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Submitted via email: info@esb.org.au

Alinta Energy Response to Capacity Mechanism Project – High Level Design Paper

Alinta Energy welcomes the opportunity to respond to the Energy Security Board's (ESB) High Level Design Paper on its proposed capacity mechanism.

Alinta Energy strongly supports the ESB's proposal to introduce a centralised capacity mechanism on the grounds that it will:

- Reduce the material risks associated with disorderly thermal exits[1];
- Incentivise new investments[2] to be built earlier than may have been the case in an energy-only market;
- Provide for the gap between the stable revenue needed to attract efficient entry (and the revenue required to maintain existing assets and their fuel supplies) and the revenue available from the energy-only market (i.e. finding the 'missing money');
- Provide governments and policy makers confidence that the NEM will deliver resource adequacy over the long term; and
- Bring the NEM into line with all major international energy markets that are facing the decarbonisation challenge and are operating capacity mechanisms, in addition to Western Australia's Reserve Capacity Mechanism (RCM) [3].

To ensure the NEM transitions in an orderly, least cost and efficient manner while delivering the maximum potential net benefit for consumers, the capacity mechanism must at its commencement:

- Allow participation for existing and new plant;
- Deliver a technology neutral approach, and;
- adopt a single national approach with no state-based derogations

Alinta Energy considers that the range of concerns raised to date in these areas can be appropriately addressed through specific market design features either already identified by the ESB or recommended by Alinta Energy in this submission.

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[2] By rewarding availability and contributing to maintenance costs thereby improving actual plant reliability.
[3] By alleviating some of the financial and commercial risks associated with planning, construction and operation.
[3] For insights into the RCM design and how the evolution of that design has enabled and continues to enable a smooth transition please refer to Attachment 2.

Open participation will deliver the widest benefits

Although some stakeholders are calling for the mechanism to focus on new zero emissions investments, the ESB has rightly identified that only through participation from all new and incumbent market participants will the best long term (and immediate) outcome for consumers be achieved.

Alinta Energy firmly supports the drive towards a clean energy economy[4] and recognises the need to rapidly transition to an energy system based on renewable energy including storage technologies. We are a major investor and developer of renewable assets with over 1,000MW of owned and contracted renewable energy generation within our portfolio. We are also actively investigating the development of new large-scale pumped hydro[5] and offshore wind[6] in the NEM. However, Alinta Energy is also acutely aware that the reliability and security of the grid must be upheld throughout the journey to a zero emissions grid. This objective, at least cost, can only be delivered through the utilisation of a range of new and existing technologies.

Only allowing new technologies in a capacity mechanism' would prioritise environmental targets above the mechanism's primary aim of maintaining energy security and affordability. Not acknowledging this tradeoff in the design, will likely render the mechanism unable to work effectively, therefore resulting in adverse outcomes for consumers. Alinta Energy supports the role of environmental objectives, however we believe they are appropriately delivered through other policies rather than absorbed into the mechanism's design.

The NEM exists to deliver the National Electricity Objective. As such, all NEM consumers should continue to have access to reliable, secure and affordable energy. In delivering this objective, there exists a clear, natural and supportive transitional role for incumbent generation, including thermal plant, to continue to provide firmed dispatchable and reliable energy over its economic life. There is also an ongoing role for existing generation to protect and stabilise the NEM (as it always has) until new technology can take over these essential system services.

If existing thermal plant is not included in the capacity mechanism design, then an additional support mechanism will be required to ensure sufficient coal and gas is maintained whilst we work to deliver the quantum increase in renewable energy and storage required to support the system in the way that thermal generation has to date.

A national approach is vital

Alinta Energy is deeply concerned about the fragmented opinions and restrictive decisions proposed by some jurisdictional governments. As an interconnected market, a capacity mechanism cannot work effectively and will introduce a range of material operating and investment risks if one or more jurisdiction/s implement specific exclusions.

A national approach, supported by all jurisdictions with no derogations, is needed to provide confidence to the market and a robust understanding of the final capacity mechanism operating design.

