MSATS Standing Data Review

ISSUES PAPER

Published: **February 2020**

Australian Energy Market Operator Ltd ABN 94 072 010 327 www.aemo.com.au info@aemo.com.au

NEW SOUTH WALES QUEENSLAND SOUTH AUSTRALIA VICTORIA AUSTRALIAN CAPITAL TERRITORY TASMANIA WESTERN AUSTRALIA

EXECUTIVE SUMMARY

The publication of this Issues Paper commences the first stage of the Rules consultation process conducted by AEMO to consider proposed amendments to the standing data of the Market Settlement and Transfer Solution (MSATS) Procedures under the National Electricity Rules (NER).

In preparation for this consultation AEMO held separate industry sector meetings to provide participants with an overview, background and context for the MSATS Standing Data Review (MSDR) consultation. AEMO has also run an informal industry survey on MSATS standing data fields to gather participants feedback on proposed changes 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.

AEMO has prepared the Issues Paper to facilitate informed discussion and seek input from interested parties on the efficient delivery of proposed changes to the MSATS standing data in the National Electricity Market (NEM).

AEMO has followed a set of guiding principles in developing the proposed changes to MSATS standing data to ensure the data is complete, accurate, and useful for participants and consumers.

The proposed changes 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

AEMO has also included information in this Issues Paper relating to a possible rule change to NER Schedule 7.1. AEMO considers that this rule change would enable flexibility in relation to data requirements under the MSATS Procedures. It should be noted that the information provided regarding this possible rule change does not form part of the consultation being conducted in relation to the MSATS Procedure changes being proposed in this Issues Paper. If the rule change is to be progressed, it will be the subject of appropriate and necessary consultation at the relevant time.

To help stakeholders and other interested parties respond to this Issues Paper around the data field changes proposed, AEMO is publishing a change-marked version of the Standing Data for MSATS Guideline in the initial stage of consultation. At the same time as the publication of the Draft Report, AEMO expects to publish change-marked versions of the MSATS Procedures: Consumer Administration and Transfer Solution (CATS), the MSATS Procedures: Wholesale, Interconnector, Generator and Sample (WIGS), and any other relevant metering procedure which shows any changes as a result of this consultation.

AEMO invites stakeholders to suggest alternative options where they do not agree that AEMO's proposals would achieve the relevant objectives and outcomes. AEMO also asks stakeholders to identify any unintended adverse consequences of the proposed changes.

Stakeholders are invited to submit written responses on the issues and questions identified in this paper by 5.00pm (Melbourne time) on 31 March 2020, in accordance with the Notice of First Stage of Consultation published with this paper.

CONTENTS

1. STAKEHOLDER CONSULTATION PROCESS

AEMO is conducting a consultation on the changes proposed to standing data of the Market Settlement and Transfer Solution (MSATS) Procedures in accordance with the Rules consultation requirements detailed in clause 8.9 of the National Electricity Rules (NER).

A glossary of terms used within this Issues Paper is provided in Appendix A.

AEMO's indicative timeline for this consultation is outlined below. Dates may be adjusted depending on the number and complexity of issues raised in 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	30 April 2020
Submissions due on Draft Report	22 May 2020
Final Report published	03 July 2020

Prior to the submissions due date, stakeholders can request a meeting with AEMO to discuss the issues and proposed changes raised in this Issues Paper.

2. BACKGROUND

2.1 Pre-Consultation Approach

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

The meetings with industry were conducted by AEMO in December 2019 with retailers, distributors, Embedded Network Managers (ENMs), metering service providers, Metering Coordinators (MCs), and other government and market bodies to introduce the upcoming pre-consultation work, consultation, background, and purpose of the MSDR consultation.

Following the industry meetings, AEMO sent to participants an MSATS standing data fields survey which included the preliminary changes proposed by AEMO and asked for feedback by 10 January 2020. AEMO received a total of 30 participant responses, with roughly 70% of the responses agreeing with AEMO's analysis or proposal.

AEMO used participant feedback as an input to prepare for the MSDR pre-consultation workshop which was held on 3 and 4 February 2020. In the workshop AEMO focussed on contentious topics where participant feedback did not agree with the preliminary positions proposed by AEMO or where there were other views provided by participants. Issue prioritisation and implementation timelines were also discussed in the pre-consultation workshop.

The workshop outcomes have significantly informed the positions put forward by AEMO in this Issues Paper.

2.2 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.

2.3 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 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 has decided to resume its MSDR work. Current and future projects impacting MSDR include, but are not limited to, the following:

- Consumer Data Right
- Embedded Networks
- Stand-alone Power Systems
- Wholesale Demand Response (currently with AEMC)

The naming of proposed new standing data fields will be subject to aseXML Standards Working Group (ASWG) submission, change, and approval processes. It is important to note that field names may change, and specific enumerations will be defined in future papers.

