MINUTES

MEETING:	ST PASA Replacement Project Workshop #2 – Overview of the new process
DATE:	Thursday, 19 May 2022
TIME:	10:00am-12:00pm AEDST
LOCATION:	Microsoft Teams Meeting only
TELECONFERENCE DETAILS:	**Join on your computer or mobile app:** Click here to join the meeting **Join with a video conferencing device** aemo-au@m.webex.com Video Conference ID: 134 161 298 6 Alternate VTC instructions **Or call in (audio only):** +61 2 8318 0090,,2397353# Australia, Sydney Phone Conference ID: 239 735 3#

EXTERNAL ATTENDEES:

ORGANISATION REPRESENTED
AEC
AER
Alinta Energy
AusNet Services
CS Energy
Energy Australia
Global ROAM
Hydro Tas
Iberdrola
Intergen
Origin
Overwatch Energy
Powercor
RM Hedge
Shell Energy
Snowy Hydro
Stanwell

Agenda:

No.	Time	Agenda item	Responsible
1.	10:00 am – 10:05 am	Welcome and Introductions	Paul Johnson Chair
2.	10:05 am – 10:15 am	Background of ST PASA Replacement Project	Shivani Mathur AEMO - OPERATIONS

3.	10:15 am – 10:25 am	Key Themes	Shivani Mathur AEMO - OPERATIONS
4.	10:25 am – 10:40 am	Determination of Reliability – the new paradigm	Shivani Mathur AEMO - OPERATIONS
5.	10:40 am – 10:50 am	Uncertainty Margins and Confidence Levels	Jack Fox AEMO - OPERATIONS
6.	10:50 am – 11:20 am	Overall Design	Ross Gillett AEMO - OPERATIONS
7.	11:20 am – 11:50 am	Q & A (any further feedback)	Shivani Mathur AEMO - OPERATIONS
8.	11:50 am – 12:00 pm	Next Steps, Project timeline	Shivani Mathur AEMO - OPERATIONS

Item #1: Welcome and Introduction – Chair – Paul Johnson (AEMO)

The chair welcomed and informed the attendees that:

- Notes will be taken, and a summary circulated after the session.
- Participants are not permitted to record the meeting. Unauthorised recording is likely to break a number of state and federal laws.

Item #2: Background of ST PASA Replacement Project – Shivani Mathur (AEMO)

Slides 3 to 6 from the slide pack were reiterated for the benefit of those not in attendance at Workshop #1.

Key discussion points were:

- Objective of the ST PASA Replacement Project
- Progress to date
- These stakeholder workshops are being held to work through technical concepts in detail. These workshops are being held for information purposes and also for seeking feedback from stakeholders, which will feed into the formal procedure consultation and detailed business requirements of the new ST PASA process.

Item #3: Key Themes – Shivani Mathur (AEMO)

Slides 7 to 9 from the slide pack were discussed. This included the reasons and benefits of modelling the full network model and the use of probabilistic approach in determining uncertainties in the input.

- No comments were made from stakeholders in relation to this topic.

Item #4 – Determination of Reliability – the new paradigm – Shivani Mathur (AEMO)

Slides 10 to 15 from the slide pack were discussed.

Key discussion points were:

- A question was raised by Shell relating to slide 11 about whether each node would be allocated a share of the Uncertainty Margin if reliability is to be assessed at individual nodes.
    - AEMO's response was that each node would be allocated a share of the Uncertainty Margin and that some industrial nodes may need to be excluded as there isn't much uncertainty at these locations (i.e. their Uncertainty Margin would be 0)
- Another question raised by Shell was relating to the methodology of allocating Uncertainty Margin and if this would be discussed at a future workshop
    - AEMO's response was that Workshop #4 would be discussing the detail of the methodology
- A further question was raised about what the Demand Uncertainty is based on
    - AEMO reiterated that the detail of this would be discussed in Workshop #4 – the modelling of the Uncertainty Margin, the inputs of the model and other detail

Item #5: Uncertainty Margins and Confidence Levels – Jack Fox (AEMO)

Slides 16 and 17 from the slide pack were discussed.

