicated to be updated in v45. PLUS ES suggests that this version is then not changed marked in v51 doc, similarly aligned with the approach taken with the field Read Type Code field.	AEMO will amend the change marking.
17.	PLUS ES	GPS Co-ordinates	See comments to questions in issue paper.	AEMO refers to the responses in Table 6 regarding GPS Co-ordinates.

No.	Consulted person	Section No / Field Name	Comments	AEMO response
18.	PLUS ES	Hazard	PLUS ES suggests this should be a Required field – instead of optional	AEMO agrees that this field should be made Required and have updated the guideline accordingly.
19.	PLUS ES	Location	PLUS ES suggests this should be a Required field – instead of optional.	AEMO agrees that this field should be made Required and have updated the guideline accordingly.
20.	PLUS ES	MeterMalfunctionExemptionNumber	PLUS ES supports the inclusion of this field in MSATS as it will drive process efficiencies and delivers visibility to all affected participants. The MC has the obligation to raise a Meter Exemption – AEMO provides the exemption number. For this reason PLUS ES recommends that the party to provide the value in MSATS efficiently would be AEMO. Furthermore consideration needs to be provided to the removal of this information when the meter malfunction has been rectified.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 15.
21.	PLUS ES	MeterMalfunctionExemptionExpiryDate	PLUS ES supports the inclusion of this field in MSATS as it will drive process efficiencies and delivers visibility to all affected participants. The MC has the obligation to raise a Meter Exemption – AEMO provides the exemption expiry date. For this reason PLUS ES recommends that the party to provide the value in MSATS efficiently would be AEMO. Furthermore consideration needs to be provided to the removal of this information when the meter malfunction has been rectified.	AEMO notes the respondent's support for the proposed change and refers to the response in Table 1, Item 37.
22.	PLUS ES	NextScheduledReadDate	PLUS ES suggests Remove "For all type 5 and 6 meters" from Standing Data Required field. This field is also required for MRAM meters. Some proposed wording changes for the description field: Indicates the Next Scheduled Read Date for the meter, when manual Meter Readings are required.	AEMO agrees with respondent's comment and will make the suggested changes.
23.	Powerlink	Wholesale Standing Data	The minimum required meter standing data for TNSP wholesale connection points (WIGS) is very different to that required for DNSPs or Local Retailer connection point metering. (eg TNSPs only have Type 1 to 3 metering). If possible TNSP's should be excluded from	AEMO does not intend to create a separate set of standing data fields for wholesale NMIs. AEMO intends to make a number of fields

No.	Consulted person	Section No / Field Name	Comments	AEMO response
			needing to maintain fields that have no relevance to wholesale NMIs. Due to these differences it is suggested that TNSP's have different mandatory field requirements. The feedback provided by PQ has highlighted these specific fields where different validation requirement is preferred.	Required rather than Mandatory to accommodate some of the differences across all NMIs. Required allows for where data does not exist, the field does not need to be populated.

Table 15 Proposed changes in Standing Data for MSATS Guideline 4.5

No.	Consulted person	Section No / Field Name	Comments	AEMO response
24.	EvoEnergy	4 - SerialNumber	Incorporate changes from 5.0 into this version now as it adds clarity and start date aligns. "Use a dummy value for UMCP (Type 7), logical (meters) and non-contestable unmetered loads. Except for UMCP, logical and non-contestable unmetered loads (where a dummy value is used), SerialNumber should be as displayed on the physical device (also known as property number if it exists), otherwise the meter manufacturer's serial number."	AEMO will be releasing different versions of the Standing Data for MSATS Guideline as part of the MSDR consultation, those versions will have different changes and effective dates which will align with changes, versioning, and timeline of other project (i.e. 5MS, customer switching) more details are provided in the Draft Report with regards to versions.
25.	EvoEnergy	8 – ElectricityDataStream/Suffix	Some participants will be switching over to E and Q values before 6 Feb 2022, so why is this document not including that option. Suggest removing all the wording that starts from "If the MeterInstallCode is…"	AEMO notes these changes were part of the 5MS program. Data transition considerations are being formulated as part of the 5MS program particularly through the 5MS/GS Metering Transition Plan.
26.	EvoEnergy	9 – SerialNumber	See note above for 4	AEMO notes these changes were part of the 5MS program. Data transition considerations are being formulated as part of the 5MS program particularly