2.4 MSATS Standing Data Review Guiding Principles

AEMO developed and has been following a set of guiding principles in developing the MSDR consultation 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 included the following:

- Efficient
    - To have standing data available to support the efficient operations of the electricity market
    - Does 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
    - 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

3. DISCUSSION

This section discusses the proposed changes to the standing dataset of the MSATS Procedures.

3.1 Metering Installation Information

3.1.1 General Metering Installation Information

AEMO is proposing that new fields be added, and some fields be amended or removed in order to improve market outcomes and data quality. AEMO is proposing that several fields be removed because they are now redundant or are no longer in use by market participants. These are discussed below.

AEMO is also considering whether automation is available for AEMO or participants to populate relevant fields, including initial population and ongoing maintenance. For example, the population of the Meter Malfunction Exemption Number[1] and Meter Malfunction Exemption Expiry Date fields must be automated as it will not be feasible to enter this information manually. Similarly, the Meter Model field will require an enumerated list that is updated whenever a new meter model is approved.

Fields proposed to be added

The following two fields have been proposed by industry participants to be added to MSATS:

- Meter Malfunction Exemption Number
- Meter Malfunction Exemption Expiry Date

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.

Fields proposed to be amended

AEMO recommends that each of the fields described in Table 1 below be amended in the manner outlined in the right-hand column. 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.

Table 1 Existing fields to be amended

Field	Description	AEMO Proposal
Last Test Date	The date on which the metering installation was last tested or inspected by the Metering Provider "B". This date will be used if clause 7.9.4(a) of the NER needs to be applied.	AEMO proposes 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.

[1] Field names for both existing and proposed fields are underlined for ease of reading.

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

Field	Description	AEMO Proposal
Meter Manufacturer	The manufacturer of the installed meter.	To be made 'Mandatory' with a 12-month transition timeframe. To be an itemised list with regular compulsory updates.
Meter Model	The meter manufacturer's designation for the meter model.	To be made 'Mandatory' with a 12-month transition timeframe. To be an itemised list with regular compulsory updates.
Meter Read Type Code	Code to denote the method and frequency of Meter Reading. First Character = Remote (R) or Manual (M); Second Character = Mode Third Character = Frequency of Scheduled Meter Readings Fourth Character = Undefined.	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.
Meter Suffix	Metering Datastream identifier (for MDM). Identifies the Datastream as delivered to AEMO for settlements purposes. The value must be a valid suffix for this NMI and is active for this date range. The value must comply with requirements of the NMI Procedure. If the MeterInstallCode is COMMSn, MRIM, MRAM, VICAMI or UMCP, the Suffix value must be in the form Nx where DataStreamType is I or P for an interval Datastream. If the MeterInstallCode is BASIC, the Suffix value must be numeric.	To be made retrospectively 'Mandatory' with a 12-month transition timeframe. This is with a view towards removing Meter Point in the future.
Meter Test Result Accuracy	The accuracy figure from the meter test performed on the date indicated in the Last Test Date field.	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 Use	A code identifying how the meter is used.	To be made 'Required'. Clearer description and an itemised list to be provided (EG: statistical, logical meters).

For the Meter Manufacturer and Meter Model fields, AEMO is proposing that these fields are populated over a 12-month implementation timeframe. For example, if the date by which all relevant data must be in MSATS is set to be in November 2022, LNSPs would be expected to populate relevant fields once they are available, typically 12 months before the agreed date.

When a meter is updated, data relevant to that meter should be updated. AEMO is not proposing that MSATS include a history of a site's Meter Model and Meter Manufacturer. A 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 be necessary since participants can determine whether a meter is a plug-in meter by use of Meter Model and Meter Manufacturer.

The Meter Test Date Accuracy field is also proposed to be updated and made 'Mandatory'. The improvement of data in this field will make the Last Test Date field redundant. As such, it will be removed. Next Test Date is also proposed to be removed as it does not create value for the market.

AEMO proposes to make changes to the Meter Read Type Code field effective 1 July 2021 to support the National Electricity Amendment (Five Minute Settlement) Rule 2017 No.15. The Meter Read Type Code currently has four characters, the first three of which denote whether a meter is remotely or manually read and the second and third indicate the mode and frequency of readings. The fourth character is currently unused, but AEMO proposes to use it denote the interval length that meter readings are read in. For example, a Read Type Code could read as "RWDC". This would indicate that the meter is read Remotely, Wirelessly, Daily, at a 30 minutes interval. A full description of how the proposed field will be used is available in the Standing Data for MSATS Guide v4.5 provided with this consultation.