Key discussion points were:

- Some questions to be put on notice for Workshop #4 (raised by Shell) – the grounds on which the Uncertainty Margin be based on e.g. actual observed outcomes or AEMO's last forecast, and the details of the time intervals e.g. time-specific or smeared across all periods
    - AEMO acknowledged these questions and will take them on board for Workshop #4
- A question was raised by Stanwell on whether there is any consideration of possible demand side participation (DSP) impact on the Uncertainty Margin
    - AEMO responded that this hasn't explicitly been considered/modelled as an input driver at this stage however AEMO is already accounting for some DSP when that demand side activity does occur through correlation with some of the other inputs modelled. AEMO will consider this point further and include discussion on this in Workshop #4.
- A question raised by Energy Australia relating to how planned vs forced outages are being considered in the Uncertainty Margins relating to Max Availability i.e. how the impact of operators choosing to switch from available to offline in the short-term (ST) window is being considered so that the Uncertainty Margins are not inflated
    - AEMO acknowledged that this has been challenging and is being considered by the team i.e. minimising impacts of economic/commercial decisions on the Uncertainty Margin. Currently AEMO does not have a set position on this and some modelling to determine the correlating factors/drivers of this aspect has been undertaken (and AEMO is investigating further on potential inputs that could

be used in the Uncertainty Margin model), the results of which will be discussed in detail in Workshop #4 to obtain feedback.

- A question raised by Shell for Workshop #4 related to whether minimum levels are being set for Uncertainty Margins

    - AEMO responded that minimum levels are not set at this stage (still in the modelling phase currently) however noted that AEMO is intending to perform a back cast of the system and use that as a basis for removing some of these anomalies. Once results are obtained, AEMO would then be able to determine whether minimum levels are required as part of the methodology for setting confidence levels.

- Intergen asked if the Uncertainty Margin forecast will be published as a separate number to the market or would only one number for the demand forecast (which includes the uncertainty margin) be provided

    - AEMO's responded that for transparency, the Uncertainty Margin will be published separately so that the Uncertainty Margin on a particular element (node or generating unit) is known

- A comment was made by the AER that the benchmarking approach AEMO intends on performing sounds reasonable however incorporating confidence levels with reliability targets/standards and other factors in the market will be complex

    - AEMO acknowledged that it will be challenging applying annual reliability standards to operational implementation, and this will be discussed to obtain feedback in Workshop #4

Item #6: Overall Design – Ross Gillett (AEMO)

Slides 18 to 24 from the slide pack were discussed.

Key discussion points were:

- A question was asked by the AEC on the type of network model that is being used e.g. hub and spoke network model

    - AEMO responded that a full network model that models each specific link will be modelled due to the benefits of AEMO being able to model sudden changes to the network in a timely manner.

- Shell raised a question relating to the network ratings that will be used by AEMO

    - AEMO responded that there will be no changes to the current approach for network ratings i.e. continuous ratings for the system intact/no contingency run, short-term ratings as provided by NSPs for contingency runs and also 5min emergency dynamic ratings will continue to be used. Workshop #3 will be discussing more detail on the type of PASA runs undertaken and the inputs used for each of those runs (and the reason those inputs are used).

- A question was raised by Energy Australia on whether Max Availability vs PASA Availability (or both) will be used to determine reliability

- AEMO responded that Max Availability will be used for decision-making however PASA Availability will also be used as information only. The details of this will be provided in Workshop #4.

- A question was raised by the AER on the model that is used by AEMO in the ST PASA run

    - AEMO responded that the model used is the optimised DC power flow based on reactance and susceptance, however AEMO would attempt to run an AC power flow solve (though challenging) and if this run doesn't converge then AEMO would move to a DC power flow solve.

