

5MS/GS Transition Focus Group #9:

Wednesday 7th Oct, 2020

WebEx only [details in calendar invitation]

This slide pack was developed for the Transition Focus Group meeting. This version of the slides has been annotated with notes from the meeting. These additional notes are either in blue text of are on new slides indicated by a yellow background.

Attendees 1/2

Organisation	Attendee	Organisation	Attendee
AEMO	Blaine Miner (Chair)	Energex	Nicole Bright
AEMO	Anne-Marie McCague	Energex	Steve Smith
AEMO	David Ripper	Energy Australia	Jon Ham
AEMO	Greg Minney	Energy Queensland	Stephen Blair
AEMO	Liz Bernhardt	Ergon	Ingrid Farah
AEMO	Paul Lyttle	Ergon	Martin Andonovski
AEMO	Simon Tu	Essential Energy	Tim Lloyd
AEMO	Tui Grant	EvoEnergy	Joe Milazzo
Aurora Energy	Craig Eadie	Jemena	Matthew Mullen
AusNet Services	Con Michaildes	Jemena	Rajiv
Brave Energy	Trent Smith	Lumo	Mark Reid
Endeavour Energy	Dino Ou	Mondo	Justin Stute



Attendees 2/2

Organisation	Attendee	Organisation	Attendee
Origin	Amanda Pollard	Stanwell	Chris Reilly
Plus ES	Linda Brackenbury	Stanwell	Tim
Powercor	Greg Szot	TasNetworks	Adrian Honey
Powercor	Ron Dittman	Transgrid	Adam Hoare
Red Energy	Chris Hookey	United Energy	Unnamed
Red Energy	Christophe	Vectorarms	Paul Greenwood
Red Energy	Nick Gustafsson		



Consolidated meeting actions

#	Торіс	Action	Owner	Due date
9.2.1	MC and MDP rollout plans	AEMO to investigate if a breakdown by month of the Type 1-3, 4* meters being replaced can be reported	AEMO	15 Nov
9.2.2	Tier 1 Basic Data Stream timing	AEMO to request Tier 1 basic datastream activation and metering data delivery plans from those participants with significant activation volumes.	AEMO	30 Oct
9.3.1	MTP CATS transaction volume management	TFG to consider the assumptions applied in the initial AEMO CATS transaction analysis and provide feedback as to what assumptions should change to support the second stage of analysis	TFG	30 Oct
9.3.2	MTP CATS transaction volume management	AEMO to set up a SWG / RWG forum to talk through CATS transaction volume implications from a systems perspective	AEMO	30 Oct
9.3.3	MTP CATS transaction volume management	AEMO to liaise internally to consider how best to facilitate a more holistic view of the anticipated MSATS standing data updates associated to both 5MS and non-5MS requirements.	AEMO	15 Nov
9.5.1	Next steps and general business	AEMO to book monthly TFG as placeholders	AEMO	30 Oct



AEMO Competition Law Meeting Protocol



AEMO is committed to complying with all applicable laws, including the Competition and Consumer Act 2010 (CCA). In any dealings with AEMO regarding proposed reforms or other initiatives, all participants agree to adhere to the CCA at all times and to comply with this Protocol. Participants must arrange for their representatives to be briefed on competition law risks and obligations.

Participants in AEMO discussions must:

- 1. Ensure that discussions are limited to the matters contemplated by the agenda for the discussion
- 2. Make independent and unilateral decisions about their commercial positions and approach in relation to the matters under discussion with AEMO
- 3. Immediately and clearly raise an objection with AEMO or the Chair of the meeting if a matter is discussed that the participant is concerned may give rise to competition law risks or a breach of this Protocol

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- 1. Which customers they will supply or market to
- 2. The price or other terms at which Participants will supply
- 3. Bids or tenders, including the nature of a bid that a Participant intends to make or whether the Participant will participate in the bid
- 4. Which suppliers Participants will acquire from (or the price or other terms on which they acquire goods or services)
- 5. Refusing to supply a person or company access to any products, services or inputs they require

Under no circumstances must Participants share Competitively Sensitive Information. Competitively Sensitive Information means confidential information relating to a Participant which if disclosed to a competitor could affect its current or future commercial strategies, such as pricing information, customer terms and conditions, supply terms and conditions, sales, marketing or procurement strategies, product development, margins, costs, capacity or production planning.

