Shell ENERGY

23 September 2021

Tom Meares
Australian Energy Market Commission
GPO Box 2603
Sydney NSW 2000

Dear Mr Meares

RE: Updating Short Term Projected Assessment of System Adequacy rule change

Shell Energy Australia Pty Ltd (Shell Energy) welcomes the opportunity to respond to the Australian Energy Market Commission's (AEMC) consultation paper on the Updating Short Term Projected Assessment of System Adequacy (STPASA) rule change.

About Shell Energy in Australia

Shell Energy is Australia's largest dedicated supplier of business electricity. We deliver business energy solutions and innovation across a portfolio of gas, electricity, environmental products and energy productivity for commercial and industrial customers. The second largest electricity provider to commercial and industrial businesses in Australia[1], we offer integrated solutions and market-leading[2] customer satisfaction, built on industry expertise and personalised relationships. We also operate 662 megawatts of gas-fired peaking power stations in Western Australia and Queensland, supporting the transition to renewables, and are currently developing the 120 megawatt Gangarri solar energy development in Queensland. Shell Energy Australia Pty Ltd and its subsidiaries trade as Shell Energy.

www.shellenergy.com.au

General comments

Shell Energy agrees with the broad premise that changes are needed to the STPASA process to deliver better outcomes for the market and consumers. There are elements of the Australian Energy Market Operator's (AEMO's) rule change proposal which we support as we consider they will deliver benefits to the market and to consumers over the long term, therefore meeting the National Electricity Objective (NEO). In particular, we strongly support AEMO's proposal to extend the publication of Dispatch Unit Identifier (DUID) level data to the STPASA, in the same way that DUID level data is available for the Medium Term PASA (MTPASA).

Despite our view that change to the STPASA is necessary, Shell Energy believes that implementing certain aspects of AEMO's rule change would fail to meet the NEO. In considering the full impacts of this rule change, we consider that there is a real risk that it would create artificial 'gaps' in reliability by ruling supply out of the STPASA process and creating scenarios where more Lack of Reserve (LOR) declarations can be made. In turn, this creates a scenario where the Reliability and Emergency Reserve Trader (RERT) can be called upon to address a perceived (but not actual) shortfall in supply. This would increase costs for consumers who would then

[1] By load, based on Shell Energy analysis of publicly available data

[2] Utility Market Intelligence (UMI) survey of large commercial and industrial electricity customers of major electricity retailers, including ERM Power (now known as Shell Energy) by independent research company NTF Group in 2011-2020.

foot the bill for RERT charges. It could also incentivise more supply or demand response to look towards RERT for payments instead of choosing to participate in the market. Even with the out-of-market provisions that apply to RERT, we do believe the incentive would remain. Consequently, while the proposed rule change would do little to promote reliability and security in the National Electricity Market (NEM), it would create a situation where it is likely to increase costs for consumers.

In general, we consider that the existing STPASA "rules based" process has no disbenefit to market participants (and consumers) and as such any change must need to demonstrate marked and meaningful benefits when compared to the status quo. The current rules-based framework delivers the necessary strong governance and transparency that must be a feature of any process that may lead to market intervention. We do not see many benefits stemming from AEMO's proposed rule change, apart from a few select concepts.

The submission that follows outlines Shell Energy's response to the AEMC's consultation paper as well as our proposed approach to amending the STPASA which we contend would deliver long-term benefits to the market and consumers with respect to price and reliability of the National Electricity Market (NEM). In reading this submission, comments referring to the STPASA apply equally to what AEMO refers to as the Pre-Dispatch PASA (PDPASA) with regards to the objective of undertaking a reliability assessment during the defined Pre-dispatch period,[3] including such reference to subclause 3.14.4(f).

Shell Energy does not support AEMO's proposed change to combine what AEMO refers to as the PDPASA and STPASA and considers that pre-dispatch and the STPASA should continue to be supplied separately.

Prescription of the STPASA

To some extent, Shell Energy agrees with AEMO's assertion that the Rules regarding the STPASA are prescriptive on AEMO. Yet, there is good reason for the NER to be prescriptive in order to provide certainty to the market of the process that will be followed in developing the STPASA. This provides an element of stability to the market that the forecasts are prepared in a similar fashion from week-to-week, year-to-year.

