

Five-minute settlement and global settlement

October 2020

Market Readiness Report - Round 4

Background

To monitor the industry's level of readiness for the various 5MS and GS transitional activities and commencements, AEMO will co-ordinate readiness reporting across the industry in accordance with the Readiness Reporting Plan.¹ NEM participants are invited to submit readiness information on a periodic basis through a Readiness Assessment Questionnaire. The results from these surveys are presented in this Market Readiness Report.

Readiness criteria

Participants' level of readiness will be assessed through general readiness criteria, specific readiness criteria, and also their status against the Metering Transition Plan (MTP).²

Criteria	Overview	Response options	Results presentation	
General Readiness	Criteria related to the level of program establishment of	Participants are asked to provide Yes / No responses to a set of program	All Yes and No responses are presented in a bar chart.	
Criteria	participant programs.	establishment questions e.g. if funding is secured.	All responses are unweighted.	
Specific	Criteria that tracks the	Participants (including AEMO) are asked	Participants' status and progression towards specific criteria are	
Readiness Criteria	implementation of specific market commencement	to report their status towards fulfilling these requirements by market	illustrated in a bar chart.	
	requirements for each participant type. Hence, each participant type will have	commencement (on track, at risk or late), and also report on progress in 25% increments.	Each segment of the bar represents 25% progress. The bar will progressively fill with solid colours as the criteria is completed.	
	their own set of specific readiness criteria e.g. generators' ability to		The bar chart will be coloured red, amber or green based on if the criteria is on track, at risk or late.	
	submit 5 min bids by 1 October 2021, retailers ability to receive and reconcile 5 minute data.		All responses are unweighted.	
Metering	Status monitoring of defined	Participants are asked to provide their	All responses are presented in a bar chart.	
Transition Plan	activities in the MTP. The	status towards completing activities by		
Status	MTP outlines the expected activities, responsibilities, timeframes, as well as other necessary elements required for completion of the 5MS	the transition end date for each defined sub-category in the MTP (Complete, On track (started), On track (not started), At risk, Late, n/a).	All responses are unweighted.	
	and GS metering transition.	Given that a sub-category has multiple activities supported by various participant types, respondents were only expected to provide status reporting for activities that were relevant to their participant type.		

Participant industry coverage

The approach to gauging industry coverage for each readiness report is described below for each participant type.

Participant type Industry coverage methodology		Data source	
Generator	Generator respondents' capacity / NEM capacity	AER 2019 state of the market report - generation capacity data	
Retailer Retailer respondents' settlement vol. / NEM vol.		AEMO settlement data - 2019 calendar year	
MP MP respondents' total type 1-4 NMIs/ total type 1-4 NMIs		AEMO metering data	
MDP MDP respondents' total type 1-4 NMIs/ total type 1-4 NMIs		AEMO metering data	
MC MC respondents' total type 1-4 NMIs/ total type 1-4 NMIs		AEMO metering data	
DNSP	Number of DNSPs survey respondents / Total DNSPs	AER 2019 state of the market report - DNSP data	
TNSP	Number of TNSPs survey respondents / Total TNSPs	AER 2019 state of the market report - TNSP data	

program-and-global-settlement/readiness-workstream/key-readiness-documents

¹ Readiness documents, including the Industry Readiness Reporting Plan, and Metering Transition Plan can be accessed at: <u>https://www.aemo.com.au/initiatives/major-programs/nem-five-minute-settlement-</u>

Essential industry capabilities for 5MS and GS commencements

The essential minimum capabilities for 5MS and GS commencements are described below for each relevant participant type.