No.	Consulted person	Section No / Field Name	Comments	AEMO response
				through the 5MS/GS Metering Transition Plan.
27.	EvoEnergy	9 – Suffix	See note above for 8 Remove the last two sentences referring to interval and basic data streams.	AEMO notes these changes were part of the 5MS program. Data transition considerations are being formulated as part of the 5MS program particularly through the 5MS/GS Metering Transition Plan.
28.	EvoEnergy	12	Need to remove all reference to NET suffix and Nx, to allow a smoother transition to the new values. Remove the following sentences, or parts thereof: [paragraph 3] "For settlements purposes this data must be 'NET' [Export from network, less import to network] and will be 'Nx' for an interval Datastream, or numeric for an Accumulation Meter." [dot point 2] "For settlements purposes, Interval Meter Datastreams will be the NET suffix (format Nx) and for Accumulation Meter Datastreams the suffix value is numeric." [dot poin 3] "…Nx…	AEMO notes these changes were part of the 5MS program. Data transition considerations are being formulated as part of the 5MS program particularly through the 5MS/GS Metering Transition Plan.
29.	EvoEnergy	13.2	Fix the header spelling	AEMO will amend the heading.
30.	EvoEnergy	14.3 – Table 31	Should add examples here with different RegisterID's to show flexibility and current values in MSATS. Data Element: Values / Serial Number / RegisterID / UnitOfMeasure / TimeOfDay / Suffix ABCD1111 / 002 / KWH / INTERVAL / E1 ABCD1111 / 001 / KWH / INTERVAL / B1 ABCD1111 / 004 / KVARH / INTERVAL / Q1 ABCD1111 / 003 / KVARH / INTERVAL / K1 ABCD1111 / 005 / VOLTS / INTERVAL / V1	AEMO notes these changes were part of the 5MS program. Data transition considerations are being formulated as part of the 5MS program particularly through the 5MS/GS Metering Transition Plan.

Table 16 Proposed changes in Standing Data for MSATS Guideline 5.1

No.	Consulted person	Section No / Field Name	Comments	AEMO response
1.	EvoEnergy	Version Release History	Version 5.1 and now version 5.0 are missing the version 4.5 changes in here.	AEMO will update the guideline and refers to the response in Table 15, Item 1.
2.	EvoEnergy	8 – ElectricityDataStream/Suffix	Wording needs to be corrected to help with interpretation. Change to: "The value must be ~~a~~ valid as per Datastream suffix details specified in the NMI Procedure."	AEMO will amend this sentence.
3.	EvoEnergy	9.1 – RegisterID and Suffix	Why was this added? Currently the RegisterID is an identifier to show that there are different channels on a meter that may have different NetworkTariffCode's, TimeOfDay's and ControlledLoad's assigned. The Suffix then informs you what DataStream to expect for that RegisterID when you receive an MDFF file. The RegisterID may not match the Suffix at all for any meter type. Remove the two dot points after second sentence in both table references. Why make this matching as it removes a lot of flexibility. Need to also correct v5.0.	AEMO notes these changes were part of the 5MS program. Data transition considerations are being formulated as part of the 5MS program particularly through the 5MS/GS Metering Transition Plan.
4.	EvoEnergy	12	Need to remove all reference to NET suffix and Nx, to allow clarity to the new values. Remove the following sentences, or parts thereof: [paragraph 6] "For settlements purposes this data must be 'NET' [Export from network, less import to network] and will be 'Nx' for an interval Datastream, or numeric for an Accumulation Meter." [dot point 2] "For settlements purposes, Interval Meter Datastreams will be the NET suffix (format Nx) and for Accumulation Meter Datastreams the suffix value is numeric."	AEMO notes these changes were part of the 5MS program. Data transition considerations are being formulated as part of the 5MS program particularly through the 5MS/GS Metering Transition Plan.

No.	Consulted person	Section No / Field Name	Comments	AEMO response
			[dot poin 3] "...Nx... Last paragraph needs to be split as it was in previous versions.	
5.	EvoEnergy	14.3 – Table 50	Should add examples here with different RegisterID's to show flexibility and current values. Data Element: Values / Serial Number / RegisterID / UnitOfMeasure / TimeOfDay / Suffix ABCD1111 002 KWH INTERVAL E1 ABCD1111 001 KWH INTERVAL B1 ABCD1111 004 KVARH INTERVAL Q1 ABCD1111 003 KVARH INTERVAL K1 ABCD1111 005 VOLTS INTERVAL V1	AEMO notes these changes were part of the 5MS program. Data transition considerations are being formulated as part of the 5MS program particularly through the 5MS/GS Metering Transition Plan.