Fields to be removed

AEMO recommends 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 5.1.

AEMO welcomes feedback from participants on this proposed approach to remove the fields and proceed with lodging a rule change request to amend Schedule 7.1. The majority of respondents to AEMO's survey and the majority of workshop attendees agreed with this proposed approach.

Table 2 Existing low-quality and underpopulated fields to be removed from MSATS

Field	Description	AEMO view
Asset Management Plan*	If a site plan is used, description of plan. If a sample plan is used, the name of the AEMO approved 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*	Details of any calibration factors programmed into the meter.	This field is virtually unpopulated. This indicates that participants do not find it useful.
Last Test Date	The date on which the metering installation was last tested or inspected by the Metering Provider "B". This date will be used if clause 7.9.4(a) of the NER needs to be applied.	Assuming the Meter Test Result Accuracy field will be implemented as described, this field will be redundant and can be removed.

Field	Description	AEMO view
Meter Constant*	The meter KE (intrinsic constraint of meter in Wh/pulse).	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*	Identifies the order of the meter uniquely for the NMI, e.g. this field will be 01 for the first meter at the NMI, 02 will be the second meter at the NMI, and so on. In the format 0n, where n is the meter number per the protocol described in the NMI Procedure.	This field will be made redundant with the Meter Suffix field being made 'Mandatory' and available retrospectively.
Meter Program	A description of the program used to initialise the installed meter	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	The route identifier the meter is currently being read in.	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*	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	A statement of compliance indicating the standard of the test regime applied at the time of the last test.	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*	Next date on which the meter should be tested.	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	Identifying the Metering Provider "B" and the technician responsible for conducting the last meter test. The technician is to be identified by a number unique to the Metering Provider "B".	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 that are currently described in NER Schedule 7.1.

Industry-proposed fields

This section discusses fields proposed by workshop participants during the pre-consultation phase of the Review. These proposed fields were discussed at the February 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. The proposed fields are:

- Meter Commission Date – the date the meter was commissioned. This was proposed as it may be useful for new retailers that win sites that are already active or when there are discrepancies around the NMI active date. However, AEMO does not believe this would not 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.

The below fields were also suggested by industry stakeholders for consideration in the MSATS Standing Data Review:

- Meter Family Failure
- Meter Test Report

AEMO is proposing not to add the above fields for the following reasons:

The Meter Family Failure field was proposed to be an enumerated list indicating whether meter family failure is present. AEMO's view is that the proposed Meter Malfunction Exemption Number and Expiry Date fields would make this field redundant, therefore inclusion of this field is not supported by AEMO.

The Meter Test Report field was proposed to be a PDF copy of the most recent meter test report. The use of PDFs cannot easily have the accuracy of its data ensured, is not easy or low cost to implement and may violate privacy requirements. As such, its inclusion is not supported by AEMO.

AEMO's Proposal:

- Fields to be added:
  - Meter Malfunction Exemption Number
  - Meter Malfunction Exemption Expiry Date
- Fields to be amended:

Field	Proposal
Last Test Date	Field to be made 'Mandatory'
Meter Manufacturer	Field to be made 'Mandatory'
Meter Model	Field to be made 'Mandatory'
Meter Read Type Code	Field made 'Required' and fourth character to identify whether meter capable of reading at five-minute granularity
Meter Suffix	Field to be made 'Mandatory'.
Meter Test Result Accuracy	Field to be made 'Required' Amended to be a combined test date and pass/fail flag

Meter Use	Field to be made 'Required'

- Fields to be removed:
  - Asset Management Plan
  - Calibration Tables
  - Last Test Date
  - Meter Constant
  - Meter Point
  - Meter Program
  - Meter Route
  - Meter Test & Calibration Program
  - Meter Test Result Notes
  - Next Test Date
  - Test Performed By
- Fields to be considered if respondents can justify their addition to MSATS in light of their value for the market and in terms of the ability to ensure data quality for them:
  - Disconnection Method
  - Meter Commission Date
  - Meter Locks
  - Minimum interval length
  - Meter Family Failure
  - Meter Test Report
  - Plug-in Meter Flag

Questions:

1. Do you support the addition of the Meter Malfunction Exemption Number field to MSATS? If not, why not?
2. Do you support the addition of the Meter Malfunction Exemption Expiry Date field to MSATS? If not, why not?
3. If you do not support the addition of the suggested fields, do you support the addition of the Meter Family Failure field?
4. If you do not support the amendments proposed by AEMO, which ones and why?
5. What enumerations can be made for the Meter Use codes that would be useful for the market?
6. 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.
7. 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?
8. 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?