Shell Energy is concerned that in shifting to a less prescriptive STPASA framework, AEMO will become the 'gatekeeper' for the STPASA – setting the rules and processes to meet its needs and objectives rather than those of the broader market. We recognise that this is not surprising given that AEMO, market participants and consumers have very different drivers when it comes to reliability in particular. We have observed that AEMO appears to view reliability as a major risk and wants to avoid load-shedding, potentially at all costs. A risk-averse process that tries to safeguard against reliability outages under any network or market condition makes sense from this perspective. However, market participants have to manage the financial risks of this approach, and consumers bear the costs regardless of the outcome: either through higher prices or loss of supply. Giving AEMO more control over how the STPASA process therefore runs the risk of seeing AEMO's 'reliability at all costs' approach taking hold, leaving consumers to foot the bill. A balanced approach is necessary.

These risks are heightened by AEMO's request that for their proposed framework, it may undertake only a single-stage rules consultation procedure. We consider that this would provide AEMO with an unreasonable amount of discretion to set the parameters of the STPASA as it sees fit rather than as part of a genuine consultation process, taking into account all viewpoints. We also note that participants in AEMO's Technical Working Group on the STPASA did not support AEMO's proposal to remove prescription from the Rules.

On a related note, Shell Energy does not support AEMO's proposal to introduce a principles-based approach to the NER in relation to the STPASA. As highlight by the AEMC in the consultation paper:

[3] NER Clause 3.8.20

> "a principles-based approach is suitable when there are new products and services, constant innovation, market participants with significantly different characteristics or capabilities, or diverse participant preferences, and that a principles-based approach may be more accommodating and adaptive to market developments."[4]

We do not consider that the requirements of the STPASA meet this threshold. While AEMO may argue that the change in generation mix in the NEM meets the threshold of "significantly different characteristics or capabilities" we do not think that this alone justifies a switch to a principles-based approach. For variable renewable energy such as utility-scale wind or solar, AEMO already has its Unconstrained Intermittent Generation Forecast (UIGF) which can provide an input to STPASA. Distributed energy resources – largely solar PV – are already included in the regional demand forecasts. Wholesale demand response availability will also be added with its commencement on 24 October 2021.

Furthermore, the inputs that go into the STPASA – forecast loads, network constraints, notified network outages, the UIGF, unit availability, PASA availability and projected daily energy availability for energy constrained units or scheduled loads – do not change based on the technology mix in the system. It therefore does not seem to make sense to move these inputs out of the NER and into AEMO procedures. As such, we do not believe that a principles-based approach is justified.

STPASA inputs

AEMO proposes to redefine the STPASA inputs to include:

- forecast load and unscheduled generation which takes into account forecasting uncertainties
- forecast scheduled plant and wholesale demand response unit availability, including any constraints (i.e. energy limits etc.).This is at the DUID, or per unit level
- forecast constraints and notified network outages
- any other factors AEMO considers relevant and are consistent with ST PASA objective.

Shell Energy considers that this largely matches what already occurs and contains no substantive changes. Furthermore, Shell Energy opposes the inclusion of forecasting uncertainty within the STPASA given that it is already factored into the STPASA via the Reserve Level Declaration Guidelines (RLDG). AEMO's proposed approach risks a double-counting of uncertainty values, thereby creating the potential for very large reserve levels to be required to avoid the declaration of an LOR. Inclusion of uncertainty as proposed by AEMO in the STPASA inputs would be opaque and remove the transparency of the currently calculated forecasting uncertainty measure (FUM) which is published as part of the STPASA data.

We also reject the use of a principles-based approach to setting the STPASA inputs as flagged in the Consultation Paper. We consider that a prescriptive set of inputs is essential as it allows for a consistent and repeatable approach, giving market participants the confidence that each STPASA run is done on the same basis. To move to a principles-based approach would undermine this consistency and transparency and reduce the necessary governance of a process that could lead to unnecessary market intervention.

If anything, we consider that there is a gap in AEMO's STPASA inputs in that it does not factor in demand side participation (DSP) at this stage. Demand forecasts in the STPASA are currently prepared absent expected DSP as its inclusion is not a rules requirement. With the Wholesale Demand Response Mechanism (WDRM) coming online in October, AEMO will have information on some scheduled demand response, however there is a material volume of price-responsive load that is and will continue to be excluded from AEMO's STPASA

[4] AEMC, National Electricity Amendment (Updating Short Term PASA) Rule 2021, Consultation paper, 26 August 2021, p20.

reliability assessment. We recognise that it can be challenging to model the volume of DSP in the market at any moment, but that does not mean it should be routinely excluded. It should be noted that AEMO's long term forecasting group routinely monitors and reports on observed DSP with a conservative forecast[5] of DSP values published on a regional basis in the Electricity Statement of Opportunities (ESOO)[6] and used in other AEMO reliability forecasting assessments such as the Medium-Term PASA (MTPASA) and the Energy Adequacy Assessment Projection (EAAP).

