

29 March 2019

Bess Clark
General Manager, Project Marinus
TasNetworks
PO Box 606
Moonah Tasmania 7009

Dear Bess,

RESPONSE TO PROJECT MARINUS INITIAL FEASIBILITY REPORT

Epuron Background

Epuron has been developing solar and wind energy projects in Australia since 2003. Our track record of renewable energy development in Australia is second to none. Our experience stretches from site identification, through all phases of development and into construction and operation.

Epuron's primary focus is as an independent developer where completed development projects are transferred to various utilities, suppliers or financial partners at the capital investment stage.

Epuron is a founding signatory to the Clean Energy Council's Best Practice Charter for Renewable Energy Developments. We commit to honouring the Best Practice Charter in our renewable energy projects. We work closely with local communities and key stakeholders to provide broad social and environmental benefits.

Our completed projects include:

- **Cullerin Range Wind Farm** (30MW, NSW, built by Origin Energy)
- **Gullen Range Wind Farm** (165MW, NSW, built by Goldwind)
- **White Rock Wind Farm** (119 turbines, NSW, 175MW Stage 1 built by Goldwind)
- **Silverton Wind Farm** (598 turbines, NSW, 200MW Stage 1 built by AGL)
- **Coppabella Wind Farm** (79 turbines, NSW, sold to Goldwind)
- **Rye Park Wind Farm** (92 turbines, NSW, sold to Tilt Renewables)
- **Clermont Solar Farm** (90MWp, QLD, built by Wirsol)
- **Nevertire Solar Farm** (130MWp, NSW, under construction by Elliot Green Power)
- **Katherine Solar Farm** (32MWp, NT, under construction by ENI Australia)
- **Liverpool Range Wind Farm** (267 turbines, NSW, sold to Tilt Renewables)

Epuron also owns and operates a portfolio of 6 utility scale solar farms in the NT and is currently focused on expanding this solar portfolio.

In recent years Epuron has expanded its development interests outside of NSW. Epuron is currently active in WA (solar), NT (solar / storage), NSW (solar / storage) and has additional wind farm developments with >1000MW under development in each of NSW and QLD, and >800MW under development in Tasmania.

Epuron is proudly Australian owned, and well placed to continue its success in developing solar and wind energy projects across the country.

Tasmanian Developments

Epuron has been assessing Tasmanian development opportunities since ~2008 and began active development of renewable energy projects in ~2014. Over that period we have identified a number of highly prospective sites which share some key characteristics:

- Excellent wind resources, and good solar resources;
- Access to existing grid infrastructure – all projects bar one have grid connection capacity on site;
- Strong landowner interest and general community support;
- Few and manageable environmental constraints.

Epuron's focus relates to projects which can be delivered in the near term, prior to Marinus proceeding. To that extent, all projects have sufficient connection capacity available on site without the need for immediate and capital intensive grid upgrades. However, all projects would benefit from greater interconnectivity with the mainland.

Epuron's current developments include:

- **George Town Solar Farm** (6MWp, planning approved, grid approved)
 - connection to adjacent 22kV feeder supplied from George Town substation
- **Wesley Vale Solar Farm** (15MWp, planning approved, grid advanced)
 - direct connection to adjacent Wesley Vale substation
- **Western Plains Wind Farm** (46MW, planning submission imminent, grid advanced)
 - connection to Port Latta substation via dedicated circuit
- **Hellyer Wind Farm** (~150MW, 110kV connection proposed)
 - connection via existing Hampshire or new Hellyer substation to existing Hampshire – Burnie 110kV transmission line
- **Guildford Wind Farm** (~300MW, 220kV connection proposed)
 - connection via new substation to existing Sheffield – Farrell 220kV transmission lines
- **St Patricks Plains Wind Farm** (~300MW, 220kV connection proposed)
 - connection via new substation to existing Palmerston – Waddamana 110kV (rerated to 220kV) or 220kV transmission lines

At this stage Epuron anticipates:

- George Town SF and Wesley Vale SF could be operating 2020;
- Western Plains WF could be construction ready 2020 and operating 2021;
- Hellyer WF could be construction-ready 2021 and operating 2022; and
- Guildford and St Patricks Plains WFs could be construction-ready 2022 and operating 2023.

These projects all likely meet the requirements of the Regulatory Investment Test for Transmission (RIT-T) as an Anticipated Project.

Epuron is currently working through potential connection arrangements for each site with TasNetworks.