Essential capability	Relevant participant	Reporting Criteria
Generators and MNSPs are able to submit 5-min offers	Generators / MNSPs	a) Generators representing >80% of regional load are responding to Industry Readiness Surveys, and;
		 b) Generators representing >80% of regional load are reporting 'On-track' to be able to submit 5-minute granularity offers
All essential meters* are able to	MPs	a) 100% of MPs associated to essential metering are responding to Industry Readiness Surveys,
produce and store 5-min data		and;
		 b) 100% of MPs associated to essential metering are reporting 'On-track' for all applicable MTP activities
All essential meters* are able to	MCs	a) 100% of MCs associated to essential metering are responding to Industry Readiness Surveys,
produce and store 5-min data		and;
		b) 100% of MCs associated to essential metering are reporting 'On-track' for all applicable MTP activities
All essential meters* are able to deliver 5-min metering data	MDPs	a) 100% of MDPs associated to essential metering are responding to Industry Readiness Surveys, and;
		 b) 100% of MDPs associated to essential metering are reporting 'On-track' for all applicable MTP activities (S01)
The 5-minute bidding and dispatch solution, including the web bidding interface is deployed	AEMO	a) AEMO reporting 'On-track' for all Bidding/Dispatch reporting criteria and milestones
The Metering Data Management (MDM) solution is deployed	AEMO	a) AEMO reporting 'On-track' for all MDM Milestones
The 5-minute settlements solution is deployed	AEMO	a) AEMO reporting 'On-track' for all Settlement Milestones

Disclaimer

This market readiness report has been prepared by AEMO at the request of the industry for the purpose of tracking and monitoring the industry's level of readiness for 5MS and GS. This report contains self-reported readiness information provided by participants, and may not be free from errors or omissions. Accordingly, to the maximum extent permitted by law, AEMO makes no representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of the information published here; and are not liable (whether by reason of negligence or otherwise) for any statements, opinions or other matters contained in or derived from this information, or any omissions from it, or in respect of a person's use of the information.

Submissions

Strong survey coverage, with 44 respondents representing 95-100% of the industry. Response rate across all participant types provides representative industry coverage.

	This round	Prev. round	∆ (#)	Trend	
Respondents	44	42	2		
Participant types	105	92	13		
Generator	17	14	3		
Retailer	19	16	3	≜	
MP	17	17	0	-	
MDP	16	14	2	≜	
MC	19	14	5		
DNSP	10	10	0	-	
TNSP	7	7	0	-	



	Industry coverage						
	% Industry coverage	Industry coverage methodology					
Generator	95.1%	Generator respondents' capacity / NEM capacity					
Retailer	98.6%	Retailer respondents' settlement vol. / NEM vol.					
MP	99.9%	MP respondents' total type 1-4 NMIs/ total type 1-4 NMIs					
MDP	99.9%	MDP respondents' total type 1-4 NMIs/ total type 1-4 NMIs					
MC	99.8%	MC respondents' total type 1-4 NMIs/ total type 1-4 NMIs					
DNSP	100%	Number of DNSP survey respondents / Total DNSPs					
TNSP	100%	Number of TNSP survey respondents / Total TNSPs					

#	Торіс	Observation / Actions
1	Response rate, All participant types	A total of 44 organisations responded to the fourth round of readiness reporting, representing an even mix of participant types. Response rate across all participant types provides representative industry coverage.
2	Response rate, All participant types	Coverage across the industry for all participant types ranges from 95% to 100%. This exceeds the 80% coverage threshold for reporting against essential criteria.
3	Response rate, All participant types	Three MPs and one MCs with responsibility of essential meters did not respond to the survey, or did not respond to the essential metering criteria. Action: AEMO to follow up with relevant MPS and MCs with essential meters to confirm program status and if remediation is required.

Overall program delivery progression, by reporting round

There has been consistent progress with participants 5MS and GS programs, with two-thirds of respondents now focused on development and testing. The remaining participants are in the scoping and design phase of their programs. All except one respondent noted that they are on track.