While the proposed two-sided market framework set out in the Energy Security Board's post-2025 NEM Review provides another avenue for AEMO to gain some visibility of DSP in the market, we caution that the notional incentives provided may not be sufficient to drive participation, and as such would not want the AEMC or AEMO to rely solely on this to deliver improved DSP forecasts in the STPASA.

We recommend that DSP forecast be included as an input to be prepared by AEMO via an additional subclause requirement under rule 3.7.3(d) and based on the same values used in AEMO other reliability assessment processes.

Proposed changes to STPASA

One area where we agree with AEMO is that the firm 24-hour requirement for PASA availability should be changed. This requirement is contained within the definition of PASA availability. Shell Energy considers that this timeframe is no longer fit for purpose and that it can create artificial scarcity in the STPASA window. Instead, we argue that any plant that can be made available within 120 hours' notice should be classified as PASA available based on a notice period as set out in the participant's STPASA submission.

There are good reasons why a generator may not be available with 24 hours' notice but could be made available in a slightly longer time frame. This could be down to accessing fuel, staffing issues or nearing a return to service date. In all cases, we do not see that there is a rational reason to exclude generation from the STPASA that could be available with 24 and 120 hours from the time it is available. By that we mean that a generator that could be made available to the market within 36 hours should appear and be included in STPASA reliability assessment at the 36-hour mark and beyond. Excluding such generation from the STPASA artificially lowers the reliability outlook in the STPASA, increasing the likelihood of LOR declarations or RERT pre-activation and/or dispatch.

Shell Energy strongly disagrees with AEMO's proposal that the recall period be defined in the Reliability Standard Implementation Guidelines (RSIG). We understand that AEMO wishes to have a range of timeframes that would apply to different technologies. While this may make sense to AEMO, it could create inconsistent outcomes where one form of generation is PASA available with, for example 24 hours' notice and another generation technology is not PASA available with 12 hours' notice. A technology neutral approach based on a time period submitted by the responsible participant in their STPASA submission would be far more preferable. As noted above, we consider that allowing an extended timeframe to 120 hours is a more appropriate response and that this should be prescribed in the NER.

Shell Energy also recommends that changes be made to require AEMO to use PASA availability as well as maximum availability is the ST PASA reliability assessment. At present only maximum available capacity is used. Given the differences between the two, AEMO's approach limits the amount of capacity used to assess reliability in the STPASA. Generators regularly bid as unavailable (where maximum availability is zero) but are PASA available as they could be operational within a specified timeframe as set out in their STPASA submission. In practice, AEMO's approach means that the capability of such generators are excluded from ST PASA's

[5] AEMO uses the 50th percentile value of historically observed DSP at various price levels

[6] AEMO, 2021 Electricity Statement of Opportunities, Table 4, p29.

reliability assessment. Again, AEMO's approach creates artificial shortages in generator availability, creating a tighter supply-demand balance than would otherwise be the case.

On the question of whether the Rules should continue to require AEMO to publish STPASA at least daily, we note that AEMO currently publishes the STPASA every two hours. We fully support AEMO's current approach and would not wish to see a return to less frequent publication. As such, we recommend that the Rule be changed to require the STPASA to be published at least every two hours in keeping with AEMO's existing practice.

DUID data

We agree with the proposal to publish DUID level data under the STPASA. As we made clear in our rule change proposal on improving transparency of the Medium Term PASA (MTPASA), publishing DUID level data can remove an information asymmetry and allow for more efficient outcomes on the wholesale spot and contracts markets. Shell Energy considers that these benefits would apply to extending the publication of DUID level data to the STPASA as well.

The AEMC questions whether there could be risks to competition as a result of publishing DUID level availability data. While we acknowledge that there are perceptions that this could reveal commercial information, there is now more than 12 months' experience in publishing this data from the MTPASA. By this point in time, it should be clear whether there truly are any risks to competition as a result of publishing DUID level availability. Shell Energy has observed no evidence of anti-competitive behaviour relating to the publication of DUID data as part of the MTPASA.

In considering the question, any anti-competitive gaming would be readily observable and in fact highlighted as it would generally manifest as a lowering of available capacity and the potential for increased market intervention. No participant wants increased market intervention by AEMO. In fact, no market intervention is the preferred outcome.

Assuming that there has been no impact to competition with the NEM as a result of the publication of DUID data in the MTPASA, then we consider there should be no impediment to extending this to the STPASA as well. Shell Energy sees that this change will deliver benefits to the wider market through improving the decision-making of smaller market participants with respect to the scheduling of outages. This should deliver benefits to the price, reliability and security of the NEM.

