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Australian Energy Regulator
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Submitted via email

Dear Australian Energy Regulator

Essential Energy submission – Islandable Microgrids Trial Waiver consultation

Essential Energy welcomes the opportunity to respond to the Australian Energy Regulator's (AER) consultation on Essential Energy's Islandable Microgrids Trial Waiver application.

The consultation raises important questions about the role of islandable microgrids as a network solution to reliability, the appropriate boundaries between regulated and contestable activities, and the conditions required to support a controlled trial. These are the questions the trial is intended to help answer.

Essential Energy's application is framed as a program-level trial rather than as a series of approvals for individual sites or specific delivery models as technology and models may vary site to site. The suitability of a microgrid solution depends on the network problem being addressed, the customers affected, network topology and alternative supply options, technical islanding capability, community acceptance, funding and commercial viability, and the practical ability to construct and operate the solution.

For that reason, the trial should not seek to prescribe a standard microgrid model. Its value lies in establishing a repeatable framework for determining when an islandable microgrid is an efficient network solution, what reliability capability it can provide, and which delivery model best serves customers in the circumstances of each location.

Essential Energy supports clear boundaries around the trial. Those boundaries should protect customers, competition and system integrity while preserving sufficient flexibility to test the different circumstances the trial is intended to examine. Conditions that effectively prescribe particular sites, ownership models or commercial structures would risk determining the outcome of the trial before the evidence has been gathered.

The framework should also allow the funding and delivery model for an eligible deployment to change over time where the network purpose and approved regulatory boundaries remain unchanged. For example, additional government or regulated funding may reduce or remove the need for commercial use of the assets. The trial framework should accommodate those changes without requiring a different regulatory pathway, provided the deployment continues to satisfy the trial's eligibility criteria and safeguards.

What the trial is intended to learn

Relevant to Questions 1, 2, 5, 7 and 10 in the Consultation notice

A central question for the trial is: **what makes a good islandable microgrid site?**

Poor reliability alone is not the single criteria for determining the suitability of an islandable microgrid. A suitable site is one where:

- An identified network problem can be materially improved through islanding capability
- The relevant section of network can be safely isolated and supplied
- The customer load and outage characteristics can be served at an efficient cost
- The design remains robust under realistic operating conditions
- The affected community supports the solution
- A delivery model can be implemented without compromising the primary reliability purpose.

All of these factors are interacting and valid criteria for assessing suitability of an islandable microgrid. Two communities with similar customer numbers can have very different outage causes, alternative supply arrangements, load profiles, switching boundaries, restoration risks and community preferences. They may also have very different network augmentation, non-network or alternative supply options available to achieve the desired reliability outcome. A location with significant reliability concerns may already have an alternative feeder that reduces the incremental network value available from a microgrid. Another location may have a strong technical and economic case but insufficient community support. In other circumstances, land, planning, network configuration or operational constraints may make an otherwise attractive proposal impractical.

The reliability objective itself also affects the solution. The generation, storage and operational reserve required will depend on the outages the microgrid is intended to address, their duration and timing, customer demand, seasonal conditions and the level of resilience sought. Technical minimum requirements and commercially optimal sizing are therefore separate questions: the network need should first determine the reliability capability required, with commercial opportunities considered subsequently and without displacing that primary purpose.

This is why a program-level framework is necessary. The same regulatory permissions may be relevant across multiple deployments even though the engineering solution, system size, ownership structure, funding model and commercial arrangements differ materially. Requiring separate regulatory approval for each configuration would add process without improving the substantive safeguards applying to the trial.

Learning beyond individual deployments

Relevant to Questions 1, 2 and 15 in the Consultation notice

The value of the trial extends beyond the individual microgrids that may be allowed to proceed under the trial.

Essential Energy intends to use the trial to build an evidence base on site suitability, network need, reliability objectives, technical and operational design, community acceptance, ownership and funding models, market interaction and the practical operation of the regulatory framework. The trial should also identify circumstances where a microgrid is not an efficient solution.

A successful trial is one that produces a better basis for deciding where islandable microgrids create customer value, which delivery models work in different circumstances, and what enduring regulatory

settings are required. Therefore, the framework should be instructive on whether a proposed microgrid should be deployed.

Essential Energy intends to make material learnings available as the evidence develops through the trial. This will include knowledge sharing required under Essential Energy's grant arrangements with the Australian Renewable Energy Agency ((ARENA), relevant reporting through Essential Energy's established annual and regulatory processes, and additional technical, regulatory or case-study material where useful findings emerge. This approach will make evidence available to the AER, market bodies, governments, other networks and market participants without creating a separate duplicative reporting regime or requiring conclusions before sufficient evidence exists.