A well-designed mechanism can address concerns

Alinta Energy believes that any material stakeholder design concerns can be adequately addressed through specific design features. These should include specifics captured by the ESB's proposals for:

- Longer contract periods for new capacity providers of renewable energy and storage;

[4] Smart Energy & Sustainability - Alinta Energy and AE Sustainability Report FY20 (11).pdf
[5] https://www.ompshydro.com/
[6] https://www.spinifexoffshore.com.au/#/

- Different auction participation (eligibility) rules for new capacity;
- Performance obligations for all capacity providers, targeting a dual objective:
    - demonstrated year-round availability[7]; and
    - delivery of capacity during actual LOR events when it is most needed.
- A balanced penalty regime for contracted generators unable to meet these obligations; and
- Appropriate derating factors assigned to capacity providers on the basis of their contributions to reliability.

In addition to these design features Alinta Energy considers that there should be:

- Broader consideration around the need for stronger penalties to protect consumer interests where repeated non-compliance and/or underperformance is demonstrated;
- An annual technical assessment specifically targeted to re-evaluate the inclusion of fossil fuel generators in the mechanism[8] after an initial contract period; and
- A broad review process within three years from the commencement of the mechanism to assess the design, operation and interactions of the capacity mechanism, ensuring that it is functioning as intended and/or consider mechanism enhancements.

Finally, to ensure that the market delivers the investment signals needed to provide reliability in this critical period as the traditional generation fleet retires, and generator revenue adequacy is maintained, Alinta Energy recommends:

- A coordinated approach by policy makers and the Reliability Panel to assess the NEM's market settings and standards (MSS) periodically, to consider the interactions and appropriateness of each MSS against a capacity mechanism. This should be aligned with the broad capacity mechanism review; and
- Coordination and consistency across the ESB's other Post 2025 work program streams, particularly transmission access and essential system services, ensuring that the reforms work together in a way that minimises the regulatory burden on participants, the market regulator and the market operator.

For additional commentary of these core design features, including responses to the ESB's questions, please refer to Attachment 1.

Should you wish to discuss our views further, please contact Dan Mascarenhas on 0475 943 365 or at Dan.Mascarenhas@alintaenergy.com.au.

Yours Sincerely

Daniel McClelland
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Alinta Energy

[7] with limited exceptions, such as network constraints, unplanned outages or other force majeure events.
[8] Alinta Energy proposes capacity market reviews from 2029 - Alinta Energy

Attachment 1: Alinta Energy's detailed comments

1.1 Summary of Alinta Energy's position on the ESB's high-level recommendations:

Section	ESB proposal	Alinta Energy position
Participation	All capacity (both new and existing) rather than just new capacity should participate in the capacity mechanism.	**Support**
Forecasting demand	Forecasting and determination of the capacity requirement should be centralised.	**Support**
Procuring capacity and auction design	The ESB proposes procurement to be centralised, using competitive auctions.	**Support centralised procurement.** **Alinta Energy tentatively supports an auction approach, subject to addressing market concentration concerns and ensuring the zero times infinity[9] issue is addressed appropriately.**
Obligations	Availability year-round, with additional requirements to be available during actual lack of reserve events that may be triggered at any time	**Support with modifications** **The obligation should recognise that no generating facility is reasonably capable of achieving 100 per cent availability and it would not be in the long-term interests of consumers to include a premium to achieve that level of availability. Careful consideration of the interactions between planned works and obligations/penalties will be required during detailed design.**
Allocation of costs	AEMO could recover costs of capacity via retailers using actual demand (ex-post) during periods where the capacity performance obligation applies.	**Support, however, to protect consumers, all cost recovery should be justified through transparent reporting.**
Transmission capacity	Capacity providers located in one region would be eligible to sell capacity to meet reliability in another region (i.e., eligible for procurement).	**Support, noting strong links to proposed transmission access reform requires coordination.**

[9] The "zero times infinity" problem arises where small changes in the amount of available capacity relative to the target results in significant changes in price, potentially undermining the certainty that the mechanism aims to provide. For example, an auction that does not need to incentivise any additional capacity may clear at zero, while an auction that cannot attract sufficient capacity may not clear at all.

1.2 Participation

ESB Recommendation: All capacity (both new and existing) rather than just new capacity should participate in the capacity mechanism.

Alinta Energy supports the position that all new and existing generation should be able to participate in the capacity mechanism at its commencement. We agree that applying a neutral lens to participation and technology class will best achieve the ministerial design principles and enable the most cost-efficient outcome for consumers.