Other Issues Related to Consultation Subject Matter

Table 17 Other Issues Raised

No.	Consulted person	Heading	Comments	AEMO response
1.	Metering Dynamics	Availability of resources for systems development and testing (including industry testing)	As has been noted throughout this consultation process, Metering Dynamics is concerned that the impacts of other market rule changes, including for example, the Five-Minute Settlement, Global Settlement, MC Planned Interruptions, and Customer Switching, are not adequately being considered. These rule changes require businesses to allocate resources, identify and develop processes and systems, test changes both internally and externally, and then be ready to deploy. As such, Metering Dynamics strongly recommends that AEMO considers the timing and potential alignment of these to ensure minimum impact on businesses.	AEMO is considering all other projects while doing the work for MSDR, as a result different versions of the procedures and guidelines with different changes and effective dates will be produced in the MSDR consultation which aligns with changes, versioning, and effective dates of all other projects that are currently going on such as Customer Dara Rights, 5MS, customer switching, etc.
2.	AGL	Controlled Load enumerations	Align B2B enumerations with standing data enumerations	AEMO notes that aligning the standing data enumerations with the B2B

No.	Consulted person	Heading	Comments	AEMO response
				enumerations is a starting point but also has become aware that this alignment would not cover all enumerations requested through this review and is proposing a broader set.
3.	ACCC	Data field indicating when a NMI has changed customer	A key tenet of the CDR is secure sharing of consumer data – that is, that the correct data relating to an authenticated consumer is shared with an accredited third party, in line with the consumer's consent. We consider a data field indicating when a NMI has changed customer (i.e. a change in account holder field) will be critically important in ensuring that data sharing within the CDR regime operates in a secure and efficient manner. Currently, AEMO does not capture information about when a NMI changes hands. All CDR authentication models for energy currently being considered will require some retailer involvement. However, without information about when a NMI has changed customer, additional retailer involvement (from the consumer's current retailer and potentially past retailer or retailers) will be required to determine that the customer making the data sharing request was, is and continues to be linked to the NMI for the time period relating to the data sharing request. The purpose of this check is to avoid inadvertent sharing of data that does not relate to a customer currently linked to the NMI (for example, data relating to a previous occupant of a premises). A flag indicating when a NMI has changed customer would alleviate the need for further involvement of the customer's current retailer (for ongoing data sharing) or past retailer or retailers in this aspect of the authentication model. While relevant to one-off data sharing requests, this is particularly important where there is an ongoing data sharing arrangement or a request for historical data sets where AEMO is the data holder. We note that, for the purposes of defining this field, further analysis is required to define what a 'change in customer' means. Ideally, we would prefer the definition to be aligned to the definition of who is eligible to make CDR requests, which, while still to be settled in the designation instrument and CDR rules, is likely to be the electricity account holder.	AEMO refers to the discussion in section 6.1 of this draft report. AEMO proposes to add two linked fields and a requirement for the FRMP to advise of a change in customer: Fields 1. 'Yes' flag to indicate the Account Holder has changed 2. Effective date to identify the date the account holder changed Requirement The FRMP must provide this flag and date on the day of being advised of a change in account holder.