Agenda **Please disconnect from your workplace VPN for the WebEx call**

NO	TIME	AGENDA ITEM	RESPONSIBLE
1	9:30 - 9:40	Welcome and introduction	Greg Minney
2	9:40 - 10:10	MC and MDP rollout plans	Paul Lyttle
3	10:10 – 10:45	MTP CATS transaction volume management	Blaine Miner
4	10:45 – 11:10	Cross Boundary categories, conditions and requirements	David Ripper
5	11:10 – 11:30	Next steps and general business	Greg Minney



Introduction

Greg Minney



Session Objectives

Objectives from Today's Session:

- Review and consider the consolidated metering rollout plans for Tranche 1 and Tranche 2 metering
- Consider CATS transaction volumes management approaches associated to the MTP
 - Key assumptions and inputs
 - Indicative timings
 - Impacts and constraints on individual participants e.g. daily initiation and processing constraints
 - Preferred transaction management approaches
- Identify areas for further assessment for the management of transitional elements
- Discuss Cross Boundary categories, conditions and requirements
 AEMO

MC and MDP rollout plans

Paul Lyttle



MC and MDP Rollout Summary

• As outlined in the Metering Transition Plan, MCs were responsible for providing updates on their Tranche 1 meter rollout plans and MDPs were responsible for providing their Tranche 2 meter rollout plans.

Tranche 1 11 plans received from MCs (92% coverage) • Transgrid Meters expected to record and provide • Metering Dynamics 5-min metering data by 1 October ElectraNet Mondo 2021: AusNet Services **BULK/Wholesale Meters** PLUS ES • • • Type 1-3 meters Ausgrid Intellihub ٠ • Subset of type 4 meters – TNI, Origin Powerlink • Market Generator or SGA Evoenergy ٠

Tranche 2

Meters expected to record and provide 5-min metering data by 1 December 2022:

- New and replacement type 4/4A
- VIC AMI
- SAMPLE meters

9 plans received from MDPs

- Ausnet Services
- CitiPower/Powercor
- United Energy
- Intellihub
- Jemena

- Metering Dynamics
- Mondo
- PLUS ES
- Vector

MC and MDP Rollout Plan Observations

Type 1 – 3 & subset Type 4 meter rollout

- Planned upgrade currently in progress
- Rollout peaks in December 2020 with 7,000 meters for the month
- Does not include registration of new Cross Boundary Connection Points

Basic DS registration

- No plan requested by AEMO, therefore indicative meter counts with no active datastreams extracted from MSATS as a guide
- Allows for 2 full read cycles (7 months) for registration and 1 full read cycle (3 months) prior to 5MS start, as per the MTP
 - Assumes a first and last month ramp rate of 50%

UMCP upgrade

- No plan requested by AEMO, therefore indicative meter counts for Type 7 have been extracted from MSATS as a guide
- Assumes 3 full cycles (3 months) for upgrade and 1 full cycle (1 month) prior to 5MS start
- Does not include the registration of Non Contestable Unmetered Loads



Tranche 1 Aggregate Volumes

• Peak months between Jan and May 2021 peaking at 200,000 meters updated per month.



