Shell ENERGY

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David Scott
Australian Energy Market Operator
Level 22, 530 Collins St
Melbourne VIC 3000

Dear Mr Scott

RE: Project Energy Connect Market Integration Paper

Shell Energy Australia Pty Ltd (Shell Energy) welcomes the opportunity to respond to the Australian Energy Market Operator's (AEMO) Project Energy Connect (PEC) Market Integration Directions Paper.

About Shell Energy in Australia

Shell Energy is Shell's renewables and energy solutions business in Australia, helping its customers to decarbonise and reduce their environmental footprint.

Shell Energy delivers business energy solutions and innovation across a portfolio of electricity, gas, environmental products and energy productivity for commercial and industrial customers, while our residential energy retailing business Powershop, acquired in 2022, serves households and small business customers in Australia.

As the second largest electricity provider to commercial and industrial businesses in Australia[1], Shell Energy offers integrated solutions and market-leading[2] customer satisfaction, built on industry expertise and personalised relationships. The company's generation assets include 662 megawatts of gas-fired peaking power stations in Western Australia and Queensland, supporting the transition to renewables, and the 120 megawatt Gangarri solar energy development in Queensland.

Shell Energy Australia Pty Ltd and its subsidiaries trade as Shell Energy, while Powershop Australia Pty Ltd trades as Powershop. Further information about Shell Energy and our operations can be found on our website here.

General comments

Shell Energy has a keen interest in the integration of PEC into the National Electricity Market (NEM). The decision of how to incorporate PEC into the NEM will have impacts both directly on consumers through changes to spot price outcomes, and indirectly through changes to wholesale market risk premiums, transmission use of system (TUOS) charges and to the value of Settlements Residue Auction (SRA) units which retailers use to hedge load between regions. There are a range of decisions that AEMO must make with respect to integrating PEC into the NEM, which in turn require a further set of decisions. Shell Energy acknowledges that this is a complex area of reform but one that must be implemented efficiently, taking into account the best interests of consumers.

[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 2011-2021.

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We are concerned that AEMO has failed to fully consider all the costs and risks that will be passed through to consumers if AEMO's preferred approach is implemented. Shell Energy recommends that AEMO take the following steps to provide a better level of detail to stakeholders to ensure that PEC is integrated in the most efficient and least distortionary way possible:

- Commission quantitative modelling to compare the dispatch and settlement outcomes for the alternative Victorian micro-slice and loop flow models in terms of impacts to consumers;
- Delay a final decision on how to implement PEC Stage 2 until after the market can observe the initial results of the micro-slice model that will be used for implementing stage 1 of PEC; and
- Should ultimately a network loop flow model be implemented, that negative settlement residues continue to be recovered from TNSPs rather than SRA unit holders.

Loop flow vs micro-slice

In the first instance, AEMO proposes PEC Stage 1 will be implemented in the NEM as a micro-slice through the Victorian region around Buronga adding to the existing SRA units associated with the Victoria (Vic) to South Australia (SA) and Victoria to New South Wales (NSW) bi-directional interconnectors. At a later date, this would be changed, and PEC would then be integrated using a network loop flow model. AEMO engaged ACIL Allen to conduct modelling only on how the loop flow model will impact dispatch, settlements and inter-regional settlement residues (IRSR). Shell Energy has several concerns with AEMO's decision in this regard. We believe it is asymmetric to commission modelling on one potential option without comparing the results to the other possible option.

We recognise that AEMO argues that the micro-slice model is not suitable for the integration of PEC as in AEMO's view "it would not be a proper representation of the physical network and would not solve the problem of increased negative residues and uncertainty associated with transmission loop flows."[3] However, balanced analysis supporting this assertion against alternatives has not occurred. AEMO commissioned modelling to assess the impacts of the loop flow model, but to date has not provided any equivalent quantitative analysis for the micro-slice model.

Shell Energy considers that in this case AEMO's view may be concentrated on seeking to achieve a "first best" outcome but failing to consider in their analysis and reasoning the market imperfections, distortions and externalities that exist in the NEM. Most notably, while the NEM is nodally dispatched, it is regionally settled. In the presence of intra-regional constraints, such as will exist at each end of PEC, efficient dispatch may not be achieved, and AEMO's dispatch efficiency argument no longer holds true. In trying to achieve what is a "first best" outcome, AEMO may introduce what are arguably third or fourth best outcomes.

Shell Energy does not assert that the micro-slice model is definitively 'better' than the loop flow model. However, it may result in achievement of more efficient outcomes when all factors are considered. Rather, we call on AEMO to conduct modelling of the micro-slice model so that the industry can have a clearer picture of the possible impacts of both models. This modelling must consider IRSR outcomes across all the flow path components of the Vic to SA and Vic to NSW bi-directional interconnectors, as opposed to only concentrating on the flow path components of PEC in isolation. Without modelling results comparing both the micro-slice and loop flow models, there is too much uncertainty to argue that one approach is clearly more appropriate.