9. Do you have any other comments regarding the general Metering Installation Information fields?

3.1.2 Metering Installation Transformer Information

The following information is recorded in MSATS about 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

The above fields have a very low population rate (below 5%) and the data that is in the current system is of poor quality because there are no validation checks performed on these fields (the fields are free-text). Some workshop participants indicated that the information in these fields should be split into current transformer (CT) and voltage transformer (VT) information to make those fields of use and value to the market. This would consist of six fields in total. Transformer Location would be split into CT Location and VT Location, Transformer Ratio would be split into CT Ratio and VT Ratio, and Transformer Type would be split into CT Type and VT Type.

Some participants indicated that having CT and VT information will assist in the timely exchange of meters and in the selection of the right Metering Provider. It also would directly benefit customers as it would assist in addressing customer queries, quoting correct prices to customers and managing customer expectations. For example, when planning a meter exchange the participant would be able to determine whether a customer has a CT or VT meter and whether an outage will be necessary. This has the advantage of avoiding unnecessary customer confusion.

Some participants have proposed a number of new fields be added to provide information about meter transformers (through the pre-consultation survey and February industry workshop). There was 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

Some participants indicated that they would like to have new fields for CT/VT Serial Numbers also added to MSATS Standing data. However, transformers can have multiple serial numbers and different number of serial numbers. A solution could be to add a new "NMI Devices" table to hold serial numbers and other device(s) information. AEMO notes 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.

AEMO's Proposal:

- AEMO proposes to split the following existing transformer fields into new CT fields and VT fields as the following:
  - Transformer Location -> CT Location and VT Location
  - Transformer Ratio -> CT Ratio and VT Ratio
  - Transformer Type -> CT Type and VT Type
- AEMO proposes to add the following new fields about transformer to MSATS:
  - CT Accuracy Class and VT Accuracy Class

- CT Last Test Date and VT Last Test Date

- AEMO proposes the following validations to be added to the transformer information fields to ensure high data quality:

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

- AEMO proposes not to add CT/VT Serial Numbers fields as part of this MSATS Standing Data Review, as there was not enough support from participants for adding those fields, and more investigation is needed on how those fields can be incorporated to MSATS system and database.

Questions:

10. Do you agree to AEMO's proposal with regards to splitting transformer information into CT and VT?
11. 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?
12. 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.
13. Do you agree with AEMO's proposal not to add CT/VT Serial Number fields, and if you do not agree with AEMO's proposal, can you propose solutions for adding those fields in (i.e. a new NMI devices table), and will these solutions provide more benefit than costs to your business and customers?

3.1.3 Register-Level Information

The following fields were included in the scope of discussion at the workshop with industry participants:

- Controlled Load
- Demand1
- Demand2
- Time of Day

AEMO proposed amendments to these fields as part of its pre-consultation survey. Participant responses to the survey for these fields indicated neither strong agreement nor disagreement with AEMO's analysis.

Data in the Controlled Load field is currently of low-quality and inconsistent in content. The field is almost 100% populated. Participants considered AEMO's proposal of making it enumerated with 'Yes or 'No' values and Endeavour Energy's proposal (ICF_009) to have the fields enumerated as 'No,' 'CL1' and 'CL2'. Participants identified that it is important to consider the list of values used in B2B and have a common enumerated list for both B2B and B2M. There was also discussion around an option to cleanse the existing data.

Participants considered AEMO's proposal of making the fields Demand1 and Demand2 'Required'. It was also suggested to rename the fields as 'Demand-Summer' and 'Demand Non-Summer'. Participants also considered the fields' extremely low population rate of just 1% indicated low value to the market and proposed that they be removed.

Data in the Time of Day field is also low-quality and irregular. The field is almost 100% populated. AEMO proposed that the field be incorporated into the Meter Program field. However, participants had already agreed the Meter Program field should be removed in prior discussion. Participants then discussed the following options:

- Remove the field
- Improve data quality
- Enumerate the field
- Leave the field unchanged

Participants also proposed to enumerate the field and cleanse the existing data.

AEMO proposed Network Additional Information field be removed and no changes to remaining fields.

There were no new fields proposed.

AEMO's Proposal:

- AEMO proposes amendments to the following fields:
  - Controlled Load (develop common enumerated list for both B2B and B2M and cleanse existing data)
  - Time of Day (develop enumerated list and cleanse existing data)
- AEMO proposes to remove the following fields
  - Demand1
  - Demand2
  - Network Additional Information

Questions:

14. 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
15. Do you agree with AEMO's proposal to remove the following fields?
    - Demand1

- Demand2
- Network Additional Information

3.1.4 Connection and Metering Point Details

Connection Configuration field

AEMO proposed the following four-character Connection Configuration field as part of pre-consultation (the original fifth character, "Shared Isolation Points Flag", is analysed in the following table.