We note that a capacity mechanism that excludes any form of incumbency will not allow the market operator to meet annual capacity targets, putting reliability (and security) at an on-going risk. Unless incumbent generators are compensated by another mechanism, this exclusion would also place growing financial pressures on excluded capacity and may accelerate their market exit[10] whilst adding further complexity for all participants.

To enable the transition, the NEM requires generation that is both available (i.e. able to be used/called upon if required) and reliable (able to be relied on to provide the good or service when asked). Instead of limiting the role of existing assets, including coal and gas, their reliability could be examined through the proposed underperformance tests, in addition to an annual technical assessment. As a further point of assurance to policy makers and the capacity mechanism operator, all capacity providers could also be subject to availability assessments via an appropriately designed testing regime which balances the need to confirm availability with minimising the administrative burden and investor uncertainty.

Enabling all technologies and generation to participate will create a level playing field and result in a harmonised and less complex capacity mechanism. This will also avoid the likely energy market distortion that would come from excluded assets being required to recover all their costs from the energy market alone (which would likely require a higher Market Price Cap (MPC) for those excluded assets) or require an alternative form of support to a capacity mechanism.

1.3 Forecasting and the building blocks for a mechanism

ESB Recommendation: Forecasting and determination of the capacity requirement should be centralised.

Centralised forecasting

Alinta Energy supports a centralised forecasting and procurement approach in the capacity mechanism. Not only will this provide a clear and transparent mechanism for the market, it will also provide governments and consumers with confidence. The latter will be important to minimise the likelihood of further intervention by policy makers, which will improve overall investor confidence in the NEM.

AEMO are well qualified in their existing market operator role to undertake these new functions, mirroring similar roles it has (albeit with a different scope/function) on the NEM Electricity Statement of Opportunities (ESOO) and Settlement Residue Auction (SRA). Although some stakeholders have expressed concern that AEMO may be overly conservative in their forecasts, this can be adequately addressed through the design of transparent reporting and continuous-

[10] Noting that these facilities would need to recover a greater proportion of their costs in the energy spot market. This may also require differing MPCs for facilities that are and are not covered by a capacity mechanism. Multiple MPCs would significantly distort energy market outcomes.

improvement obligations.[11] Ensuring that the market operator is held to account in delivering its obligations will assist in keeping the mechanism cost-efficient.

Alinta Energy considers that, as with the current RRO[12], a model using decentralised forecasting would not give policy makers the requisite confidence that there will be investment in the right type and quantity of capacity across the NEM to maintain reliability because:

- Policy makers would not know how much load retailers have forecast, nor whether retailers have procured enough capacity to meet demand until after system stress periods.
- Retailers would potentially secure less capacity than policy makers would regard as being sufficient – dampening and delaying the investment signal for new capacity.
- There are many circumstantial reasons why retailers' forecasts could differ and not sum to an accurate NEM-wide forecast. This is because, unlike AEMO, retailers would not only be forecasting how much energy demand there will be in each region, but a range of volatile factors unique to their load, including their performance against competitors, and the behaviour of their customers.

<u>De-rating capacity</u>

Specific to the auction, and critical to the mechanism design, will be the function of capacity zones (i.e. NEM or region) and the de-rating methodology used to assign capacity certificates. Alinta Energy supports the ESB's approach to both attributes; namely a regionally-based capacity target and an appropriately designed de-rating methodology which accredits capacity providers based on a reasonable expectation of their output to a region during future system stress periods. The former will align with existing central dispatch functions and the ESOO assessment process, to help avoid shortfalls in a given region, noting that there are limits to how much a region can depend on its interconnections for reliability. A well-design, de-rating methodology (once eligibility has been assessed) will also help ensure the capacity procured can provide the capacity required in a given region, and that certificates do not overstate a provider's potential contribution to a region.

Alinta Energy recommends that thermal generation should be de-rated based on the output they can achieve during ambient conditions (temperatures) reasonably expected during at-risk periods. Alinta Energy also supports de-rating generators with poor performance, recognising stakeholder concerns around unreliable thermal generators receiving certificates regardless of their poor performance.