The NEM has already operated under a loop flow model during the time in which the Snowy region existed. As is being considered in this paper, the accumulation of negative settlement residues and the distortionary impact on pricing and dispatch as a result of the loop flow between three regions, was one of the issues that led to the rule

[3] AEMO, Project Energy Connect Market Integration Directions Paper, p19.

changes that eventually abolished the Snowy region. The abolition of the Snowy Region resulted in the inclusion in the NEM dispatch engine of what was a significantly sized loop flow path, exceeding the size of PEC, as effectively a slice of the Vic to NSW bi-directional flow paths without compromising secure dispatch outcomes. Shell Energy therefore queries the need to reintroduce the known deficiencies of a network loop flow model into the NEM when there is a potential alternative approach in the form of implementing a micro-slice model.

A clear advantage of retaining PEC implementation as a micro-slice through the Victorian region is that no changes to the National Electricity Rules (NER) or AEMO's processes for negative reside management would be required. Notwithstanding, we do note that improvements could be made to AEMO's current management of negative IRSR to remove the incidence of intra-trading day cycling in the negative residue management process.

AEMO has also raised concerns regarding the potential for a Chapter 2A regional boundary application to implement the micro-slice option. It is unclear to Shell Energy whether a full Chapter 2A process would be required noting that PEC Stage 1 is to be implemented as the Victorian micro-slice option. We also note precedent already exist in the NEM for the nominal location of the no-load Buronga switchyard assets in the Victorian region. Both the Guthega Power Station and the Jindabyne Pumping Station are physically located within the geographical boundaries of the NSW region, and both the power station and the pumping station have the same connection point being the 132 kV Guthega switchyard. However, although output from the Guthega Power Station is referenced to the NSW region, load consumed at the Jindabyne pumps is referenced to the Victorian region. We support this pragmatic approach behind the different regional referencing of these two energy systems.

A micro-slice natural experiment

Shell Energy queries the need for a decision on how to integrate PEC with the market at this stage given that the full implementation of PEC will take several years. Indeed, the first stage of PEC will be integrated as a micro-slice model. The advantage of delaying a decision is that it would allow market participants and AEMO to analyse the data observed during the first stage of the PEC commissioning. This kind of natural experiment could better inform a long-term approach.

Shell Energy's analysis suggests it is unlikely that, due to the presence of significant and enduring intra-regional constraints, significant volumes of energy will flow across PEC until Humelink and the Southern Sydney 500 kV Ring transmission projects and augmentation of the SA 275 kV network between Tungkillo and Adelaide are completed. This means that even once the PEC project is fully commissioned, volumes of flow across PEC may be relatively small and not represent truly efficient dispatch outcomes. These smaller volumes mean that the impacts of whichever model is implemented, will be less than what will be observed once PEC is more fully capable of transferring energy between regions.

We therefore believe that there is no impeding requirement or urgency that necessitates a final integration of PEC into the NEM now. We believe it would be more preferable to take the time to properly assess more modelling results and the initial result of flows under the micro-slice model during stage 1 of PEC in order to properly evaluate the most appropriate approach for PEC in the future.

Inter-regional settlement residues

Shell Energy has concerns with how the AEMO's proposed approach to adopt a loop flow model will interact with the IRSRs. Based on the history of loop flows in the NEM and AEMO's proposed approach with regards to recovering negative IRSRs, we consider there is a substantial risk that adopting a loop flow model could lead to degrading the values of the IRSRs. Reducing the value of IRSRs would reduce the value of SRAs as a hedging tool. This has flow on impacts on the ability of retailers to hedge load across states and efficiently price retail offers. This change will also impact the price paid by parties at the IRSR unit auctions which are used by Transmission Network Service Providers (TNSP) to reduce transmission use of system (TUOS) pricing. We consider that a

reduced ability to hedge across states as well as the reduction in auction proceeds will have negative impacts on retail competition and prices for end users.

AEMO's paper discusses two main options for how to recover negative IRSR that will always arise from the loop flow model: deduct negative settlements from SRA unit holders or from consumers in the importing region via TNSPs.

We strongly oppose the option to recover negative settlement residues from SRA holders. We consider this approach would have significant impacts on contract and retail markets, and impinge on retailers' ability to hedge loads across states. It would make hedging loads across states far more challenging, leading to a less liquid contract market and less efficient pricing for retail customers. It would also lead to a significant devaluing of the SRA proceeds. In our view, this would have greater negative outcomes for customers, and therefore does not align to the national electricity objectives. It should also be noted that the risk of negative IRSRs would remain with the respective TNSP for any unsold settlement residue auction unit and the proposed SRA unit holder recovery model would likely increase the number of unsold units. Given this negative IRSR risk would ultimately return to TNSPs and customers regardless.