Table 3 Proposed Connection Configuration field, with enumerations.

Character No.	1	2	3	4
Stands for	Connection Type	Phases In Use	Presence of CT	Presence of VT
Enumerations	L = Low Voltage H = High Voltage	1 = Single Phase 2 = Two-Phase 3 = Three-Phase	C = Current Transformer Present N = No Current Transformer Present	V = Voltage Transformer Present N = No Voltage Transformer Present

The intent of this was to ensure data standardisation and quality, given AEMO could enumerate the physically possible combinations of characters.

At the workshop, some participants indicated that they did not believe the proposed field would capture all possible combinations of meter configurations. As such, AEMO is seeking advice in this paper on what meter configurations would not be expressible by means of the above.

Additionally, participants at the workshop queried whether "Low Voltage" and "High Voltage" are defined terms. AEMO proposes to use the definition of "high voltage" as set out in Chapter 10 of the NER (with "low voltage" accordingly being defined as less than "high voltage").

Participants were asked whether the second character (which referred to "Phases Available" in the material distributed in advance of the pre-consultation) should be split into two characters expressing "phases supplied" and "phases in use" separately. Participants expressed strong support for not separating Character 2 in this way. As such, AEMO proposes that Character 2 not be split and only refer to "phases in use".

AEMO's Proposal:

- AEMO proposes to include the Connection Configuration field as described above.

Questions:

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

Shared Isolation Points Flag field

In the pre-consultation feedback form, AEMO had originally proposed to include a Shared Isolation Points flag as part of Connection Configuration, as this flag had been requested at the 2018 workshop. In the workshop, participants expressed that the LNSP should populate any flag for shared isolation points; as such, to ensure that individual fields are populated by one participant only at any given time, AEMO is proposing a separate Shared Isolation Points flag, to be populated by the LNSP.

In addition to being proposed at the 2018 workshop, this flag was recommended to be added to MSATS by the AEMC as part of their draft determination for the "Introduction of metering coordinator planned interruptions" rule change[3]. As per this draft determination, 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".

It is currently proposed to have this field effective 1 July 2021 dependent on the outcomes of the Draft National Electricity Amendment (Introduction of metering coordinator planned interruptions) Rule 2020. A description of this field is available in the Standing Data for MSATS v4.5 Guide available as part of this consultation[4].

AEMO's Proposal:

- AEMO proposes to include a Shared Isolation Points field, with possible values being "Yes", "No", and "Unknown".
- AEMO proposes that this field be introduced effective 1 July 2021.

Questions:

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

3.1.5 Metering Installation Location Information

Additional Site Information / Meter Location

While AEMO has proposed to keep free-text fields to a minimum, participants identified that non-enumerable information about the meter's location would often need to be stored in MSATS (e.g. "meter is by the pump near the dam"), necessitating the retention of some free-text fields. The Additional Site Information field in particular was not identified as useful, as the changes to structured address fields and the possible addition of G-NAF PID (see below for analysis of the G-NAF PID field) should enable the site itself to be located with ease. Additionally, participants often use the Additional Site Information field to store information not about the site location but rather about the meter's location (meaning the information could be placed in the Meter Location field) or about the hazards on the site (meaning the information could be placed in the Site Hazard field).

At the February 2020 workshop, participants agreed that the Additional Site Information field could therefore be deleted and incorporated into the existing Meter Location field.

[3] AEMC, *Introduction of metering coordinator planned interruptions – Draft determination*, 19 December 2019, https://www.aemc.gov.au/sites/default/files/documents/introduction_of_metering_coordinator_planned_interruptions_draft_determination_final_version.pdf

[4] Please note that the Shared Isolation Point field is referred to as "SharedFuse" in the CATS_METER_REGISTER table in the Guide.

AEMO's Proposal:

- AEMO proposes to delete the Additional Site Information field, with any information currently in Additional Site Information being moved to Meter Location (note: only 4.1% of NMIs have Additional Site Information populated).

Questions:

20. Do you support the deletion of Additional Site Information?
21. 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)

GPS Coordinates

In line with participant feedback from the 2018 workshop, AEMO proposed the inclusion of meter GPS Coordinates in the pre-consultation feedback pack. Participants noted that this information would be useful in a number of circumstances, with roughly half of respondents supporting the addition of the field. It was also raised that the collection and population of this information may for many NMIs present a cost that would exceed the benefit.