To further reduce the potential for such behaviour to manifest, we recommend an additional obligation where at the time of an STPASA submission, the market participant is required to lodge a submission reason. A reason need not be extensive, and in order to provide simplicity for both AEMO and Market Participants, we suggest that these reasons could be included in the NER as a short list or allow AEMO to set it out in its process document. We envisage that the following reasons are all that is necessary:

a) Planned Maintenance Outage

b) Planned Maintenance Outage Extension

c) Forced Outage (including any extension of an outage)

d) Short Term Reserve Outage

e) Long Term Reserve Outage

This would also facilitate improvements in data analysis by AEMO and participants with regards to the cause of a unit outage. This concept that was flagged by AEMO in its response to the Improving transparency and extending duration of MT PASA draft determination.[7]

Objective of the STPASA

Shell Energy disputes the claim that the STPASA does not have an objective at present and that one needs to be added as part of this rule change. Clause 3.7.1(b) of the National Electricity Rules (NER) states:

> "The PASA is a comprehensive program of information collection, analysis, and disclosure of medium term and short term power system security and reliability of supply prospects so that Registered Participants are properly informed to enable them to make decisions about supply, demand and outages of transmission networks in respect of periods up to 2 years in advance (or up to 3 years in advance, where specified)."[8]

The NER goes on to add that the analysis and assessment of the information provided to the PASA is to be used to publish information that will inform the market regarding forecasts of supply and demand. Further, clause 3.7.1(d) states that:

> "AEMO must use its reasonable endeavours to ensure that it publishes sufficient information to allow the market to operate effectively with a minimal amount of intervention by AEMO."[9]

While not explicitly framed as an objective, it is clear that the totality of these clauses within Rule 3.7.1 explains the objective of the PASA process as a whole. It therefore appears unclear to Shell Energy why any additional "objective" is needed. Notwithstanding this, we do agree with AEMO's proposal to remove the references to the reserve trading provisions in its proposed objective compared to the objective provided in AEMO's STPASA process description document. The fact that the reserve trading provisions are included in AEMO's process document would appear to run counter to clause 3.7.1(d) to publish "sufficient information to allow the market to operate effectively with a minimal amount of intervention by AEMO".

Shell Energy does not support the proposed set of information raised in section 5.1.7 that AEMO would be required to publish to reflect the proposed STPASA objective. We consider that the current publication of 10, 50 and 90 per cent load forecasts to be sufficient instead of the suggested load forecasts at a range of probability of exceedance levels taking into account forecasting uncertainty.

As flagged above, we do believe that publication and inclusion of demand side response, not just from wholesale demand response units, would be beneficial to the market as a whole.

Finally, it is unclear as to why AEMO would need to publish both low reserve conditions (LRCs) as well as LORs as a result of STPASA runs. The two are broadly similar, with LRCs forming part of the MTPASA process and LORs already published when a STPASA reliability shortfall is identified. Shell Energy sees this as an unnecessary duplication.

The case for change

We disagree with AEMO's view that the current NER are not understandable and have unnecessary prescription requirements. From a participant's perspective, the NER requirements are relatively easy to understand and set out AEMO's obligations in a comprehensive manner and provide a strong governance

---

[7] AEMO, *AEMO submission to the draft rule determination – improving Transparency and extending duration of MT PASA* (ERC 0270).

[8] Clause 3.7.1(b) of the NER

[9] Clause 3.7.1(d) of the NER

framework for AEMO's short-term reliability assessment process. We agree that the clauses in the NER relating to the STPASA may not be "flexible" from an AEMO perspective, this is partially due to AEMO's interpretation and AEMO's own inflexibility in how it believes the ST PASA process should be complied with.

In addition, we reject AEMO's view that the current arrangements in the NER limit its flexibility. In our view, AEMO's desire to introduce greater flexibility is to provide itself with more flexibility to undertake modelling in a manner it sees fit. While some consultation with stakeholders may occur, under an AEMO rules consultation process it is under no obligation to consider any points raised by market participants. From a good governance perspective the requirements for the STPASA should be clearly set out in the NER and subject to the rule change consultation process.

We therefore strongly reject the notion that there is an ongoing need for flexibility in relation to the STPASA and that moving requirements to AEMO procedures is preferable to keeping them in the NER. The Reserve Level Declaration Guidelines (RLDG) set out in Clause 4.8.4A was established to provide AEMO flexibility in determining the required reserve levels. In our view this is a sufficient degree of flexibility for AEMO with regards to the ST PASA. The STPASA should remain a rigorous and well-defined process to set out expected demand, forecast supply, the reserve requirements, and whether or not there is a shortfall.

