TasNetworks
Delivering your power

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Andrew Dillon
Chief Executive Officer
Energy Networks Australia
Unit 5, Level 12
385 Bourke Street
Melbourne VIC 3000

Via email: info@energynetworks.com.au

Dear Mr Dillon,

RE Open Energy Networks Consultation

TasNetworks welcomes the opportunity to make a submission to Energy Networks Australia (**ENA**) on the Open Energy Networks consultation paper.

As the Transmission Network Service Provider (**TNSP**), Distribution Network Service Provider (**DNSP**) and jurisdictional planner in Tasmania, TasNetworks is focused on delivering safe and reliable electricity network services while achieving the lowest sustainable prices for Tasmanian customers. This requires the prudent, safe and efficient management and development of the Tasmanian power system. In this regard, TasNetworks is appreciative of the Australian Energy Market Operator (**AEMO**) and ENAs' efforts to support the better integration of Distributed Energy Resources (**DER**) into electricity networks for the benefit of all customers.

The key points in this submission are:

- TasNetworks strongly supports the Open Energy Networks initiative. In conjunction with the DER grid connection guidelines and principles, the Open Energy Networks initiative represents a vital component for facilitating the transformation to the energy grid of the future.
- TasNetworks considers that passive DER represents a serious impediment and poses key challenges to realising the full value that DER services might provide. In this regard, TasNetworks supports dynamic strategies over static strategies to manage these challenges. These include moves toward cost reflective network pricing, imposition of minimum standards of active capability for all DER, mechanisms to incentivise upgrading of passive to active DER along with upgraded audit and compliance powers for responsible entities.
- In terms of active DER integration and management, TasNetworks submits that consideration of risks, including questions about who is best placed to manage those various risks, is of

paramount importance. TasNetworks contends that development and articulation of a clear hierarchy of risk priorities is essential to help reconciling these issues.

- TasNetworks considers that the best model will be the one that is most resilient in crises, is best understood by customers, most closely matches their desires and provides them the greatest value over the long term.
- TasNetworks' experience is that in depth validation of customer preferences, motivations and actions is crucial to supporting the successful acceptance and application of new initiatives. In this regard, TasNetworks supports the CONSORT Bruny Island Battery Trial (**CONSORT**) submission and will continue to share appropriate learnings from both CONSORT and the EmPOWERing You trials.

TasNetworks responses to individual questions are provided below and we welcome the opportunity to discuss this submission further with you. Should you have any questions, please contact Tim Astley, Team Leader NEM Strategy and Compliance, via email (tim.astley@tasnetworks.com.au) or by phone on (03) 6271 6151.

Yours sincerely,

Wayne Tucker

General Manager Strategic Asset Management

Pathways for DER to provide value:

Are these sources of value comprehensive and do they represent a suitable set of key use-cases to test potential value release mechanisms?

TasNetworks considers that there at least four additional sources of DER value not explicitly recognised in the consultation paper. These include:

- System strength services such as might be provided by aggregated synthetic inertia.
- Islanding and backup services that can be utilised both by an individual customer and groups of customers, i.e. remote area power supply and micro-grids.
- Increased operational flexibility flowing from easier contracting to procure networks services outside a traditional planning window.
- Improved load forecasting and reliability services once appropriate aggregated active DER markets develop.

Are stakeholders willing to share work they have undertaken, and may not yet be in the public domain, which would help to quantify and prioritise these value streams now and into the future?

As was highlighted at the Tasmanian stakeholder's forum, TasNetworks has, in concert with various partners, undertaken several projects that bear relevance to the Open Energy Networks consultation. This includes the CONSORT and the EmPOWERing You trials. TasNetworks has shared insights from these projects with ENA and other Tasmanian stakeholders via the Tasmanian stakeholder's forum held in July. TasNetworks will continue to share relevant learnings and insights from these projects as they progress to maximise the value to all stakeholders participating in the Open Energy Networks initiative.

Maximising passive DER potential:

Are there additional key challenges presented by passive DER beyond those identified here? Is this an appropriate list of new capabilities and actions required to maximise network hosting potential for passive DER? What other actions might need to be taken to maximise passive DER potential?

TasNetworks strongly agrees with both ENA and the Australian Energy Market Commission (**AEMC**)[1] that passive DER represents a serious impediment and poses key challenges to realising the full value that DER might provide. As but one example additional to those raised by the AEMC and ENA, fault performance of passive DER is presently poorly understood. As the penetration of passive DER rises, the risk of adverse outcomes during faults is increased. This has associated implications for the participation and operation of protective schemes such as Under Frequency Load Shedding (UFLS). That is, as Tasmania operates at lower voltages than other transmission networks on the mainland, the chance that distribution system developments can impact the transmission system is higher.

Another example concerns compliance. It is TasNetworks' experience that there can be challenges with DER installations complying with connection standards for various reasons. In this regard, current legislative and regulatory provisions do not assign responsibilities and powers for monitoring and auditing installations to any single entity. Without this, and lacking any overt enforcement or incentive regime, the risk is that passive DER continues to grow and exacerbates the problems already witnessed.