No.	Consulted person	Heading	Comments	AEMO response
4.	CitiPower Powercor	General	CitiPower Powercor has some general concerns about the volumes of CRs that would be required to update MSATS – our daily limits would need to be lifted considerably or does AEMO propose an alternative way to make these updates?	AEMO is reviewing the data cleansing and transition phases for the proposed changes in the MSATS Standing Data Review. AEMO has posed questions in section 4.10 of this Draft Report to gather information on participant requirements for the cleansing and transition phases.
5.	United Energy	General	United Energy has some general concerns about the volumes of CRs that would be required to update MSATS – our daily limits would need to be lifted considerably or does AEMO propose an alternative way to make these updates?	AEMO is reviewing the data cleansing and transition phases for the proposed changes in the MSATS Standing Data Review. AEMO has posed questions in section 4.10 of this Draft Report to gather information on participant requirements for the cleansing and transition phases.
6.	ERM Power	New Mandatory Fields	In the same vein as above, it may be a good idea to introduce a transitional approach to making these new fields Required for a period of time to allow participants extra time for development of systems. Participants may be forced to populate fields with information which may not be known or 100% accurate. Example of this is Shared Fuse which would need to be populated to NO before the information is known this may be in contradiction to the rule change that is still under consultation, given that is intended only to be provided if known.	AEMO is reviewing the data cleansing and transition phases for the proposed changes in the MSATS Standing Data Review. AEMO has posed questions in section 4.10 of this Draft Report to gather information on participant requirements for the cleansing and transition phases.
7.	Vector Metering	Life support	Vector believes there are a growing list of compelling reasons for having a life support flag against a NMI; Not least is the situation where the FRMP who is unaware that a new customer at a site who has indicated life support status to a new retailer who have not yet become the FRMP (transfer is in flight), can remote Deen a site without knowing that the customer is life support; Life support status should be reflected in MSATS so that all parties who are responsible for the site can ensure that protections are provided to the customer.	AEMO refers to the response in Table 1, Item 129.

No.	Consulted person	Heading	Comments	AEMO response
8.	Aurora Energy	Life Support Flag	While it was previously discussed and dismissed – Aurora Energy still believes that while this is attached to the Premise and not a person this does not breach any privacy issues and is considered as part of the premise information.	AEMO refers to the response in Table 1, Item 129.
9.	Endeavour Energy	Network Tariff Code	The Network Tariff Code field is currently mandatory for a MPB to populate. We believe that this field should be the responsibility of the LNSP given the purpose of this field. One option is to allow a MPB to create a meter register record without a Network Tariff Code. The LNSP will then be required to populate the Network Tariff Code. Any further changes to the meter register record by the MPB should always result in the Network Tariff Code being carried to the updated meter register record, that is the MPB cannot change or blank out the Network Tariff Code. The LNSP should always have the right to change the Network Tariff Code. Another option is to remove the Network Tariff Code field from the meter register record and create two new fields in the NMI master record called 'Network Service' and 'Network Tariff Code'. The Network Service field describes the services offered by the network and should be an enumerated field with values like 'general supply' and 'off peak', and the Network Tariff Code is used to assign the network tariff code to the network service.	AEMO notes the decisions made during the introduction of the Metering Competition rule changes. AEMO understands that industry experience since this time has meant there are issues with the current arrangements. AEMO intends to explore the options: • Compliance issues raised with AEMO on MPB performance for correctly populating NTC. • Retailer obligations to inform the MC and MPB of the appropriate network tariff code • Networks have one business day to correct it; and/or • If networks have the obligation to populate the NTC then they will have only one business day to populate this after the metering installation details are provided by the MPB, this will ensure there are not additional delays to the commissioning of the meter in MSATS. AEMO has discussed this in more detail in section 5.2 of the draft report and is seeking feedback from participants to gain further insights on these issues. AEMO notes this option assumes there is only one Network Tariff for all meters on the metering installation, rather there

No.	Consulted person	Heading	Comments	AEMO response
				could be separate tariffs at meter level. The network tariff structures are determined by distributors and approved by the AER. AEMO must provide the flexibility for network tariffs at meter level.
10.	Endeavour Energy	New field – Meter Installation Malfunction	To provide better visibility and performance reporting for resolving metering installation malfunctions we suggest a new field, called Metering Installation Malfunction, be added to MSATS. We suggest that this field be an enumerated field and include values already defined in the B2B Meter Fault and Issue Notification transaction. The NER defines actions and timeframes for the FRMP and MC when a metering installation malfunction is identified or notified of. We note that AEMO and AER are interested in this matter because we are regularly requested for information on our metering installation malfunctions including when we identified and notified of them. We believe that this new field, along with the other new fields of Meter Malfunction Exemption Number and Meter Malfunction Exemption Expiry Date, will provide end to end transparency on this matter. We believe that this transparency will encourage a better compliance culture and performance reporting. Unfortunately, the B2B transaction is unable to provide such transparency and why we are suggesting moving such information to MSATS. Should this suggestion be adopted then we will suggest changes to the B2B procedure to remove any duplication.	AEMO does not intend to introduce this this field as it would represent a duplication of the already existing B2B 'Meter Fault and Issue Notification' transaction.
11.	Endeavour Energy	New fields for non-contestable unmetered loads	To support changes introduced by the 5MS program, we wish to suggest 3 new fields: Device Type, Device Profile, Device Agreed Load. These new fields should	AEMO refers to the 5MS program Metrology Procedure Part B requirements for capturing this in the