We dispute AEMC's interpretation of the work undertaken on the STPASA replacement process described in section 2.3 of the consultation paper. While AEMO might have concluded that the consultants' work showed that the existing STPASA system would not be able to satisfy the NEM's future requirements, that assessment ignores other aspects of the review. In our reading, it is the static regional design of the STPASA and the inability of the model to share reserves between regions and adapt for outages of major intra-regional network infrastructure that were the primary issues with the current STPASA system.

In discussing the limitations of the existing STPASA system, AEMC includes discussion from AEMO's STPASA replacement project documentation. AEMO's assessment argues that the existing system is unable to incorporate improvements in the modelling of intra-regional network issues, sharing of reserves across different regions and the allocation of energy-limited resources

The primary issue with intra-regional network issues is with regards to intra-regional network elements that are close to the regional boundary points where network failure results in load only being able to be supplied via an interconnector. This issue could be fixed via use of a flexible regional boundary facility or modelling on an electrical subregion basis.

AEMO also indicates that the new STPASA system being considered will include a full network model allowing for reliability forecast at a nodal level. This is a significant change from the current regionally based reliability assessment. The use of individual nodes raises a significant question as to how regional based LORs can be calculated and declared if needed and how a regional reserve requirement would be translated to nodal reserve requirements. Shell Energy envisions that a nodal-based STPASA could lead to AEMO declaring LORs based on a small volume demand node which then leads to unwarranted market invention. In considering this rule change, we suggest that the AEMC bear in mind how any changes based on the current design could have different consequences under a different STPASA model and the impact of such a change on costs to consumers who may derive little benefit. We note that the original objective for a more granular model as discussed at the AEMO STPASA TWG was to allow AEMO to better dispatch RERT contracts when network congestion could be an issue.

Finally, Shell Energy does not support AEMO's proposal to combine the current pre-dispatch and STPASA and require the revised STPASA to be published over seven days from real-time. Instead, after considering the functions and information provided by each data source, we consider that both the pre-dispatch and STPASA must remain separately published. This would retain the current pre-dispatch and STPASA publication length and would allow participants to avoid having to change their systems to factor in the changes compared to the existing pre-dispatch and ST PASA timeframes.

Definition changes

Shell Energy largely does not agree with the proposed changes to definitions for the STPASA. For energy constraints, the proposed definition includes the term "in a specified period". We do not consider that this is specific enough. We would likely support a changed definition to energy constraint if it referred to a Trading Day, e.g. "a limitation on the capability of a scheduled generating unit or scheduled load to produce or consume energy during a Trading Day at the level that would occur if the limitations were removed".

Further, we do not support AEMO's request to delete the reference to ambient temperature conditions in the manner described in the procedure [prepared under clause 3.7.3(j). We consider that this again raises the risk of AEMO being able to dial up concerns about reliability by specifying higher temperature limits at which some plant may be derated. This could result in artificial reliability shortages that lead to higher costs for consumers owing to possible dispatch of RERT or through other market interventions.

As noted previously, we do support a change to the reference to "24 hours' notice" in the definition of PASA availability to "120 hours".

Conclusion

Shell Energy agrees that changes to the STPASA are justified in some areas. The main areas where we support changes is around the publication of DUID data, extending the 24-hour recall time and requiring AEMO to use PASA availability in its reliability forecast instead of just maximum available capacity. However, we are concerned by AEMO's proposal to move to a principles-based approach which would provide it with more discretion to set the parameters of STPASA in order to meet its own objectives. Our main issue with this approach is that AEMO, market participants and consumers have different incentives and face different consequences if STPASA forecasts are inaccurate or if load-shedding occurs. AEMO faces a political and reputational risk, whereas market participants and customers in particular face the physical and financial risks associated with load-shedding or paying for reserve services like the RERT. Providing AEMO with more tools to manage its risks, creates a scenario where consumers may end up paying for a higher degree of reliability than either the reliability standard (0.002 per cent unserved energy) or interim reliability measure (0.0006 per cent unserved energy) despite no indications that there is a willingness to pay the higher costs associated with higher reliability standards.

We consider that our proposed amendments to the STPASA would better balance the risks and create more accurate and transparent forecasts. This should deliver improved outcomes for consumers with respect to the price, reliability and security of the NEM over the long term.

Yours sincerely

[signed]

Ben Pryor
Regulatory Affairs Policy Adviser
03 9214 9316 – ben.pryor@shellenergy.com.au