

Minutes

MEETING: National Electricity Market Operations Committee (NEMOC)

DATE: Friday, 25 March 2022

TIME: 10:00AM – 12.00PM (Sydney/Melbourne Time)

ATTENDEES:

NAME	COMPANY
Tjaart van der Walt <i>(Chair)</i>	AEMO
Lenard Bayne <i>(Secretariat)</i>	AEMO
Ken Harper	AEMO
Teresa Smit	AEMO
Ben Skinner	Australian Energy Council
Christian Zuur	Clean Energy Council
Simon Emms	ElectraNet
Naresh David	Energy Australia/Australian Energy Council
Glenn Springall	Energy Queensland/DNSP Rep for ENA
Laurent Francisci	Neoen/Clean Energy Council
Gary Edwards	Powerlink QLD
Mike Paine	TasNetworks
Martin Cavanagh <i>(Proxy)</i>	AusNet Services

GUESTS:

NAME	COMPANY
Alexis Bowman <i>(Item 5.5)</i>	AEMO
Callan Masters <i>(Item 4.1 & 5.1)</i>	AEMO
Daniel Lavis <i>(Item 5.5)</i>	AEMO
Darren Spoor <i>(Item 5.2)</i>	AEMO
Luke Robinson <i>(Item 4.1)</i>	AEMO
Nilesh Modi <i>(Item 5.4)</i>	AEMO
Sujeewa Rajapakse <i>(Item 5.3)</i>	AEMO
Tim Daly <i>(Item 3.1)</i>	AEMO

APPOLOGIES:

NAME	COMPANY
Verity Watson	Energy Networks Australia
Michael Gatt	AEMO
Tim Lloyd	AusNet Services
Kasia Kulbacka	TransGrid

1. Welcome

Tjaart van der Walt

Tjaart van der Walt (Chair) welcomed members to the meeting and noted those apologies.

2. Previous meeting minutes and actions

Previous meeting minutes were accepted with no changes made. NEMOC members approved 10 December 2021 meeting minutes to be published on [AEMO's website](#). Actions were updated accordingly, and amendments made.

3. Presentation

3.1. AEMO Cyber Security Update

Tim Daly

Tim Daly provided a cyber security update to members. A copy of his presentation will be circulated to members as part of these meeting minutes.

4. Discussion

4.1. NEM Reviewable Incidents

Callan Masters

Callan Masters provided a summary of the Reviewable Incident Report as per NER 4.8.15. A total of 17 reviewable incidents are currently being drafted with a further 11 reports published on [AEMO's website](#).

Mike Paine raised the recent incident where a loss of ICCP links between Tasmania and the mainland. TasNetworks will present on this incident at the next PSSWG meeting in May.

5. Working Group Updates

5.1. NEM Emergency Communications Working Group (NEMEC WG)

Callan Masters

Callan Masters provided an overview of the NEMEC WG meeting which was held on 11 February 2022.

Discussion and agreements from this meeting are described below.

- TNSPs have shared details of their existing Operational Telephony networks (OTNs) with one another.
- The NEMEC WG members agreed that the final preferred emergency communications option(s) may include a combination of technologies.
- There were extensive discussions on hardening/extending existing OTNs to meet the requirements and the pros/cons associated with this approach.
- Viable options have been identified and discussed by the group, with the three options below being explored in more detail:
 - High frequency radio option
 - Fixed installation/improved satellite (SAT) phone options
 - OTN hardening and integration between regions
- High level costs for a high frequency radio option have been received by the group and will be compared against the other options outlined above.

The NEMEC WG members agreed that one or two System Restart Ancillary Service (SRAS) providers should join the NEMEC WG.

5.2. Power System Security Working Group (PSSWG)

Darren Spoor

Darren Spoor provided an overview of the PSSWG meeting which was held on 11 February 2022.

Review of Significant System Events:

- The PSSWG members reviewed the events surrounding the Gordon busbar trip with a focus on the protection mechanism.
- NT Power and Water presented on some of the emerging system security risks arising from the connections of renewables in a weak power system.

Review of the Reclassification Framework:

- The PSSWG members finalised the review of the reclassification framework and included the consideration of economic considerations in each of the reclassification assessments. It was noted that a further review of the reclassification framework will be conducted to incorporate the recent indistinct events rule change.

Protection Scheme Outages:

- The PSSWG members reviewed the procedures for managing a loss of protection. It was agreed that the following provisions were to be included:
 - *If the in-service protection on a transmission element or generating unit does not comply with the NER Chapter 5 protection systems and fault clearance times, the plant will be removed from service as soon as possible and in any case within 30 minutes unless the action would threaten the safety of any person or cause material damage.*
 - *If the NSP determines they will utilise back up protection to protect a transmission element, the NSP must confirm the NER 5.1a.8 fault clearance times are met AND they must clearly indicate what multiple contingencies are now reasonably possible.*

Local Oscillatory Stability and System Security:

- The PSSWG members confirmed the requirement for planning thresholds for oscillatory stability and again noted that the system security thresholds should not be defined at this stage.