<table>
<tr><th>No.</th><th>Consulted person</th><th>Heading</th><th>Comments</th><th>AEMO response</th></tr>
<tr><td></td><td></td><td></td><td>be required for non-contestable unmetered load NMIs where a 1 NMI to 1 device approach is adopted. More detail of these new fields is below:
<table>
<tr><th>Field Name</th><th>Description</th><th>Who should provide this data?</th></tr>
<tr><td>Device Type</td><td>This is applicable for non-contestable unmetered loads only. This is the type of device installed. This field should contain a list of allowable values such as telephone box, NBN cabinet, advertising sign etc</td><td>If this field was to be included in MSATS, then we believe that the LNSP should populate this field as it is related to non-contestable unmetered loads</td></tr>
<tr><td>Device Profile</td><td>This is applicable for non-contestable unmetered loads only. This is the profile used for calculating the metering data. This field should contain a list of allowable values such as all times, sun rise/set etc</td><td>If this field was to be included in MSATS, then we believe that the LNSP should populate this field as it is related to non-contestable unmetered loads</td></tr>
<tr><td>Device Agreed Load</td><td>This is applicable for non-contestable unmetered loads only. This is the agreed rating of the device in Watts</td><td>If this field was to be included in MSATS, then we believe that the LNSP should populate this field as it is related to non-contestable unmetered loads</td></tr>
</table></td><td>Inventory Table rather than as Standing Data fields.</td></tr>
<tr><td>12.</td><td>Powerlink</td><td>NMI Aggregate Field</td><td>For the NMI Aggregate Field should there be a 3rd option for when it’s both, e.g. a battery or load and gen behind the meter. I know it won’t be part of this consultation, but there might be value in exploring this at a later date.</td><td>AEMO notes that, under the current rules, where a site has both load and generation (or a battery) separate NMI’s</td></tr>
</table>

No.	Consulted person	Heading	Comments	AEMO response
				are required. AEMO notes there are currently Rule change proposals that may change this structure.
13.	TasNetworks	Removed Fields	TasNetworks believe it would be prudent to change fields to Optional rather than removing them altogether. This would reduce the impact on participants making system changes.	AEMO believes that not removing unused fields does not align with the MSDR guiding principles that all standing data should be useful, accurate, and of high quality. Hence AEMO proposes to remove fields of no use, which is supported by many respondents.
14.	AusNet	Revert RegisterID definition in Standing Data for MSATS.	AusNet Services have submitted ICF to the ERCF requesting to revert the description of the RegisterID field in the Standing Data for MSATS procedure from 5MS Work Package 3 version 5.0 to the Current version 4.4 as version 5.0 introduced the requirement for the RegisterID to align to the NMI Suffix which creates additional work for the LNSP on top of 5MS and is not necessary for the 5MS program of work.	AEMO acknowledges receipt of the ERCF ICF (Reference number: ICF_030) and will work through the review of this ICF separate to this draft report.
15.	Endeavour Energy	Separate metering installation fields from metering fields	Currently the MSATS data model is that for every NMI master record there can be 1 or more meter register record, and for every meter register record there can be 1 or more register identifier record. There are a number of fields that are more representative of a metering installation than a meter, therefore these fields should not be included as part of the meter record and instead should be separated out into the NMI master record or a new record type be created. This would avoid the need to duplicate the same data and avoid inconsistent data to be populated just because of the data model of MATS. We suggest that the option to create a new record type be adopted to better support the MPB being responsible for these metering installation records, while the LNSP continue to be responsible for the NMI master record.	AEMO notes the respondent's comment. AEMO agrees with the 'Connection Configuration' and 'Shared Fuse' fields being at a NMI level. However, the rest of the fields referred to are at a meter level and provided by a mixture of parties. In particular, AEMO notes that CT and VT equipment is a mixture of provision by LNSP, customer and MC/MPB in the current contestable environment. This means this information provision will remain at the meter level to reflect the current CT and VT contractual arrangements.