Alinta Energy recommends that the ESB consider a time-based, rather than ELCC[13]-based approach, to derating intermittent generators. Analysis of an ELCC de-rating method in the WEM showed that this approach can assign certificates based on as few as four observations, leading to significant over and under compensation to generators.[14] It also assumes that previous periods with high loss of load probability will reflect future periods, which may not be the case considering the potential for significant demand and supply side changes (e.g. new large scale intermittent generation, EVs and increasing distributed generation).

A time-based method can avoid these issues by being set based on AEMO's forecast of when future system stress periods will occur (using for example, the ESOO which accounts for weather factors in its assessment). Under this approach, intermittent generators would be derated based

[11] However, Alinta Energy notes that recent experience in the WEM shows that if anything, AEMO's forecasts have been understated, with demand frequently exceeding AEMO's POE10 forecasts in early 2022.

[12] Which is proposed for abolishment under this capacity mechanism proposal.

[13] Effective Load Carrying Capacity (ELCC)

[14] This occurred because the total loss of load expectation of the system tends to be driven by only a few extreme days, even across a sample period as large as 7 years.

on how they have historically performed during such periods, with discounts for their variance. Such a method has precedent in the PJM.[15]

Alinta Energy suggests that a time based method would also send a clear investment signal – compared to an ELCC method, and would be simpler for investors to discern when capacity is required and therefore what assets to invest in to maximise their contribution to reliability. Under an ELCC method, it is less clear what periods will drive derating in future, increasing risk and potentially dissuading investment in intermittent generation.

Irrespective of the capacity provider being assessed for derating, this assessment should be completed on a technology (and sub-technology basis where applicable, such as coal and storage etc.) within a NEM region. This will ensure that all like-for-like plant are treated in a neutral manner without bias or subjectivity.

1.4 Procuring capacity and auction design

ESB Recommendation: The ESB proposes procurement be centralised, using competitive auctions.

While Alinta Energy has previously advocated for an administered price regime[16], we tentatively support an auction approach, subject to addressing market concentration concerns and ensuring the zero times infinity[17] issue is addressed appropriately. With regard to the former, the ESB should specifically consider how to ensure dominant gentailers don't artificially lower or raise the price. This may be done through the removal of capacity from the auction process or by offering capacity at an artificially low price to the benefit of their retail arm. We suggest this could be addressed via an administratively set "offer floor" with any offers below this benchmark capacity floor subject to review of an independent regulator.

With respect to the auction design process, Alinta Energy broadly supports the proposal to introduce two products; one on price and the other on price and quantity. We understand the latter product would have a longer time period attached to it and therefore is likely targeted towards new generation. While this appears sensible, noting the increased risk associated with planning and constructing these investments, we are unclear how the ESB intends to assess 'quantity', especially for weather-dependent generation. Alinta Energy encourages the ESB to consider how this can be best addressed within the eligibility criteria to protect consumers from unreliability.

Alinta Energy also cautiously supports the ESB looking further into the role of retailers as procurers of capacity certificates. Empowering retailers will enable them to better control and manage hedging and wider portfolio strategies to minimise financial risk, as well as develop new innovative products. However, not all retailers will be able to take advantage of the opportunity provided should they be permitted to obtain certificates. This could have negative impact on retail competition and warrants further investigation. Similarly, to prevent market power mitigation concerns, consideration on quantity limitations may be appropriate on the largest vertically integrated market participants or similar, to ensure that a wide range of retailers and generation developers obtain value. One approach to address competition risks is to allow retailers and large C&I customers to bilaterally trade certificates between themselves. This

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[15] For the capacity value of wind farms, solar farms, and storage facilities like hydroelectric dams, flywheels, or batteries, the PJM calculates the capacity factor over the periods 6am to 9am during winter and 6pm to 9pm during January and February, and 3pm to 8pm in June, July, and August.

[16] Refer: Alinta Energy response to the capacity mechanism project initiation paper, available here: Post 2025 Market Design – Capacity mechanism - Initiation | energy.gov.au

[17] The "zero times infinity" problem arises when small changes in the amount of available capacity relative to the target results in significant changes in price, potentially undermining the certainty that the mechanism aims to provide. For example, an auction that does not need to incentivise any additional capacity may clear at zero, while an auction that cannot attract sufficient capacity may not clear at all.

would improve the fungibility of the certificates and may improve the build of new investments right across the NEM. From a transparency perspective, a bilateral trading platform on AEMO's website could serve as a portal to connect counterparties and collect information flow on critical datasets such as who owns the certificate and how many were traded etc.