In line with this, AEMO asked participants at the February 2020 workshop in what instances the provision of meter GPS coordinate data would be most useful. These groups identified that the GPS coordinate data would be most useful for rural and manually read interval meter (MRIM) sites and would be useful for any interval meters. Participants also identified that GPS coordinate data would be of limited to no use for multi-occupancy sites.

AEMO proposes to identify which sites are rural by use of the "Designated regional area postcodes" list[5] published by the Australian Government. Postcode information is already included in MSATS, which would mean that AEMO can provide reports listing the "rural" NMIs (according to the designated regional area postcodes list) for which participants have not populated the GPS Coordinates field. However, this would mean that meters within rural townships would also need to have GPS Coordinates populated (since they fall within the postcodes on the designated regional area postcodes list). An alternative would be to make GPS Coordinates 'Mandatory' for all NMIs in the "Rural Balance" classification of the ABS's "Section of State" classification[6]. This is far more exact—i.e. far fewer NMIs in rural towns would have the provision of GPS Coordinates be made 'Mandatory'[7]—but it could also not be validated by MSATS, as MSATS does not store the Section of State classification.

AEMO's Proposal:

- AEMO proposes to create a GPS Coordinates field (to five decimal places) that would be:
    - 'Mandatory' for any rural sites (allowing for some transition period)
    - 'Mandatory' for any sites with an MRIM meter (allowing for some transition period)
    - 'Mandatory' for any new installation

[5] You can learn more about the "Designated regional area postcodes" list here: https://immi.homeaffairs.gov.au/visas/working-in-australia/skill-occupation-list/regional-postcodes

[6] You can learn more about Sections of State here: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1270.0.55.004~July%202016~Main%20Features~Design%20of%20SOS%20and%20SOSR~12

[7] You may compare the use of "Postal area" and the use of "Sections of State" here: https://itt.abs.gov.au/itt/r.jsp?ABSMaps

- 'Required' for any non-MRIM interval meters (i.e. if a participant stores GPS Coordinates for a non-MRIM interval meter, they would have to provide that data to MSATS, but no new data would have to be collected)
- 'Optional' for all other meters

Questions:

22. Does your organisation support the 'Mandatory' provision of GPS Coordinates for all rural sites?
23. 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?
24. Does your organisation support the 'Mandatory' provision of GPS Coordinates for any sites with an MRIM meter?
25. Does your organisation support the 'Mandatory' provision of GPS Coordinates for any new installations?
26. Does your organisation believe that the provision of this information should be made 'Mandatory' for any other scenarios?
27. Does your organisation believe that the provision of this information should be made 'Required' for any other scenarios?
28. 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 GPS Coordinates field is added, should it be to four, five, or six decimal places?

3.1.6 Meter Read and Estimation Information

The existing MSATS field of Next Scheduled Read Date is 'Required' for manually read meters, and the field has population rate of almost 98% in MSATS. Despite this, it is currently defined as an 'Optional' field. Due to the importance of this field and its usefulness to industry participants and consumers, AEMO proposes to make this field 'Required' for all manually read meters instead of 'Optional'. The majority of participants supported AEMO's proposal in the pre-consultation stage for the MSATS Standing Data Review.

The following meter read and estimation information fields are rarely used and currently very sparsely populated in MSATS which indicates that participants do not find them useful. AEMO proposes the removal of those fields from NER Schedule 7.1 and MSATS procedures, noting that the majority of participants supported AEMO's proposal in the pre-consultation stage for the MSATS Standing Data Review:

- Data Validations
- Estimation Instructions
- Measurement Type

AEMO's Proposal:

- AEMO proposes to amend the Next Scheduled Read Date from 'Optional' to 'Required' for all manually read meters.
- AEMO proposes to remove the following fields:
  - Data Validations

- Estimation Instructions
- Measurement Type

Questions:

29. 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?

3.1.7 Meter Communications Information

The following meter communication information fields are rarely used and currently very sparsely populated in MSATS which indicates that participants do not find them useful. AEMO proposes the removal of those fields from NER Schedule 7.1 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

AEMO's Proposal:

- AEMO proposes to remove the following fields:
  - Communications Equipment Type
  - Communication Protocol
  - Data Conversion
  - Password
  - Remote Phone Number
  - User Access Rights

Questions:

30. Do you agree with AEMO's proposal to remove the meter communications information fields as per the proposal above? If not, please specify the fields whose removal you would not support and why?