To manage the challenges presented by passive DER, TasNetworks strongly agrees that static strategies, such as applying export limits or undertaking network upgrades, are less optimal than supporting and promoting active DER capability. In this regard, TasNetworks considers that moves toward cost reflective network pricing, imposition of minimum standards of active capability for all

[1] AEMC, *Economic Regulatory Framework Review – Promoting Efficient Investment in the Grid of the Future*, July 2018, p.62-70.

DER, mechanisms to incentivise upgrading of passive to active DER along with upgraded audit and compliance programs for installed DER represent much more beneficial alternative solutions.

Maximising active DER potential:

Are these the key challenges presented by active DER? Would resolution of the key impediments listed be sufficient to release the additional value available from active DER? What other actions might need to be taken to maximise active DER potential? What are the challenges in managing the new and emerging markets for DER? At what point is coordination of the Wholesale, FCAS and new markets for DER required?

TasNetworks considers that there are several other challenges presented by active DER integration that merit further contemplation. Risk is paramount amongst these with questions about who is best placed to manage the various risks needing careful appraisal. TasNetworks submits that a guiding principle should be that those who are responsible for various risks must have the liberty and capacity to manage them. Notwithstanding this principle, a clear hierarchy of risk priorities will also need development and articulation in order to avoid any adverse or perverse outcomes. In this regard, TasNetworks contends that risks to the safety of customers, staff and the power network should override considerations of a more financial nature.

In developing this risk framework, TasNetworks contends that the technical performance characteristics of DER and the operating and business models of relevant entities must also be weighed. How DER is in fact operationalised may vary according to how, and for what services, aggregators contract with customers. In addition, the actual technical characteristics of services provided by one aggregator may differ to another and may change the technical specifications required of DER. For example, the type, accuracy and response of DER technologies may differ and this may in turn influence the level and type of network monitoring and control functionality that is required to support and integrate such technology. In this regard, TasNetworks supports the ENA's ongoing work to clarify and construct minimum service and technical standards for active DER.

Several final considerations concern the interaction with emergency and protection schemes along with compliance issues. Any implications from DER interactions with emergency and protection schemes and any associated communications network interoperability, constraints and vulnerabilities should be assessed as part of the ongoing Open Energy Networks program of work. Similarly, consideration of the audit and compliance frameworks required to support active DER integration should also be a primary feature of the forward work program.

Frameworks for DER optimisation within distribution network limits:

How do aggregators best see themselves interfacing with the market? Have the advantages and disadvantages of each model been appropriately described? Are there other reasons why any of these (or alternative) models should be preferred?

TasNetworks considers that the first question above is best addressed by aggregators. However, in terms of the second, TasNetworks submits that there are at least two other critical issues that merit attention. Similar to the above, the first pertains to understanding and consideration of risk. Under normal operating conditions, each model may be equal in terms of their potential health, safety and network security impacts. However, under adverse conditions, such as during significant storms, the risks attributable to each model may differ. In this respect, TasNetworks strongly suggests that a foundational principle underwriting model generation and selection should be based on the dictum '*primum non nocere'* - first, do no harm.

The second issue pertains to customer understanding and engagement. TasNetworks' experience is that in depth validation of customer preferences, motivations and actions is crucial to supporting the successful acceptance and application of new initiatives. For example, the social science findings from CONSORT have shown that, even with the extensive customer engagement, many customers do

not fully understand the network support services they are providing. Similarly, feedback received from participants in the EmPOWERing You trial has validated the value from a clear and coherent communications strategy.

In terms of the models presented in the consultation paper, TasNetworks suggests there may be merit in considering combining various model elements in order to explore and generate alternative models. One example might be combining a centralised market platform from the first model with the ability for DNSPs to dispatch locally based on an enhanced understanding of local constraints per the second model.

TasNetworks notes that one of the key principles for evaluating various models identified in the consultation paper is lowest cost. TasNetworks commends this parsimonious focus but considers that this is but one element of the value equation relevant to customers. As such, TasNetworks considers that the underlying principle be adjusted to reflect the maximum value possible to customers over the long term.

Incorporating all of the above, TasNetworks considers that the best model may be the one that is most resilient in crises, is best understood by customers, most closely matches their desires and provides them the greatest value over the long term.

Immediate actions to improve DER coordination:

Are these the right actions for the AEMO and Energy Networks Australia to consider to improve the coordination of DER? Are there other immediate actions that could be undertaken to aid the coordination of DER?

TasNetworks considers that the immediate actions described in the consultation paper are relevant and appropriate. In terms of additional future actions, and based on stakeholder feedback at the Tasmanian stakeholder forum, TasNetworks submits that increasing customer engagement and understanding would be advantageous. Reducing subject matter complexity via the adoption of common, customer centric definitions and the use of additional explanatory documentation and/or frequently asked questions to accompany more technical material might prove useful.