Instead, we recommend AEMO adopt their alternative model of recovering negative settlements from TNSPs. This aligns with the current approach for negative IRSR recovery and is far more logical given that TNSPs already receive the proceeds from the Settlements Residue Auctions. These proceeds are then used to reduce TUOS costs for consumers. We acknowledge that by deducting negative IRSRs from TNSPs, consumers will not receive the current level of TUOS cost reductions, but they would also not be exposed to the impacts of reduced contract market liquidity and inefficient pricing and SRA proceeds would remain higher than would be the case under the SRA unit holder recovery model. Recovering negative residues from SRA unit holders would likely lead to a significant fall in the value of SRA units, meaning lower auction proceeds for TNSPs in any case.

AEMO has proposed that for either the SRA unit holders or TNSP recovery model, that reallocation of positive residues to offset negative residues around the network loop be implemented. Shell Energy does not support such an amendment to the current framework as this amounts to a cross subsidy between consumers located in different regions. We consider that if AEMO's argument that implementing PEC as a network loop model promotes the most efficient dispatch and settlement outcomes is correct, and that negative IRSRs result from efficient dispatch which then benefits consumers in the importing region, then the costs of negative residues should be borne solely by the TNSP in the importing region.

Should AEMO proceed with this proposed cross subsidy or reallocation between positive and negative IRSR outcomes, then it should be clear in the NER that this reallocation applies only to the flow path components of PEC.

We acknowledge the concerns of TNSPs regarding an efficient mechanism for managing cashflows associated with funding negative IRSRs. We consider there are three options which could be introduced to assist TNSP management of cashflows.

1. Amend the current framework which adjusts TUOS prices based on an ex-ante calculation basis of forecast SRA proceeds adjusted for potential negative IRSR occurrence to an ex-post calculation model. The amended framework would make no allowance in TUOS pricing for forecast net SRA proceeds. The proceeds held in trust by AEMO would be used to fund weekly settlement negative IRSR outcomes with distribution of net funds, inclusive of any interest, at final settlement for each calendar quarter. In the event net negative IRSR accrued prior to the end of the quarter, these would be paid on a weekly settlement basis by the relevant TNSP as per the current framework.
2. TUOS pricing adjustments and SRA proceeds transfer to TNSPs would continue as per the current framework with negative IRSRs funded directly via the weekly settlement process as non-energy costs but as a separate line item to promote transparency.

3. As per 1 above but adjusted such that in the event net negative IRSR accrue prior to the end of the quarter these would be recovered in accordance with Option 2.

For the purposes of transparency of the costs of implementing PEC as a network loop model, Shell Energy suggests the second option would be the preferable option as both options 1 and 3 would be opaque as to the true cost of implementing PEC as a network loop model.

Even if negative residues are recovered from customers in the importing region rather than SRA unit holders, Shell Energy still considers that the loop flow model itself will diminish the value of SRA units, due to the likelihood of higher levels of negative IRSR occurrence than current and lower auction proceeds and unit returns than the current structure. Reduced auction revenue from SRAs reduces the returns to TNSPs which use the auction proceeds to reduce TUOS costs to end users. This is one of the consequences of the loop flow model where at least one of the legs of the loop will always have a negative IRSR outcome, and based on the ACIL modelling at least two of the legs having negative IRSRs for at least 40% of the time. This is one of the reasons Shell Energy advocates for a more cautious approach to the method for integrating PEC into the NEM.

We also consider that AEMO must provide specific clarity regarding the ability to surrender SRA units purchased at previous auctions under the SRA Agreement as a result of the outcomes from this consultation. We recommend a clear date be set following which SRA units may not be surrendered as a result of the outcomes from this consultation.

Conclusion

The integration of PEC into the NEM is a complex decision with potential impacts on a range of market features. Shell Energy considers that there is opportunity to gather far more data over the coming years which would inform better decision making for the long-term, rather than rushing through an approach which has undergone limited analysis. Given that stage 1 of PEC will be implemented using a micro-slice through Victoria model, we encourage AEMO to delay adopting a loop flow model until the results of stage 1 can be assessed. We also call on AEMO to commission modelling on the micro-slice model in order to compare it to ACIL Allen's modelling on the loop flow model which accompanied the release of the Directions Paper. Such modelling should be transparent and conducted cooperatively with interested stakeholders. We do not think it is possible to accept AEMO's assertion that a micro-slice model "would not solve the problem of increased negative residues and uncertainty associated with transmission loop flows" without evidence to support it. We also question AEMO's statements that the network loop model results in more efficient dispatch outcomes due to the known imperfections and distortions that exist in the NEM dispatch and settlements model.

Finally, if a loop flow model is to be introduced, we strongly reject the option to recover negative residues from SRA unit holders. We consider that this approach would significantly degrade the value of SRA units as a hedging tool. That would create flow on impacts for retailers' ability to hedge load across states and efficiently price retail offers. In turn this could negatively impact on retail competition and increase prices for end users. We acknowledge the risk to TNSP cashflows that may result from this, and our submission sets out three options which could be implemented to assist TNSPs regarding this.

For more detail on this submission, please contact Ben Pryor, Regulatory Affairs Policy Adviser (ben.pryor@shellenergy.com.au or 0437 305 547).

Yours sincerely

[signed]

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