Alinta Energy also notes the ESB's view that enabling retailers to participate in the capacity auction "*would likely increase administrative costs of the mechanism because AEMO would need to procure capacity to meet projected demand irrespective of retailer participation*"[18]. While a concerning position, we nevertheless encourage the ESB to assess all net benefits before determining its final design.

1.5 Performance Obligations and Underperformance Penalties

ESB Recommendation: Availability year-round, with additional requirements to be available during actual lack of reserve events that may be triggered at any time

Alinta Energy welcomes the ESB's preferred position that performance obligations should target a dual factor objective; year-round availability, and delivery of capacity during actual LOR events when it is most needed. This is subject to the recognition that no generating facility is reasonably capable of achieving 100% availability and it would not be in the long-term interests of consumers to include a premium to achieve that level of availability in any capacity mechanism. Purposeful management of plant risk, condition and availability through optimal and timely maintenance, refurbishment and investment is required to maximise a plant's profitability over its residual life to be able to provide a reliable service when asked to. As such, Alinta Energy strongly recommends the ESB consider the interaction of planned maintenance periods with the detailed design for performance obligations and underperformance penalties. This is essential to ensure that generators are not unfairly penalised for undertaking prudent and timely maintenance in accordance with good electricity industry practice.

If this is not addressed, the proposed performance obligations and underperformance penalties will potentially restrict a prudent plant operator from undertaking appropriate and timely maintenance to ensure reliability and will not effectively balance short term operational requirements and the need to maintain the long-term performance, availability and reliability of assets.

While the approach carries a higher regulatory and administrative requirement when compared to the other two options, it will incentivise capacity providers to participate in the mechanism and meet their capacity obligations, while also leveraging existing spot market investment signals. Together, we consider that this will effectively address the missing money problem. The weighting of payments across the two factors may require flexibility to adjust for periods where a higher reliability shortfall is predicted in a given trading year and region, however, as a broad principle, payments should retain sufficient weight that they maintain financial significance and therefore incentivise good operating behaviours.

However, we have some concerns with the penalties for underperformance. As proposed, generators that do not meet their capacity obligations relative to their de-rated capacity value will not receive future capacity payments and/or face the risk of a lower de-rating capacity value in future delivery years. Alinta Energy agrees that any effective incentives scheme must strike the right balance between reward and penalty, but we also believe that the threat of underperformance must carry appropriate consequences to deliver against the capacity objective in a way that minimises scheme risks to consumers. As such, we suggest that the ESB consider ways to strengthen the implications following an assessment of non-compliance. For example, both new and existing projects will be financially motivated to maintain their eligibility

[18] ESB Capacity Mechanism: High Level Design consultation paper; page 42

and registration. Where underperformance is technically assessed[19], either via an appropriately designed testing regime or through an end-of-year assessment, generators should face the risk of a longer period without capacity payments, or a lower de-rating value which is 'locked' for a suitable time period.

In addition, ongoing instances of year-on-year underperformance should carry the risk of ineligibility or more severe derating (i.e. by applying a multiplier effect) for several years. These suggested improvements to the penalties regime will better balance rewards with risks, ensuring that consumers are not financially burdened where a capacity provider does not meet their obligations.

1.6 How will costs be allocated

ESB Recommendation: AEMO could recover costs of capacity via retailers using actual demand (ex-post) during periods where the capacity performance obligation applies.

Alinta Energy is supportive of the ESB's proposal to recover costs from consumers using actual demand data assessed during periods where the performance obligation is triggered (or during periods that approximate these times[20]). We agree that based on the existing design of NEM settlement functions, it is easier to incorporate mechanism costs into existing settlement and prudential requirements.

1.7 Interconnection and the Role of Jurisdictions

ESB Recommendation: Capacity providers located in one region would be eligible to sell capacity to meet reliability in another region (i.e., eligible for procurement).

The interconnected nature of the NEM has a significant bearing on the ability of generators to provide supply in one region to meet demand in another. In addition, interconnection also enables retailers to seek low-cost hedging to cover their customer loads, as well as develop more innovative products. Both inter and intra-regional transmission capacity is therefore critical to the success of a capacity mechanism in the NEM.