Pre 5MS Go Live - Meters To-Be Updated

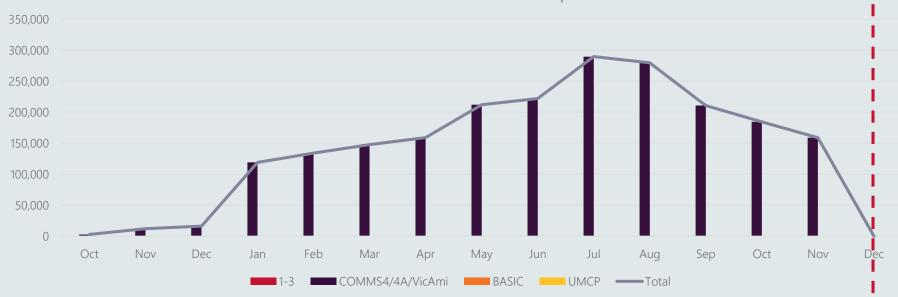


Tranche 2 Aggregate Volumes

COMMS4/4A/VICAMI meter rollout

- Roll out begins in January 2022
- Continuous rump up until peak in July and August
- Ramp down for the following 3 months

• Peak months between Jul and Aug 2022 peaking at 290,000 meters updated per month



Pre 1 Dec 2022 - Meters To-Be Updated



Notes

<u>Tranche 1</u>

- It was confirmed that there are a low number of replacements being carried out
- The basic meter volume represents the Tier 1 basic meters that do not currently have active datastreams in MSATS.
- It was noted that most of the expected basic meter datastream activations are in Tasmania and SA, with another large volume in NSW.
- Participants in the TFG indicated a preparedness to provide plans for the activation of their Tier 1 basic datastreams for incorporation in updated volume modelling
- It was stated that the data provided reflected the aggregated market view. Each participant will need to perform their own assessment to understand the impact of the change on their individual businesses.
- Most Tier 1 Basic meter NMIs appear to have been created in MSATS, however, some have inactive datastreams or have never had a datastream created.
- AEMO confirmed that it is not intending to provide lists of missing or non-active datastreams to participants prior to MTP activities being completed.
- Action 9.2.1: AEMO to investigate if a breakdown by month of the Type 1-3, 4* meters being replaced can be reported
- Action 9.2.2: AEMO to request Tier 1 basic datastream activation and metering data delivery plans from those participants with significant activation volumes.

<u>Tranche 2</u>

- The majority of the expected updates relates to new and replacement type 4, 4a and VICAMI meters.
- Some MDPs have applied a growth estimate to their plans.