3.2 NMI Details

3.2.1 Address Structure

Unstructured address fields

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

- The Structured Address fields, which consist of a number of 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 (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, since (unlike the Structured Address fields) there are no validations on data quality. The Unstructured Address fields were originally added to MSATS in case of addresses that could not be provided via the Structured Address field, but participant feedback has indicated that addresses stored in Unstructured Address fields is often able to be stored in Structured Address fields. The fact that this information is stored in Unstructured Address fields increases the difficulty associated with finding the correct address for a NMI. As such, AEMO proposes to remove the Unstructured Address fields from MSATS (therefore mandating that all NMIs have an addressed 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 one of cleaning 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.[8]

The fields currently have a relatively low population rate, with Unstructured Address Line 1, 2, and 3 having 12.5%, 12.4% and 5.8% population rates respectively.

AEMO's Proposal:

- 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 clean their existing address data.

Questions:

31. Do you agree with the proposal to remove Unstructured Address fields, following a period for data holders to clean their existing data?

[8] At the February 2020 workshop, participants raised a number of other fields where they believed the address could not be made structured. Solutions to these have been provided in the table below.

Address type	Way to make the address structured
Embedded networks where there is more than one parent NMI in that network	Use the structured address for the site address and use Location Descriptor to differentiate the parents
Public lighting at bus stops, public toilets, traffic lights	If these are being grouped per customer and per unmetered type, then a suburb can be entered under structured address and Location Descriptor can be used to describe the unmetered load.
Corners	Location Descriptor can be used to describe these addresses.
Hyphenated addresses (i.e. 12-24 Smith St)	The larger of the two numbers can be used.

32. 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 AEMO has proposed to lengthen the characters available?

GNAF and additional structured address fields

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

Table 3 Proposed new address information fields

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)[9].
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[10].

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 they have done with the 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.

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 Delivery Point Identification (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

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

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

physical addresses (but not the converse), the proposed G-NAF PID field would supersede the DPID. As such, AEMO proposes to remove the DPID 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 thereof is provided in the relevant section.

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

AEMO's Proposal:

- AEMO proposes to add G-NAF PID and to not include Section Number or DP Number, since these are discoverable from the G-NAF PID.
- AEMO proposes to populate the G-NAF PID for any NMI that currently has a completed structured address, pending investigations into costs.
- AEMO proposes to remove the DPID field.

Questions:

33. 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 DPID) and thereafter by LNSPs?
34. Do you agree with the proposal to add G-NAF PID to MSATS if the data were populated entirely by LNSPs?
35. 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?
36. Would your organisation support adding Section Number and DP Number if G-NAF PID were also to be added?
37. Would your organisation support adding Section Number and DP Number if G-NAF PID were not to be added?

3.2.2 Feeder Class

MSATS currently contains an 'Optional' field 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.

AEMO's Proposal:

- AEMO proposes to make Feeder Class 'Required' for the jurisdiction of Queensland and keep it as 'Optional' for all other jurisdictions in the NEM.

Questions:

38. Do you agree with the proposal to make Feeder Class 'Required' for the jurisdiction of Queensland?

3.2.3 Transmission Node Identifier (TNI) 2

MSATS currently 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 current 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) and AEMO will populate this field in MSATS on behalf of the market. It is proposed that this field be introduced effective 1 July 2021 to enable the commencement of UFE calculations across the NEM.

A description of this field is available in the Standing Data for MSATS v4.5 Guide available as part of this consultation.

AEMO's Proposal:

- AEMO proposes to introduce a new field TNI2 to support Global Settlement UFE calculations.
- AEMO proposes to populate this field in MSATS.
- AEMO proposes that this field be introduced effective 1 July 2021.

Questions:

39. Do you agree with the proposal to introduce TNI2?

4. DRAFTING FOR PROPOSED CHANGES

To help stakeholders and other interested parties respond to this Issues Paper discussion on the MSATS standing data fields, AEMO is publishing change marked versions of the Standing Data for MSATS guideline in the initial stage of consultation.

Change marked versions of all affected procedures to enable consideration of process changes, including the MSATS Procedures: CATS and WIGS, will be provided alongside AEMO's draft report on 30 April 2020.

5. OTHER MATTERS

5.1 NER Schedule 7.1

Schedule 7.1.2 (S7.1.2) of the NER currently 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 analysis (including the industry feedback and workshops performed) shows is outdated or otherwise not useful to industry or AEMO. The former is detailed in "Fields to be removed" in Section 3.1.1, which highlights fields in MSATS that are no longer suitable for market processes but are still described in the NER. The latter is detailed in Section 5.2, which lists fields that have never been implemented in the market and are described by S7.1.2.