Alinta Energy supports the ESB's position that the capacity mechanism design should recognise inter-regional resources when determining capacity targets, and explicitly allow transfers across borders via inter-regional capacity contracts. Any compliance obligations associated with these contracts should reflect the objective of the region they are supplying and the interactions of the interconnected pathway. For example, where a network constraint has been applied by AEMO, the contract should not require compliance for that defined time-period etc.

In terms of procuring capacity, it appears easier to apply transfer limits, which can be set centrally by de-rating the interconnector limit. This approach would simplify auction bids. However, we believe that a further detailed assessment is necessary on the impacts that interconnection could have to the market, including financial market impacts. For example, if a binding network constraint impacts a generator's ability to provide capacity inter-regionally, how are flow on retailer impacts managed?

Alinta Energy shares the broad concerns of industry stakeholders with respect to the role of jurisdictional governments opting out (and potentially back in again at some point in time). In

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[19] Note, any technical assessment must provide suitable flexibility for non-compliance outside of the capacity provider's control. For example, network constraints, consequential outages (outages as a result of a failure of another participant's equipment) or other force majeure events.

[20] E.g. in the WEM, a customer's liability for capacity costs is based on its median consumption during the 12 Trading Intervals with the highest demand in the preceding 'hot season' (between 1 October and 31 March).

our view, if any NEM jurisdiction determined that the design was not compatible with its policy settings, this would significantly limit the effective net benefits of the design. In our view, any reasonable jurisdictional concerns can be adequately addressed through the technical design of the mechanism. We encourage the ESB in their discussions with jurisdictional counterparts, to focus on the positives of an interconnected capacity mechanism, drawing on the decade's worth of value created since the NEM's inception and the successful operation of international interconnected examples.

A harmonised, interconnected capacity mechanism will not only better support the NEM's orderly transformation as a market, but it will also better enable the transition to occur cost efficiently, such as through the Renewable Energy Zones. While there is an important place for environmental objectives delivered through alternative policies, crucially it is not compatible with a capacity design aimed at delivering available reliability to meet the forecast demands of customers at least cost.

The ESB's transmission reform work program is simultaneously being delivered alongside the design of a capacity mechanism. We strongly encourage the ESB to ensure that the two projects are compatible and complementary.

1.8 Implementation

Noting the ESB's continued desire to implement and operate a capacity mechanism design by mid-2025, a simpler regime which can be tweaked later through a broad review process, is preferred. Future changes should provide safeguards to protect incumbent capacity providers against any sovereign risk.

In delivering the detailed design, a phased approach to operation is necessary. Specifically, capacity targets and auctions for the initial years will need to be completed outside of the proposed four year cycle to enable new and existing assets to bid and be ready to deliver against its capacity commitment. In addition, the central planner will also need to develop its method, processes and procedures in advance of the start date.

Alinta Energy encourages the ESB to provide more clarity on its approach to implementation, including the legislative process and any Jurisdictional steps necessary during its next round of consultation.

To ensure that the capacity mechanism is both well-designed, remains fit for purpose and delivers a capacity mix that facilitates a rapid and orderly energy transition, Alinta Energy proposes a two-step market review (preferably within 3 years from the commencement of the mechanism). The initial market review should assess the design, operation and interactions of the capacity mechanism. Specific focus should be placed on delivery outcomes, forecasting accuracy and de-rating, performance incentives, transmission and operating costs. It should also tie into the Reliability Panel's Reliability Standards and Settings Review to ensure suitable investment incentives and market signals remain across each market. This broad review should occur at regular intervals, but no later than three years from of the scheme's commencement.

A second targeted review could be introduced to address stakeholder concerns about prolonging the life of existing technologies and unduly delaying energy transition. This technical assessment, introduced before 2030 would look specifically at the ability of existing assets to deliver against their capacity obligations and could be linked to ongoing eligibility under the capacity mechanism. The targeted review, together with existing notice of closure requirements, will ensure that these valuable assets continue to contribute to reliability and grid security, and are orderly transitioned in a transparent way when they are no longer needed.

Attachment 2: Insights from the WEM Reserve Capacity Mechanism and its evolution