MTP CATS Transaction Volume Management

Blaine Miner



Applicable MTP Activities

SID	Sub-Category	AID	Activity	Actions	Role	CATS CRs	Transition Start Date	Transition End Date	Rule Date
S13	BULK/Wholesale Meters	A36	Create/activate export and import (active (kWh) and reactive (kVarh)) energy datastreams in CNDS table	 Create Datastreams to Suffix Level Inactivate Net datastream 	MDP	CR400x CR405x	9-Mar-21	31-Aug-21	By 1 Oct 2021
S13	BULK/Wholesale Meters	A36b	Update Meter Read Type code with RWDA	1. Update Meter Read Type code with RWDA	MPB	CR305x	9-Mar-21	31-Aug-21	By 1 Oct 2021
S14	Type 1-3 meters	A40	Create/activate export and import (active (kWh) and reactive (kVarh)) energy datastreams in CNDS table	 Create Datastreams to Suffix Level Inactivate Net datastream 	MDP	CR400x CR405x	9-Mar-21	31-Aug-21	By 1 Oct 2021
S14	Type 1-3 meters	A40b	Update Meter Read Type code with RWDA	1. Update Meter Read Type code with RWDA	MPB	CR305x	9-Mar-21	31-Aug-21	By 1 Oct 2021
S15	Cross Boundary meters (Known)	A45	Create/activate export and import (active (kWh) and reactive (kVarh)) energy datastreams in CNDS table	 Create Datastreams to Suffix Level Inactivate Net datastream 	MDP	CR400x CR405x	9-Mar-21	31-Aug-21	By 1 Oct 2021
S15	Cross Boundary meters (Known)	A45b	Update Meter Read Type code with RWDA	1. Update Meter Read Type code with RWDA	MPB	CR305x	9-Mar-21	31-Aug-21	By 1 Oct 2021
S15	Cross Boundary meters (Known)		Update Meter Read Type code with RWDA	1. Update TNI2 & NSP3	AEMO	CR51xx	9-Mar-21	31-Aug-21	By 1 Oct 2022
S17	New and replacement Type 4	A57	Create/activate export and import (active (kWh) and reactive (kVarh)) energy datastreams in CNDS table	 Create Datastreams to Suffix Level Inactivate Net datastream 	MDP	CR400x CR405x	9-Mar-21	30-Nov-22	By 1 Dec 2022
S17	New and replacement Type 4	A57b	Update Meter Read Type code with RWDA	1. Update Meter Read Type code with RWDA	MPB	CR305x	9-Mar-21	30-Nov-22	By 1 Dec 2022
S18	New and replacement Type 4A	A63	Create/activate export and import (active (kWh) and reactive (kVarh)) energy datastreams in CNDS table	 Create Datastreams to Suffix Level Inactivate Net datastream 	MDP	CR400x CR405x	9-Mar-21	30-Nov-22	By 1 Dec 2022
S18	New and replacement Type 4A	A63b	Update Meter Read Type code with RWDA	1. Update Meter Read Type code with RWDA	MPB	CR305x	9-Mar-21	30-Nov-22	By 1 Dec 2022
S19	New and replacement VIC AMI meters	A69	Create/activate export and import (active (kWh) and reactive (kVarh)) energy datastreams in CNDS table	 Create Datastreams to Suffix Level Inactivate Net datastream 	MDP	CR400x CR405x	9-Mar-21	30-Nov-22	By 1 Dec 2022
S19	New and replacement VIC AMI meters	A69b	Update Meter Read Type code with RWDA	1. Update Meter Read Type code with RWDA	MPB	CR305x	9-Mar-21	30-Nov-22	By 1 Dec 2022

Applicable MTP Activities

SID	Sub-Category	AID	Activity	Actions	Role	CATS CRs	Transition Start Date	Transition End Date	Rule Date
S20	New and replacement SAMPLE Meters	A75	(active (kWh) and reactive (kVarh))	 Create Datastreams to Suffix Level Inactivate Net datastream 	MDP	CR400x CR405x	9-Mar-21	30-Nov-22	By 1 Dec 2022
S20	New and replacement SAMPLE Meters	A75b	Update Meter Read Type code with RWDA	1. Update Meter Read Type code with RWDA	MPB	CR305x	9-Mar-21	30-Nov-22	By 1 Dec 2022
S22	Type 7 metering installations	A83a	(active (kWh) and reactive (kVarh))	 Create Datastreams to Suffix Level Inactivate Net datastream 	MDP	CR400x CR405x	9-Mar-21	31-Aug-21	By 1 Oct 2021
S26	Cross-boundary supplies	A95	Create cross-boundary NMIs	 Create and activate NMI Update NMI to active status 	LNSP	CR20xx CR50xx	9-Mar-21	31-Aug-21	By 1 Oct 2021
S26	Cross Boundary meters (Known)		Update Meter Read Type code with RWDA	1. Update TNI2 & NSP3	AEMO	CR51xx	9-Mar-21	31-Aug-21	By 1 Oct 2022
S26	Cross-boundary supplies	A96	Create Datastreams in MSATS	1. Create Datastreams at Suffix Level	MDP	CR40xx	9-Mar-21	31-Aug-21	By 1 Oct 2021
S26	Cross-boundary supplies	A97	Create registers in MSATS	1. Install meter (includes Meter read type = RWDA)	MPB	CR30xx	9-Mar-21	31-Aug-21	By 1 Oct 2021
S27	Non-contestable unmetered loads	A99	Create Non-contestable unmetered load NMIs	 Create and activate NMI Update NMI to active status 	LNSP	CR20xx CR50xx	9-Mar-21	31-Aug-21	By 1 Oct 2021
S27	Non-contestable unmetered loads	A100	Create Datastreams in MSATS	1. Create Datastreams at Suffix Level	MDP	CR40xx	9-Mar-21	31-Aug-21	By 1 Oct 2021
S27	Non-contestable unmetered loads	A101	Create registers in MSATS	1. Install meter (includes Meter read type = RWDA)	MPB	CR30xx	9-Mar-21	31-Aug-21	By 1 Oct 2021
S27a	Convert 'SASCALE NMI'	A101a	Create cross-boundary NMIs	1. Make bulk NMI Extinct	LNSP	CR50xx	9-Mar-21	31-Aug-21	By 1 Oct 2021
S27a	Convert 'SASCALE NMI'	A101b	Create Datastreams in MSATS	1. inactive Datastreams at Suffix Level	MDP	CR405x	9-Mar-21	31-Aug-21	By 1 Oct 2021
S27a	Convert 'SASCALE NMI'	A101c	Create registers in MSATS	1. inactive meter (includes Meter read type = RWDA)	MPB	CR35xx	9-Mar-21	31-Aug-21	By 1 Oct 2021
	New NMI classification codes - BULK	A103	Update NMI Class Codes for existing NMIs as required	1. Update NMI Classification Code	TNSP	CR50xx	1-May-21	31-Aug-21	By 1 Oct 2021