The next PSSWG meeting is scheduled for 13 May 2022.

5.3. Operations Planning Working Group (OPWG)

Sujeewa Rajapakse

Sujeewa Rajapakse provided an overview of the OPWG meeting which was held on 1 March 2022.

The under-frequency load shedding is progressing well with NEM intact and separation studies now finalised with a draft report underway.

AEMO are in their final stages of the implementation of over-frequency generator settings and completion expected by June/July 2022.

The OPWG briefly discussed operation of the power system during summer 2021/22 and concluded that there were no major issues, partly due to mild summer conditions. It was noted that the flexibility

of the 2021/22 Summer Network Outage Planning Guidelines allowed some TNSPs to plan transmission network outages during the summer period.

A draft statistics of planned network outages was discussed at the previous OPWG which was based on an improved methodology agreed by NEMOC. OPWG members provided their final comments on the statistics, with participants seeking greater transparency of the outage scheduling process. AEMO encouraged TNSPs to submit network outages for Autumn 2022 with adequate lead time.

OPWG will commence a review of the transmission equipment rating advice process. This review is intended to address immediate issues as well as develop requirements for a more efficient long-term processes. Improvements to the rating advice process used in the WEM will also be included in this review scope. AEMO will commence stakeholder engagement with TNSPs over the coming weeks to identify where improvements are required.

Sujeewa Rajapakse advised that the following emerging operational issues were discussed and will establish key topics for discussion at their future meetings over the course of 2022.

Operation of semi-scheduled generation

- The OPWG discussed power system security issues caused by large increases of semi-scheduled generation. In particular, dispatch intervals immediately following dispatch intervals with semi-scheduled cap applied. Several initiatives to manage this was presented with further discussions to continue at the next meeting.

Increasing distributed solar PV

- Increasing levels of distributed PV impacts outage planning in some NEM regions. This topic will be discussed at the next OPWG meeting.

Operational training for new engineers

- The OPWG briefly discussed the challenge of providing operational experience to engineering professionals joining power system operations. AEMO has developed a module based operational training plan for this purpose and this plan will be presented at the next OPWG meeting.

It was noted that the AEMO will look at ways to provide greater transparency relating to publishing statistical information relating to network outages. In addition, a presentation on Statistics of Network Outage Submission and Desired Performance will be presented at the NEMOC/EJPC Workshop (25/03).

The next OPWG meeting will be held on 31 May 2022.

5.4. Power System Modelling Reference Group (PSMRG)

Nilesh Modi

Nilesh Modi provided an overview of the PSMRG meeting which was held on 11 February 2022.

- AEMO released an internal and an external version of PSCAD v5. AEMO is happy to provide training, material and automation scripts to NSPs to support use of PSCAD v5. AEMO conducted an industry session to provide an update on the transition to v5. The session was attended by approx. 100 attendees and AEMO received positive feedback. Powerlink has started using PSCAD v5 and noticed an improved performance over V4.

- AEMO presented on DER and composite load model development in pss/e. The Beta version will be released to NSPs soon for their review and comments. There has been some preliminary work carried out which shows significant impact of DER and load modelling on existing limit advice. The PSCAD DER and composite load models are planned to be completed by end of the 2022.
- PSMRG members agree to review Power System Model Guidelines (PSMG) that was published in 2018. NSP's were requested to update the issue register. AEMO will discuss internally the options to update the PSMG.
- It was noted that other than one region, migration of small-signal stability models to SSAT is progressing well. Migration to SSAT from Mudpack is a critical task and support from TNSPs in migrating their models is critically needed to complete the phase 1 of this task by July 2022. Phase 2 of this model will commence after the 1st of July 2022.
- PSMRG discussed issues associated with acquiring/developing PSCAD model of legacy plants. It was identified that there was no clear pathway in the Generator Performance Standards (GPS) and the Power System Model Guideline (PSMG) of these types of issues. PSMRG members discussed the issue and proposed to include key control loops while developing PSCAD model of legacy plants. All applications where an additional plant is being connected behind an existing connection point of the legacy plant, should be considered on a case-by-case basis.

Christian Zuur raised the question on what the next steps or indicative direction would be for acquiring/developing PSCAD model of legacy plants? Nilesh Modi advised that the next steps have been captured in the PSMRG minutes and that all NSPs are aware of the criteria that they should be applying in terms of formalising this migration. In addition, any changes to the PSMG model guideline will need to be updated following the consultation process unless it is an administrative change. It was noted that discussions internally with AEMO's National Connections team are taking place with regards to progressing this task further to enable a consistent approach across NSPs and industries.