No.	Consulted person	Heading	Comments	AEMO response
			We suggest that the following fields be moved to this new metering installation record: ConnectionConfiguration CurrentTransformerLocation CurrentTransformerType CurrentTransformerRatio CurrentTransformerAccuracyClass CurrentTransformerLastTestDate VoltageTransformerLocation VoltageTransformerType VoltageTransformerRatio VoltageTransformerAccuracyClass VoltageTransformerLastTestDate GPSCoordinates or GNAF PID, if these were to be included in MSATS Hazard Location NextScheduledReadDate SharedFuse Meter Malfunction Exemption Number Meter Malfunction Exemption Expiry Date	

No.	Consulted person	Heading	Comments	AEMO response
			Meter Installation Malfunction (a new field that we are suggesting)	
16.	CitiPower Powercor	Standing Data for MSATS 4. CATS Meter Register – ReadTypeCode – RWD5/15/30.	As the RWD label is only applicable in Victoria, CitiPower Powercor proposes that changes are applied as follows: a. Leave the existing AMI meter fleet with RWD – as they are currently 30 minute then assume no change to the TI unless specified as per below b. Where an existing meter is updated to 5 min TI that the RWD is also updated to reflect this e.g. RWDA c. When a new meter is installed that RWDA is applied MRIMs are updated to M 1 or 3 due to the low volumes of existing metering	AEMO notes that the Meter Read Type Code is applicable across all jurisdictions and the AEMO intends to continue with the proposed arrangements.
17.	United Energy	Standing Data for MSATS 4. CATS Meter Register – ReadTypeCode – RWD5/15/30.	As the RWD label is only applicable in Victoria, United Energy proposes that changes are applied as follows: a. Leave the existing AMI meter fleet with RWD – as they are currently 30 minute then assume no change to the TI unless specified as per below b. Where an existing meter is updated to 5 min TI that the RWD is also updated to reflect this e.g. RWDA c. When a new meter is installed that RWDA is applied MRIMs are updated to M 1 or 3 due to the low volumes of existing metering	AEMO refers to the response in Table 17, Item 16.
18.	CitiPower Powercor	Standing Data for MSATS	There are currently limitations on the house number field: a. No more than 5 characters b. Does not allow for characters such as – (e.g. 15-18 XXX Rd) These limitations force CitiPower Powercor to update the address as unstructured, we recommend that AEMO amend these limitations.	AEMO notes that following discussions with CitiPower Powercor, they no longer request we explore extending the length of the House Number field. AEMO proposes a HouseNumberTo field to capture the From To house number scenarios.
19.	United Energy	Standing Data for MSATS	There are currently limitations on the house number field: a. No more than 5 characters b. Does not allow for characters such as – (e.g. 15-18 XXX Rd)	AEMO refers to the response in Table 17, Item 18.

No.	Consulted person	Heading	Comments	AEMO response
			These limitations force United Energy to update the address as unstructured, we recommend that AEMO amend these limitations.	
20.	Aurora Energy	Type 4A reason - Reason for 4a metering. No telecoms or customer refusal.	This does not seem to have been addressed or considered in this consultation and was going to be added "To be added, pending Legal advice. Would be populated by MC or MPB."	AEMO notes the respondent's comment and refers to the response in Table 1, Item 163 and section 4.2 of this draft report.
21.	AGL	UMS 5 min segments – decimal places	Issue raised that a small UMS device (eg 12W) cannot be broken into 5 min segments and allocated over a day with 4 decimal places – need work on MSATS and NEM 12 data files to resolve this possibly with more decimal places.	AEMO notes the respondent's comment is outside scope of this consultation and suggests AGL raise the issue with 5MS program.
22.	AGL	Use of ADL	ADL is used in different processes. • During connection, it is used to determine the required metering and tariff (and service capability); • During the early part of the connection it is used when a substitution is required if there is no previous load history; • This field may be utilised for recording the agreed load for NCONUML devices (still being determined).	AEMO notes the respondent's comment.
23.	EvoEnergy	Version control	Some of the fields were discussed in consultation for 5MS, and were updated then providing better descriptions and information. Why has that not been incorporated into v4.5 as those were not related to new fields? Don't need to describe the NET or Nx values in this document and refer to the NMI Procedure.	AEMO will be releasing different versions of the Standing Data for MSATS Guideline as part of the MSDR consultation, those versions will have different changes and effective dates which will align with changes, versioning, and timeline of other projects (eg, CDR, 5MS, customer switching). More details are provided in the Draft Report with regards to each version and what it contains.