	Round 1	Round 2	Round 3	Round 4	Round 5
0%	0%	0%	2%	0%	-
1 - 24%	92%	70%	40%	34%	-
25 - 49%	8%	20%	38%	45%	-
50 - 74%	0%	5%	17%	18%	-
75 - 99%	0%	3%	2%	2%	-
100%	0%	0%	0%	0%	-
n/a	0%	3%	0%	0%	-
Total	100%	100%	100%	100%	-



Participants' overall program delivery progression, by participant type - Round 4



#	Торіс	Observation / Actions
4	Overall Participant Program Progress	There has been consistent progress with participants 5MS and GS programs, with two-thirds of respondents now focused on development and testing. The remaining participants are in the scoping and design phase of their programs. Majority of participants are on track to participate in market trials.
5	Overall Participant Program Status	Participants are reporting that their overall program is on track, including a participant that previously reported a 'late' status in round three. One generator flagged that their overall program is 'late', noting that they are focusing on other priorities but expect to be on track by year end. Action: AEMO to follow up to understand 'late' status and establish level of remediation expected
6	Raised risks	One participant flagged that customer switching going live on the same day as 5MS could created dependency and risks. Another participant raised a risk regarding industry vendors not having access to the 5MS staging environment. Action: RWG to consider impact of potential industry risks

AEMO Readiness Criteria

Support 5-min reallocations Support standing data processing for GS Switch Local Retailer and FRMP to GLOPOOL Support UFE calculation and publication Support meter data processing for GS 5 min-format invoices to support reconciliation MDM platform upgraded to support 5-min profiling MDM platform upgraded to receive 5 - minute data Changes to settlement calculation Bidding Transition

Complete



#	Topic	Observation / Actions
7	AEMO Readiness Criteria	AEMO is on track to deliver the market systems in line with committed milestones. In this round of
		reporting, AEMO's progress towards 'Switching Local Retailer and FRMP to GLOPOOL' has advanced to the
		next quartile (25 - 49% Complete).

5MS GS Essential Industry Capabilities								
Essential capability	Relevant	Reporting criteria met	Number of participants					
	participants		On Track	At Risk	Late	Not responded	Remediation Plan?	Escalation Required?
Generators and MNSPs are able to submit 5-min offers	Generators / MNSPs	Yes	15	1	1	5	No	No
All essential meters* are able to produce and store 5-min data	MPs	No	7	0	0	3	No	No
All essential meters* are able to produce and store 5-min data	MCs	No	10	0	1	1	No	No
All essential meters* are able to deliver 5-min metering data	MDPs	Yes	3	0	0	0	No	No
The 5-minute bidding and dispatch solution is deployed, including the web bidding interface	AEMO	Yes	1	0	0	0	No	No
The Metering Data Management (MDM) solution is deployed	AEMO	Yes	1	0	0	0	No	No
The 5-minute settlements solution is deployed	AEMO	Yes	1	0	0	0	No	No

* Essential meters are defined as transmission connected types 1-4 meters

* Please see background section at the start of this report for more information on the reporting criteria for essential industry capabilities

#	Topic	Observation / Actions
8		One generator reported a 'late' status for their readiness to submit 5-min offers, noting that they expect to be on track by the end of year. Another generator report an 'at risk' status , and is now focused on engaging vendors. Action: AEMO to establish with generator reporting 'at risk' if a remediation plan or escalation is required
9	Submit 5 min offers, Generators	Five generators that contribute materially (>1%) to the NEM did not respond to the survey, including one generator in Queensland that contributes over 10% of load. However, generators that responded in Round 4 represent over 80% of capacity and load in each NEM region (using 2019 data), therefore satisfying the coverage criteria.
10	Essential meters, MC	One MC reported a 'late' status, noting that they have not provided a forward plan and approach to AEMO on their metering rollout. Action: AEMO to follow up with relevant MC and confirm expected completion date of activity
11	Essential meters, MP, MC	Three MPs and one MC with responsibility of essential meters did not respond to this survey, responded with inconsistencies, or did not respond to the essential metering criteria. Action: AEMO to follow up with MPs and MC not responding to essential metering criteria to confirm status and escalation / remediation approaches