Competition, contestability and the relevant counterfactual

Relevant to Questions 7, 10 and 12 in the Consultation notice

Essential Energy supports competition where a functioning market can efficiently deliver the required customer outcome. The fact that individual components of a microgrid – generation, storage, construction, operation, trading or finance – are contestable does not, however, establish that there is a functioning market for the integrated reliability service required at a particular location. The relevant question is not whether the entire solution could theoretically be privately provided, but how competition should be used within a delivery model that efficiently addresses the identified network need.

That question will not have the same answer at every site. In some locations, private delivery may be viable. In others, the reliability need may only be addressable with grant funding, regulated investment or a hybrid model. The existence of a contestable battery, generator or service does not by itself establish that an end-to-end private solution will emerge or that it will provide the best customer outcome. The current framework for regulated stand-alone power systems (SAPS) may be illustrative where a a DNSP-led solution to an identified network need is appropriate. That does not stop a solution being developed by the contestable market where driven by customer choice. While islandable microgrids raise additional regulatory and operational issues, the same underlying distinction is relevant: the existence of contestable components does not necessarily mean that a DNSP should be prevented from deploying an integrated solution where it is the efficient means of addressing an identified network need.

The appropriate counterfactual is therefore the realistic alternative available to customers at that location. In some cases that may be a privately delivered microgrid. In others it may be conventional network augmentation, mobile or diesel generation, continued reliance on existing backup arrangements, or continued exposure to lengthy outages. In some locations, prohibiting DNSP participation would not result in private-sector delivery, which may result in no islandable microgrid being delivered. Competition policy should protect genuine competitive opportunities without assuming the existence of a market that is not capable of delivering the required network outcome.

The trial is intended to explore this boundary rather than predetermine it. Essential Energy proposes to retain competition in those parts of the solution where an established market exists, including equipment supply, construction, third-party operation, orchestration, market participation and private investment. Ownership and operating arrangements for the integrated microgrid should then be determined by the model that best addresses the identified network need and delivers value to customers, subject to the trial's ring-fencing, cost-allocation, non-discrimination and transparency safeguards.

For this reason, Essential Energy does not consider that the trial should require a prescribed ownership model or a mandatory market-testing process for the entire end-to-end solution before a deployment can

proceed. Such a requirement could create substantial procurement and assessment costs without demonstrating that an alternative provider is willing or able to deliver the required network outcome. A better approach is to preserve competition in established contestable activities, require each deployment to demonstrate an identified network need and efficient customer outcome, and allow the trial to generate evidence about which ownership and delivery models work best in different circumstances.

Funding, Regulated Asset Base (RAB) treatment and commercial use of spare capacity

Relevant to Questions 10 and 11 in the Consultation notice

The funding model for each microgrid should reflect the purpose of the assets and who benefits from them. Where an asset, or part of an asset, is required to deliver an efficient network reliability outcome, regulated funding may be appropriate. Other components may be supported through government grants, third-party investment or commercial arrangements. The trial should allow these sources to be combined where regulated funding does not cover the full efficient cost of the solution, reducing the amount that would otherwise need to be recovered from network customers.

The scale and capability of each deployment would be determined by the identified network and reliability need, rather than by potential commercial opportunities. For example, the level of generation and storage required to address the targeted proportion of outages would inform the appropriate sizing of the solution. Essential Energy would consider credible alternatives for meeting that need, with regulated funding limited to the efficient cost of the network solution. Where an alternative generation technology or additional capability increases the total project cost beyond that efficient network cost, the balance would need to be supported through other funding sources.

Commercial use of spare capacity must be secondary to the network purpose. Where capacity is available, commercial use can improve asset utilisation, attract private funding and reduce the cost ultimately borne by network customers. Reliability must remain the priority, with commercial activity limited to capacity not required to meet the approved network purpose. Essential Energy supports notification of deployments, substitutions and material changes, but does not consider that individual site approval is necessary where the deployment remains within the approved framework. The purpose of the trial is to test whether that framework can operate consistently across differing circumstances; requiring repeated approval of each site would undermine that objective.

Technical and market operation during islanding

Relevant to Questions 3, 4, 6 and 8 in the Consultation notice

The trial does not seek unrestricted discretion to island sections of the network. Each deployment would operate within defined technical and operational parameters covering islanding, stable operation and reconnection. These parameters would be developed through standardised engineering and operational processes and would reflect the characteristics of the relevant network section and microgrid configuration.

The key requirement is that islanding remains a controlled network operating state. Protection, frequency and voltage performance, generation and load control, reserve requirements, switching arrangements, communications and reconnection criteria must be established before a site is commissioned for islanded operation. The approved technical framework should allow those requirements to be tailored to

the circumstances of each deployment without requiring the interconnected-system standards to be applied where they are not appropriate during temporary islanding.

Temporary islanding may create settlement, metering, reliability-reporting or other market-interface effects. Essential Energy has not identified these as regulatory prohibitions requiring additional waiver relief at this stage. Their materiality and practical effect should instead be assessed through operating experience. Where an issue proves material and cannot be managed through existing arrangements, Essential Energy would engage with the AER, the Australian Energy Market Operator (AEMO) and affected parties on the appropriate regulatory treatment.