5.5. Operations Training Working Group (OTWG)

Daniel Lavis & Alexis Bowman

Daniel Lavis provided a presentation on activities to date regarding the National Training Framework (NTF) and seek endorsement by NEMOC for the next steps of development.

Key points raised regarding this presentation are outlined below.

- Feedback collected from NTF Steering Committee members on 1 March 2022.
- Draft Report being finalised by AEMO, in readiness for publication.
- Continued feedback sought from broader industry.
- NTF will remain dynamic, informed by industry, with governance performed by AEMO and Steering Committee on behalf of industry.

Based on the feedback from the OTWG members and the Steering Committee for the NTF, the report has been adjusted and a final review by AEMO is underway before approving it as final for this initial phase of work.

To date, the Steering Committee has provided their endorsement for further development. Currently, the scope for the Steering Committee is focused on power system operator requirements however, it is

anticipated that this scope may broaden to support the needs of offline operations staff. Endorsement was received from the Steering Committee to move forward with an agile staged approach for development aiming to address the increasingly advanced subjects as this program of work progresses. Continuation of these deliverables for immediate and advanced streams will be subject to industry feedback and direction from the Steering Committee.

The Steering Committee is intended to perform the following.

- Setting the criteria for the quality standards and delivery methods.
- Assisting in further development of the framework, including providing the detail necessary for the modules to be developed to the level required and with a consistent approach.
- Providing the forum to maintain and adjust the content and quality.
- Provide the governance for the NTF on behalf of industry.

It was noted that membership of the Steering Committee doesn't include all those that were interviewed during the consultation process however, welcomed NEMOC members and/or their organisations to join the steering committee.

AEMO understands that a review of the transmission distribution and generation training packages has been undertaken. These diploma and advanced diplomas and their associated units of competency are nationally accredited, and require pre requisite knowledge. The report detailed that analysis was undertaken around the existing content and the prerequisite knowledge gaps and deliverables that the framework sets to achieve.

The framework and what it outlines further compliments and provides an update to the ESI training packages and in addition the framework will also assist by informing the industry Skills Councils and build on the non-accredited learning and steering the training needs around emerging technological practices.

It was noted that the Energy Networks Australia (ENA) Asset Management Committee (AMC), who are responsible for providing ongoing advice to the ENA members on issues related to Energy Network Asset Management, have reviewed the draft report and have provided their strong support on the direction of this work. Currently ENA have received no negative feedback on the report and have expressed a desire to keep the strong collaboration between AEMO and their respective control room operators.

As endorsed by the Steering Committee, AEMO will seek suitable providers Registered Training Organisations (RTOs) for development and delivery of the modules identified in the Fundamentals Stream of the NTF, as a pilot project via an expression of interest process. In addition, the Steering Committee will define the evaluation criteria for the RTO'S in addition to undertaking further work to scope the content.

The next steps are outlined below.

- In collaborations with the Steering Committee, AEMO will initiate the EOI process.
- Seek suitable RTO providers for the pilot.
- Advise reasonable timeframes for the process and approval of selected RTOs.

- Consult with Steering Committee around future RTO engagement.
- Develop draft timing for full delivery of NTF.

6. General Business

It was noted that Tjaart van der Walt will provide a presentation to NEMOC members at an upcoming meeting regarding AEMO's Operations Technology Roadmap program of work. This roadmap will look at Operations technology improvements that would be required to manage the power system of the future. Specifically this roadmap will look at the next three years to 2025 and then to 2030.

Tjaart van der Walt welcomed new member Laurent Francisci from Neoen. Laurent Francisci provided a brief introduction and advised that he will be representing the Clean Energy Council at NEMOC.

Mike Paine advised that this was his last attendance at NEMOC as he will be undertaking a new role within TasNetworks Digital division. A replacement representative for TasNetworks will be advised to the NEMOC secretariat.

Christian Zuur recommended a future discussion item with regards to representation of the renewables sector. The chair recommended a review of the current NEMOC Terms of Reference and put this forward for discussion at a NEMOC meeting by the end of this current calendar year. Glenn Springall raised the question to members regarding how NEMOC could collaborate better with DNSP in particular the systems framework and broader system security. This will be included in the discussion when reviewing the ToR.

It was noted that the NEMOC members would meet virtually at the next meeting scheduled in June with a view to meet face to face in September. A decision to meet F2F in September will be made at the June meeting.

Next NEMOC Meeting & Workshop

NEMOC Meeting #28	17 June 2022
NEMOC & EJPC Workshop #6	16 September 2022