#	Торіс	Observation / Actions
12	COVID-19 Response, All participants	Compared to the previous round of reporting, 88% of participants are not experiencing any change in their ability to implement 5MS and GS due to COVID-19. A minority (12%)are experiencing minor changes. No impact was noted against overall program progression.
	Early delivery of 5-minute data, (Retailers, DNSPs, TNSPs, MDPs)	The proportion of retailers, network service providers and MDPs that intend to enter into agreements to deliver or receive metering data in sub-multiples of a trading interval is consistent with round three of reporting. Participants are flagging that Q1 and Q2 2021 is when they expect to initiate or enter into agreements.

5MS GS Market Readiness Report - Round 4 Retailers Number of respondents 19 % Industry coverage 99%

Overall Progress and Status

Retailers have well established programs, with programs on average 25-49% complete. All retailers are reporting as on track.



Specific Readiness Criteria Specific criteria - Average progression Specific criteria - Progression responses Summary readiness -19 14 11 4 6 Summary readiness - Specific Specific 5-min reallocations 5-min reallocations 111 UFE allocations data UFE allocations data 5-min settlements data 5-min settlements data 5-min metering data /////// 5-min metering data 0% 25% 50% 75% 100% 50 - 74% 0% 1 - 24% 25 - 49% Complete Win progress OND Not started 75 - 99% 100% Not relevant

#	Торіс	Observation / Actions
16	Specific criteria, Retailers	Retailers are reporting a wide range of responses when reporting on progression towards developing specific capabilities for 5MS and GS. They are 25-49% progressed on average, and are generally on track.
17	Specific criteria, Retailers	The average progression on 5-minute settlements data increased by one quardrant, however the average progression of other generator specific criteria remains the same.
18	Specific criteria, Retailers	One participant raised a risk of inaccurate UFE information if cross boundary meters are not appropriately configured by the transition end dates. Action: RWG to consider risk of cross boundary meters not appropriately configured by transition end date

5MS GS Market Readiness Report - Round 4			
Generators			
Number of respondents	17	% Industry coverage	95%

Overall Progress and Status

Generators have well established programs, with programs on average 25-49% complete. Generators are generally reporting as on track, with one generator reporting an 'late' status, and another reporting a 'at risk' status for generator specific readiness criteria.





#	Торіс	Observation / Actions
20	Specific criteria, Generators	Generators are reporting a wide range of responses when reporting on progression towards developing specific capabilities for 5MS and GS. They are 25-49% progressed on average, and are generally on track. Two generators reported a late or at risk status, due to competing priorities and schedule pressures from the time required to complete the tender process for vendors. Action: AEMO to establish if a remediation plan or escalation is required, in consideration of overall market load and generator plans
21	Specific criteria, Generators	The average progression on 5-minute settlements data increased by one quardrant, however the average progression of other generator specific criteria remains the same.





	minute metering data. They are 25-49% progressed on average, and are all reporting on track.
27	DNSPs are reporting that MSATS Standing Data Creation and Maintenance activities in the MTP are on track. MTP transition windows have been adjusted in line with the new commencement dates. Note if a DNSP responded that a MTP sub-category is not relevant to them their response is omitted from the results.



#	Торіс	Observation / Actions
28	General Criteria, MPs	MPs generally have well established programs and are reporting on track.
29	MTP Criteria (Meter Installation and reconfiguration), MPs	MPs are reporting that all MP related meter installation and reconfiguration activities are on track.
30	MTP Criteria (Meter Installation and reconfiguration), MPs	Three MPs with responsibility of essential meters did not respond to this survey, responded with inconsistencies, or did not respond to the essential metering criteria. Action: AEMO to follow up with MPs not responding to essential metering criteria to confirm status and escalation / remediation approaches







Metering Accreditation Updates



#	Торіс	Observation / Actions
	MTP Criteria (MSATS Standing Data Creation and Maintenance), MDPs	MDPs are reporting that all MDP related MSATS standing data creation and maintenance activities are on track.
	MTP Criteria (Metering Accreditation Updates), MDPs	MDPs are reporting that all MDP related metering accreditation update activities are on track.
38	MTP Criteria, MDPs	MTP transition windows have been adjusted in line with the new commencement dates. Note that if a MDP responded that a MTP sub-category is not relevant to them their response is omitted from the results. AEMO also intends to cross reference MDP survey responses with provided rollout plans.