Essential Energy therefore supports conditions that require approved technical and operational arrangements to be in place before islanding, together with appropriate monitoring and reporting. Those conditions should focus on safety, system stability, continuity of supply and market integrity, while preserving sufficient flexibility to accommodate different network configurations and technologies across the trial.

Community engagement and consumer safeguards

Relevant to Questions 2, 4 and 12 in the Consultation notice

Community acceptance is an important part of determining whether an islandable microgrid is an appropriate network solution. A technically and economically viable project may still be unsuitable if the affected community does not support the proposed approach or places greater value on alternative forms of reliability or resilience. Community engagement can materially affect whether, and in what form, a proposed deployment proceeds and must be agreed as early in the process of assessing solutions as possible. It is not simply a communications exercise undertaken after the solution has been chosen.

This is another reason the waiver should operate as a framework rather than a fixed list of sites. Engagement may change the design of a proposed deployment, alter its operating arrangements or result in a site not proceeding at all. The trial should accommodate those outcomes without treating them as failures of the framework.

Customers supplied by an islandable microgrid would retain their existing retail and connection arrangements and existing protections relating to complaints, life-support customers, disconnection and access to the energy ombudsman – in a similar way to how DNSP-led SAPS applies today. The trial does not create a new retail product or require customers to contract for a different supply service. Its purpose is to improve the reliability and resilience of the distribution service they already receive.

Essential Energy supports appropriate transparency with affected communities about the purpose of each deployment, expected reliability benefits, operating arrangements and material impacts. These protections should be delivered through existing customer and regulatory frameworks, supplemented by site-specific engagement, rather than through a separate trial-specific consumer regime.

Waiver commencement and duration

Essential Energy seeks a timely AER determination so that the regulatory position is sufficiently certain to support procurement, land and access arrangements, contracting, funding commitments and final investment decisions. Those activities must occur before a microgrid can be constructed and commissioned, but they do not themselves generate the operational evidence the trial is intended to produce.

For that reason, Essential Energy proposes that the five-year waiver period commence when the first deployment relying on the waiver begins exporting electricity to the grid. This provides an objective operational trigger while preserving the full trial period for implementation, observation and learning.

Commencing the five-year period earlier would reduce the time available to test the waiver in practice without increasing regulatory oversight or consumer protection. Essential Energy would notify the AER when the commencement trigger will be reached with reasonable notice.

Essential Energy therefore proposes that the AER determine and grant the waiver on the current assessment timetable, with the five-year trial period measured from the first grid export by a deployment relying on the waiver. This provides the regulatory certainty needed for implementation while preserving the full trial period for observation and learning.

Exit and enduring regulatory treatment

Relevant to Questions 13 and 14 in the Consultation notice

The temporary nature of the trial waiver should be distinguished from the operating lives of the assets it enables, which extend materially beyond the five-year sandbox period. It would therefore be neither efficient nor consistent with the purpose of the sandboxing framework to assume that assets providing an ongoing network benefit should be decommissioned when the trial ends.

The purpose of the trial is to allow innovation under controlled conditions while generating evidence capable of informing enduring regulatory arrangements. The trial should inform the development of enduring arrangements, including any future T-SAPS framework and any further reforms to ownership, service classification, ring-fencing, settlement or related regulatory settings shown by the evidence to be necessary.

For that reason, the appropriate exit pathway should depend on the regulatory framework and the circumstances of each deployment at the end of the trial. A microgrid may transition to an enduring T-SAPS or other regulatory framework, operate under existing arrangements where these have become sufficient, or adopt another ownership or operating model where appropriate. The trial should inform those choices rather than require them to be settled before operational evidence is available.

Transition planning should begin sufficiently before expiry of the waiver to preserve continuity of supply and avoid inefficient costs. Where an asset continues to provide an efficient reliability or resilience benefit, the objective should be an orderly transition to the most appropriate enduring regulatory treatment, not decommissioning solely because the sandbox period has expired.

Conclusion

Essential Energy supports a bounded program-level trial that protects customers, competition and system integrity while preserving the flexibility needed to test different network circumstances and delivery models for islandable microgrids. Conditions should define the trial's purpose, eligibility, safeguards and AER visibility without prescribing individual sites, ownership structures or end-to-end delivery models.

The value of the trial lies in the evidence it can generate about where islandable microgrids create customer value, which models work, and what enduring regulatory settings are required. Essential Energy looks forward to sharing those learnings and working with the AER, market bodies and other stakeholders as that evidence develops.

Essential Energy welcomes the opportunity to discuss this submission further as the AER sees fit. Please feel free to contact Adam Young, Regulatory Strategy Manager, at [redacted]

Yours sincerely

[redacted]

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