- A question was raised by Shell relating to the level of declaration of LORs i.e. at a nodal or regional basis

    - AEMO responded that it would be reported on a nodal basis and there will also be some form of aggregation so that decisions can be made at a regional or zonal basis, or at points of isolation that occur. Further discussions will be held in Workshop #5 on how stakeholders would like to see the information presented.

- A further question was raised by Shell regarding LORs declared based on ramp rates vs capacity constraints and whether this would be identified in market notices e.g. some units may be able to increase their ramp rates to remove the LOR which would be important for the market to understand

    - AEMO acknowledged this point and would consider this further

- A question was raised by Energy Australia relating to the type of information that might be published in relation to LOR declarations, Uncertainty Margins and level of likelihood so that the market understands the declarations and the methodology behind them in order for decisions and responses to be made

    - AEMO acknowledged this point and responded that we are considering the approach to the three LOR levels and the confidence levels for the Uncertainty Margins to be applied and how that may impact the type of LOR declaration that results

- Clarification was sought from the AEC on the design of the new ST PASA and its reliance on the price bands being used as an input, as well as using the adjusted forecast demand as an input and the dispatch that results from these inputs – could there be a possibility that AEMO is over-dispatching plant?

    - AEMO provided a link[1] to the Functional Requirements document available on AEMO's website for more detailed information on the new design, particularly relating to dispatch and an inflated demand forecast which account for forecast uncertainty. The use of price bands will loosely align with how they are used in pre-dispatch, provide for more stable outcomes between STPASA runs and provide a basis for assessing the relative degree of congestion.

[1] ST PASA Functional Requirements https://aemo.com.au/-/media/files/initiatives/st-pasa-replacement-project/st-pasa-detailed-requirements.pdf?la=en

- A question was raised by Shell relating to the recall time to be used
    - AEMO responded that the recall time will be an additional item in PASA Availability and that, instead of assuming a 24-hour recall, AEMO is asking participants to define their worst-case recall time, only if recall time is relevant
- A statement was made by CS Energy about more emphasis being required on highlighting system security issues and the services required to mitigate these issues rather than the traditional focus on reliability issues (e.g. through LOR declarations). For example, due to the 30-minute resolution of ST PASA runs, ramp rate issues may inadvertently be hidden due to PASA results reflecting bid price deviations
    - AEMO acknowledged this point and responded that there are processes outside of ST PASA (e.g. the operational security mechanism) that are considering this broader issue in more detail, i.e. participant commitment/bids, which will indirectly feed into the ST PASA process
- A question from Shell was raised relating to whether disaggregation of dispatch for WDR would only occur for WDR that are located at multiple nodes
    - AEMO confirmed this would be the case

Item #7: Q & A / other feedback – Shivani Mathur (AEMO)

- A question was raised by Energy Australia relating to the Uncertainty Margin determination for longer forecast horizons and whether caps for these or different confidence levels may be applied as the identified reserve shortfall period draws nearer
    - AEMO acknowledged that this is a characteristic of the Uncertainty Margin and that all options are being considered at this stage which will be discussed further in Workshop #4
- A comment was made from the AEC relating to a change in name for LOR2 so as not to confuse it with how the current LOR 2 is defined.
    - AEMO agreed that it is looking at renaming the LOR levels
- CS Energy advised the need of clear messaging regarding each LOR levels so that it is clear which LOR level is for decision making (regarding intervention) and which is for situational awareness.
    - AEMO agreed with this statement and highlighted the importance of transparency when developing the LOR levels and the management of those levels – AEMO will be seeking stakeholder input in Workshop #3
- Further questions relating to information being published, firstly from Shell relating to prices and whether there is any value to the market and another question from AEC relating to the form of congestion being published
    - AEMO responded that we are not planning to publish prices however publishing degree of congestion would be more useful for planning network outages e.g. the location of the deficit and what contingency is causing it – however this is still a

work in progress and AEMO will be seeking stakeholder input on information to be published in Workshop #5.

- AEMO added that if there were other topics stakeholders would like to discuss further to send an email to STPASAReplacement@aemo.com.au