Applicable MTP Activities

SID	Sub-Category	AID	Activity	Actions	Role	CATS CRs	Transition Start Date	Transition End Date	Rule Date
S30	New NMI classification codes - DWHOLESAL		Update NMI Class Codes for existing NMIs as required	1. Update NMI Classification Code	LNSP	CR50xx	1-May-21	31-Aug-21	By 1 Oct 2021
S31	New NMI classification codes - NREG		Update NMI Class Codes for existing NMIs as required	1. Update NMI Classification Code	LNSP	CR50xx	1-May-21	31-Aug-21	By 1 Oct 2021
S32	New NMI classification codes - XBOUNDRY		Update NMI Class Codes for existing NMIs as required	1. Update NMI Classification Code	LNSP	CR50xx	1-May-21	31-Aug-21	By 1 Oct 2021
S35	LR and FRMP fields		existing NMIs as required	1. Update LR and FRMP to GLOPOOL for existing NMIs as required	AEMO	BC00	1-May-22	1-May-22	1-May-22
S36	Tier 1 basic metering data		Create/activate tier 1 basic meter datastreams as required	1. Create datastreams	MDP	CR40xx	9-Mar-21	30-Jun-21	By 1 Oct 2021
S38	VIC TUOS datastreams		the second se	 Update Datastreams to Suffix Level Inactivate Net datastream 	MDP	CR400x CR405x	9-Mar-21	31-Aug-21	By 1 Oct 2021



MTP CATS Transaction Volume Management

Initial assumptions:

- 1 transaction per 'Action'
 - e.g. S13 has 3 actions therefore 3 CATS transactions are assumed
 - Create datastreams at suffix level All applicable datastreams for a NMI created in one CR400x transaction
 - Inactive Net datastreams All applicable Net datastreams for a NMI inactivated in one CR405x transaction
 - Update Meter Read Type code All applicable registers for a NMI updated in one CR305x transaction
- 3 notifications per CATS CR (Requested, Pending and Completed)
- All 3 notifications processes in the same month
- Linear volumes per day
- Linear activation of Basic meter datastreams over a 8mth period (Nov 20 to June 2021) LR impact
 - More sophisticated assumption required to reflect likely volume shape
 - AEMO to engage with key Participants

Key inputs:

- Participant Tranche 1 and Tranche 2 rollout plans
- AEMO data extracts from MSATS

Potential constraints:

- MSATS Daily limits Number of transactions a Participant can initiate/process
- Stop files/unprocessed transition limits
- Need to consider these MTP related volumes on top of BAU notification volumes

Pre 5MS Go Live CATS Transaction Volume Estimates

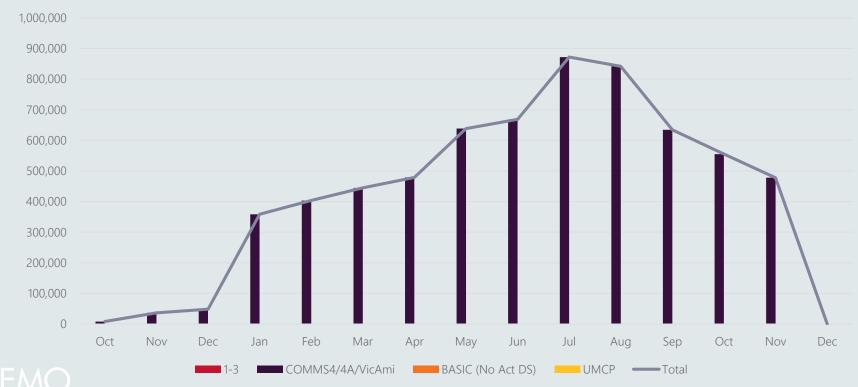
- Single CATS CR for the majority of the changes
- Numbers of CR Transactions to peak at 200,000+ month
 - Majority of changes related to Tier 1 Basic Meter Datastream activation
- Numbers of CR Notifications ("REQ", "PEND", "COM") estimated to peak at 600,000+ month



Pre 5MS Go Live - CATS CR Numbers

Post 5MS Go Live to 1 Dec 2022 CATS Transaction Volume Estimates

- Three CATS CRs required for the majority of changes
- Numbers of CR Transactions to peak at 870,000+ month
- Numbers of CR Notifications ("REQ", "PEND", "COM") estimated to peak at 2,610,000+ month
 - Does not consider multiple Participants receiving Notifications



Post 5MS Go Live to 1 Dec 2022 - CATS CR Numbers

Notes (1/3)

- Slide 13 15 provided a summary of all the MTP activities that impact CATS transactions.
- AEMO confirmed that updating a meter ReadTypeCode with a fourth character of 'A' meant that the meter was expected to deliver 5-min metering data to the market.
- A member noted that at a previous ERCF it was stated that the meter ReadTypeCode for manually read meters did not need to be updated. AEMO clarified that for TFG purposes, the focus of the MTP was on the transition to 5MS & GS and that other Procedural requirements e.g. population of the ReadTypeCode for manually read meters is to be considered outside of the 5MS Program.
- It was noted that the data presented on slide 16 did not capture the multiplier for the number of participants that receive each status notification i.e. multiplier for FRMP, LR, LNSP, etc.
- It was noted that participants have daily limits set up within MSATS and potentially within their own systems with may create constraints. Changing daily limits within MSATS is a straight forward process. Participants should assess what the correct balance is between the daily limits in their own systems and MSATS for their individual businesses. If it is determined that the expected increase in volumes may cause an issue for a particular participant, AEMO is happy to discuss possible options with that Participant.
- AEMO noted that when Participants perform their impact assessments they should consider 5MS/GS, BAU and other initiative (e.g. MSDR) requirements
 AEMO

Notes (2/3)

- Slide 16 assumed a multiplier of 3 for certain CRs (PEND, REQ and COM). A member questioned if that assumption was appropriate as certain CRs only result in a COM notification being delivered. AEMO to review this assumption and update as appropriate.
- AEMO confirmed that Hokey Pokey volumes were not included in the data presented in slide 17.
- A discussion took place on AEMO providing a holistic view of the impacts on standing data as a result of 5MS and non-5MS changes. It was noted by a participant that this information was discussed at a MSATS Standing Data Review forum with industry earlier in the year.