Epuron acknowledges the work underway by TasNetworks in assessing the deeper network constraints in the North-West region of Tasmania which potentially reduce the economic benefits of generation developments in the region. In particular, we note the potential addition of ~200MW into the Burnie node from these projects, plus an additional ~450MW into the Sheffield node, may increase the value of deeper regulated network investments, even in advance of the Marinus connection.

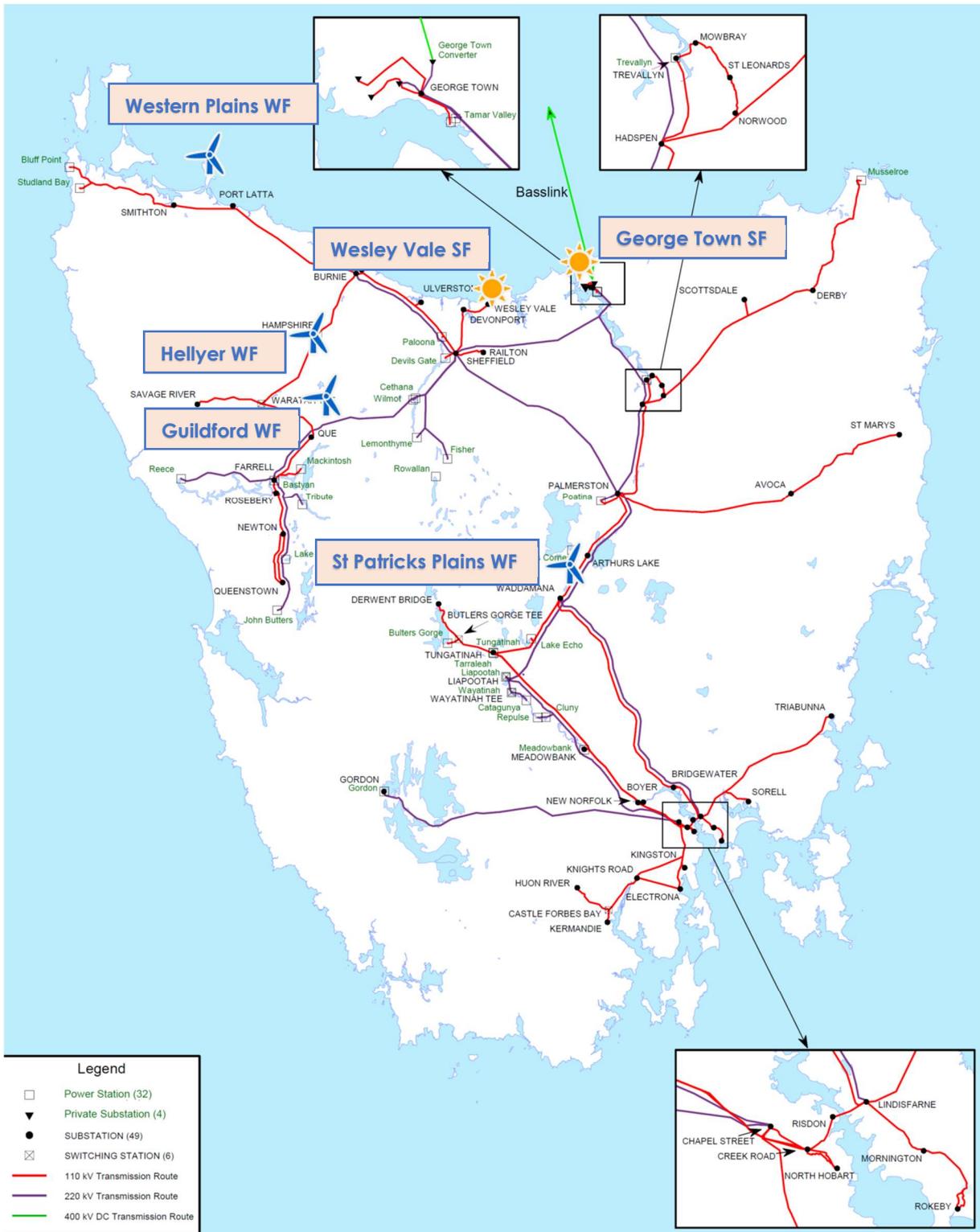


Figure 1 – Epuron Project Locations

Response to Marinus Initial Feasibility Report

Epuron is experienced at renewable energy development in all states of Australia. Based on that experience, we clearly recognize the benefits of additional interconnection capacity, particularly in providing diversity between different generation sources in different regions. While solar resources have only modest geographic diversity, the diversity between different wind energy regions is far more significant. It is essential that interconnector capacity is significantly increased to take advantage of the additional diversity which Tasmania has to offer.