AEMO is seeking to understand industry's thoughts on AEMO's 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 currently prescribe the information that must be contained in MSATS and as such virtually replicates the contents of NER S7.1.2 requirements for the metering register. The MSATS Procedures are a NER requirement (NER 7.16.2) and the 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 as it stands, 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 rapidly as once every 30 minutes. Under AEMO's proposal, since this field is free-text, participants could request a procedure change to repurpose this field to capture other information relevant to industry without needing to a Rule change or making schema changes to MSATS. This flexibility does not currently 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.

AEMO's Proposal:

- Schedule 7.1 of the NER becomes a description of what must be in MSATS *at a minimum*.
- The full detail of what must be included in MSATS will be included in the MSATS Procedures. Changing these will require 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.

Questions:

40. Do you see any benefit in Schedule 7.1 remaining as-is? If so, please detail the benefit.
41. Do you support AEMO's proposal? If you do not, please detail why.

5.2 Fields referenced in the NER that are not currently present in MSATS

There are three fields listed in Schedule 7.1 but are not currently present in MSATS. These are listed below in Table 3 below.

Table 4 Fields referenced in Schedule 7.1 that are not in MSATS

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. It would be beneficial to address this discrepancy either by adding the fields or removing reference to them from the NER. AEMO does not believe 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. As such, assuming that participants are comfortable with the amendment of Schedule 7.1, AEMO recommends against this field's addition to MSATS.

AEMO's Proposal:

- AEMO will request the reference to the above fields be removed from the NER. This may be requested as part of the aforementioned Schedule 7.1 Rule change proposal or in addition to it.

Questions:

42. 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?

5.3 Issue Prioritisation and Implementation details

In the MSATS Standing Data Review pre-consultation workshop which was run by AEMO on 3rd and 4th February 2020, AEMO conducted an issue prioritisation and implementation session on the changes proposed during the workshop.

There are currently a number of other electricity rule changes and change proposals underway in the retail electricity sector including:

- Stand-Alone Power Systems (SAPS)
- Five Minute Settlement (5MS) and Global Settlement
- Metering Competition Review
- Consumer protections in an evolving market review
- Consumer Data Right (CDR)
- Other B2B changes

AEMO is proposing the following timeframes for the implementation of the agreed changes as a result of the MSATS Standing data Review consultation:

- December 2020 MSATS Release with effective date of 1 July 2021
  Two new fields and one modified field as identified in Section 3 to support the following rule changes:
  - National Electricity Amendment (Five Minute Settlement) Rule 2017 No.15;
  - National Electricity Amendment (Global settlement and market reconciliation) Rule 2018 No. 14
  - Draft National Electricity Amendment (Introduction of metering coordinator planned interruptions) Rule 2020
  - The proposed new fields are: Shared Isolation Points Flag which is outlined in Section 3.1.4; and TNI2 which is outlined in Section 3.2.3.
  - The field to be amended is Meter Read Type Code, outlined in Section 3.1.1.
- May 2022 MSATS Release
  The MSATS release of May 2022 to include the agreed addition of new fields and modification of existing fields to MSATS Standing Data.
- November 2022 MSATS Release
  The MSATS release of November 2022 to include the deletion of the agreed unwanted MSATS Standing Data fields.

6. SUMMARY OF MATTERS FOR CONSULTATION

In summary, AEMO seeks comment and feedback on the addition of, updates to, or removal of fields in the MSATS standing dataset 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 also seeks to understand industry's thoughts on a proposed change to NER Schedule 7.1 in light of the fields described above.

AEMO invites stakeholders to suggest alternative options where they do not agree that AEMO's proposals would achieve the relevant objectives and outcomes. AEMO also asks stakeholders to identify any unintended adverse consequences of the proposed changes.

Submissions on these and any other matter relating to the proposal discussed in this Issues Paper must be made in accordance with the Notice of First Stage of Consultation published with this paper by 5.00 pm (Melbourne time) on 31 March 2020.

APPENDIX A. GLOSSARY

Term or acronym	Meaning
ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
CATS	Consumer Administration and Transfer Solution, a part of MSATS
COAG	Council of Australian Governments
CR	Change Request
CRC	Change Reason Code
DNSP	Distribution Network Service Provider
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
GSL	Guaranteed Service Level
HLD	High Level Design
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)
MSATS	Market Settlements and Transfer Solution
NMI	National Metering Identifier
NEM	National Electricity Market
NER	National Electricity Rules
NERR	National Energy Retail Rules
NSRD	Next Scheduled Read Date
Optional	In relation to fields, this data does not have to be provided but will be accepted if delivered.
'Required'	In relation to fields, this data must be provided if this information is available.
REPI	Retail Electricity Pricing Inquiry
WIGS	Wholesale, Interconnector, Generator and Sample NMIs