Notes (3/3)

- Action 9.3.1: TFG to consider the assumptions applied in the initial AEMO CATS transaction analysis and provide feedback as to what assumptions should change to support the second stage of analysis
- Action 9.3.2: AEMO to set up a SWG / RWG forum to talk through CATS transaction volume implications from a systems perspective
- Action 9.3.3: AEMO to liaise internally to consider how best to facilitate a more holistic view of the anticipated MSATS standing data updates associated to both 5MS and non-5MS requirements.



Cross Boundary categories, conditions and requirements

David Ripper



Cross Boundary Categories

Cross Boundary Supply Categories

- Metered at the Boundary
- Not Metered at the Boundary
 - Unmetered emergency connection between supply and receiving distribution networks that is used infrequently
 - Metered at End User connection point generally a single connection point in the receiving distribution network connected to a service or a circuit from the supply distribution network



Metered at the Boundary

- DNSPs, in consultation with AEMO, will create Cross Boundary NMI
- LNSP = Supply DB Participant ID
- TNI = Supply DB TNI
- NSP2 = Receiving DB Participant ID populated by AEMO
- TNI2 populated by AEMO

Not metered at the Boundary

- Approval must be obtained from AEMO
- AEMO, in consultation with DNSPs, will determine the metering or energy volume assessment arrangements for the Cross Boundary Supply

Unmetered at the Boundary (Emergency)

- LNSP, in consultation with AEMO and receiving DB, must provide methodology for assessing energy volume flowing at the Unmetered Cross Boundary Supply
- LNSP must develop processes and procedures that include:
 - Energy volume assessment methodology,
 - Identification of time period the Unmetered Cross Boundary Supply was in use,
 - NMI and datastream activation process, and
 - Provision to AEMO of details of the form in which information related to each use of an Unmetered Cross Boundary Supply



Unmetered at the Boundary (Emergency) - continued

- DNSPs, in consultation with AEMO, will create Cross Boundary NMI
- LNSP = Supply DB Participant ID
- TNI = Supply DB TNI
- NSP2 = Receiving DB Participant ID populated by AEMO
- TNI2 populated by AEMO
- LNSP must ensure that NMI and datastreams are active only for the period when the Unmetered Cross Boundary Supply is in use, otherwise the NMI and datastreams must not be active



Metered at End User connection point

- DNSPs must provide AEMO with End User NMIs
- End User connection point must have remotely read interval meter (can be 5, 15 or 30-minute)
- DNSPs, in consultation with AEMO, will create/maintain "Cross Boundary NMI"
- LNSP = Receiving DB Participant ID
- TNI = Supply DB TNI
- NSP2 = Supply DB Participant ID populated by LNSP (new CR6xxx)

Targeting the end of October 2020 to provide the draft 'Cross Boundary Supply Guideline'

Notes

- AEMO is targeting to have the first draft of the Cross-Boundary Guidelines published by the end of October 2020.
- It was confirmed that CR6xxx would not require a schema change.
- It was confirmed that where AEMO populates the NSP2 and/or TNI2 fields that notifications would be delivered to those participants entitled to receive them.
- For unmetered at the boundary (emergency) scenarios, activation of the NMI is only required during the emergency periods. Noting that if the NMI/datastreams remained active, meter reads would need to be provided.



Next steps and general business

Greg Minney



Next steps & general business

- Participants to consider:
 - Initial aggregate estimates and underlying assumptions
 - How these estimates support Participant impact assessments
 - Potential system and process impacts
 - What additional engagement will be required with other Participants to complete assessments and planning
 - Potential bulk capability requirements
 - Potential alternative management options
- AEMO to engage relevant Participants to assist in refining Basic meter and NCONUML assumptions
- AEMO to schedule monthly TFGs
 - Sessions to be cancelled when not deemed necessary



Notes

• Action 9.5.1: AEMO to book monthly TFG as placeholders.



Thank you for your attendance and participation!