Survey Respondents

All organisations - 44

All organisations - 44
Organisation
AGL
Alinta Energy
АРА
Arrow Energy
Aurora Energy
Ausgrid
Ausnet Services
CitiPower Powercor United Energy
CS Energy
Delta Electricity
Electranet
Endeavour Energy
Energex and Ergon Energy
Energy Australia
ENGIE ANZ
Ergon Retail
ERM Power
Essential Energy
Evoenergy
Flow Power
Hydro Tasmania
Infigen Energy
Intellihub
Jemena
Macquarie Bank
Metering Dynamics
Metropolis Metering Services
Mondo
Origin Energy
PLUS ES
Powerlink
Powermetric
Powershop
Red Energy and Lumo Energy
RES Australia
SA Power Networks
SA Water
Shell Energy Australia
SIMEC ZEN Energy
Snowy Hydro
Stanwell
TasNetworks
TransGrid
Vector Metering

Generators - 17

Organisation
AGL
Alinta Energy
АРА
Arrow Energy
CS Energy
Delta Electricity
Energy Australia
ENGIE ANZ
ERM Power
Hydro Tasmania
Infigen Energy
Origin Energy
RES Australia
SA Water
Shell Energy Australia
Snowy Hydro
Stanwell
Origin Energy RES Australia SA Water Shell Energy Australia Snowy Hydro

Retailers - 19

Organisation
AGL
Alinta Energy
Aurora Energy
CS Energy
Delta Electricity
Energy Australia
ENGIE ANZ
Ergon Retail
ERM Power
Flow Power
Hydro Tasmania
Infigen Energy
Macquarie Bank
Origin Energy
Powershop
Red Energy and Lumo Energy
SA Water
Stanwell
SIMEC ZEN Energy

Survey Respondents

<u>MPs - 17</u>

Organisation
AusNet Services
CitiPower Powercor
Endeavour Energy
Energex and Ergon Energy
Essential Energy
Evoenergy
Intellihub
Jemena
Metering Dynamics
Metropolis Metering Services
Mondo
PLUS ES
Powerlink
Powermetric
SA Power Networks
TasNetworks
Vector Metering

MDPs - 16

Organisation
AusNet Services
CitiPower Powercor United Energy
Endeavour Energy
Energex and Ergon Energy
Essential Energy
Evoenergy
Intellihub
Jemena
Metering Dynamics
Metropolis Metering Services Pty Ltd
Mondo
PLUS ES
Powermetric
SA Power Networks
TasNetworks
Vector Metering

<u> MCs - 19</u>

Organisation
Ausgrid
AusNet Services
CitiPower Powercor United Energy
ElectraNet
Endeavour Energy
Energy Australia
Evoenergy
Intellihub
Jemena
Metering Dynamics
Metropolis Metering Services
Mondo
Origin Energy
PLUS ES
Powerlink
Powermetric
TasNetworks
TransGrid
Vector Metering

<u>TNSPs - 7</u>

Organisation
Ausgrid
Ausnet Services
Electranet
Evoenergy
Powerlink
TasNetworks
Transgrid

DNSPs - 10

Organisation
Ausgrid
Ausnet Services
CitiPower Powercor United Energy
Endeavour Energy
Energex and Ergon Energy
Essential Energy
Evoenergy
Jemena
SA Power Networks
TasNetworks