Epuron also recognizes the value of bringing lower cost energy into the market. Energy supplied from Tasmanian wind farms is highly competitive for a range of reasons including very high wind speeds, strong MLFs resulting from proximity to the major Victorian load centre, and reduced curtailment relative to other regions. As a result we expect Tasmanian wind energy to be highly competitive and lower cost than similar generation in key mainland states. As an example, our experience suggests typical capacity factors 35 – 45% for projects in QLD, NSW, VIC compared with capacity factors >50% for Tasmanian sites.

The power capacity available through Hydro Tasmania is extremely valuable to mainland states, both during normal peak and during contingency events. More of that capacity becomes available as the interconnector capacity is increased, which is obviously an advantage. However, Hydro Tasmania's generation system is inherently low on energy availability which is limited by water inflows. The delivery of hydro power to the mainland would be at increased cost if higher cost energy is bought from mainland states during non-peak times to refill or hold back water in the Tasmanian water storages. The highest net system benefit is available if Hydro Tasmania can replenish its storages through lower cost / locally generated wind power.

These benefits are obviously strengthened if additional pumped-storage capacity is brought online as envisioned under the Battery of the Nation project. While alternate pumped storage projects such as Snowy 2.0 also have merit, they do not have the advantage of the locally produced low cost generation sources that Tasmania offers.

On this basis we are strongly supportive of the Marinus link.

We anticipate that the benefits of the link would be greatest with the greatest link capacity. We also support the co-development of additional pumped storage capacity, and investigation of deeper connection impacts within the Tasmanian system.

Our response provides additional information in relation to near-term project development underway in Tasmania. A substantially larger wind energy resource is available once these near-term projects are developed. Epuron anticipates >3000 megawatts of additional wind farm capacity is available in Tasmania across its different wind energy regions; at typical capacity factors these wind farms could easily provide the energy necessary to fill the combined capacity of ~1800MW between Marinus and Basslink.

Specific Feedback.

We believe the following points warrant additional analysis as part of the Marinus investigation, while acknowledging that not all points are relevant to the Initial Feasibility Report.

1. **Connection Locations.** We support the connection of Marinus towards the centre of the Tasmanian system at either Burnie or Sheffield. These locations equally support all future generation regions (north west wind; central wind; north east wind; and various pumped hydro regions). It is essential that the preferred location and proposed upgrades are determined as soon as practical to allow joint development of generation assets in appropriate locations.
2. **Marinus should be regulated.** It is essential that Marinus is developed as a regulated link to provide true cost pricing and provide certainty to new market entrants in the Tasmanian market. Epuron considers that TasNetworks is ideally situated to own and manage that link, and to support that link through investment to relieve deeper network constraints.
3. **Basslink regulatory status should be reviewed.** We also consider it opportune for the status of Basslink to be reviewed. Regulating this asset ahead of the construction of Marinus could provide early certainty which could bring forward construction of new lower-cost generation assets in Tasmania.

4. **Location of Tasmanian RRN.** The Regional Reference Node (RRN) is currently located at George Town. However, the proposed Marinus connection routes places Sheffield at the centre of the Tasmanian system, both from a load and from a generation perspective. Consideration should be given to relocating the RRN to Sheffield as a reasonable reference location.
5. **Generator Contingency Limits.** Tasmania has relatively low generator contingency limited of 144MW. This limit was set before new technologies (such as fast response battery storage) were readily available. All three interconnectors are proposed to be significantly in excess of this limit. This limit has the potential to material increase costs of new generation development and the connection of Marinus should act as a trigger to review whether the limits remain appropriate.
6. **Use of appropriate local data.** The cost benefit analysis required under the Regulatory Impact Test includes a reliance on reasonable assumptions for cost of generation in different locations. While many aspects of these costs are broadly similar, new Tasmanian wind farms would benefit from a high capacity factor (~50-55%), low curtailment (up to 5% in mainland states), and strong MLF (likely 5-15% higher than mainland states). Providing greater access to market for these lower cost generators provide very strong benefits in reducing power costs for consumers.

We look forward to the next stage of consultation, please contact Epuron should you require further detailed information on any of our developments.

Sincerely,



ANDREW DURRAN

Executive Director

ph 0407 206 199