Totally Renewable Yackandandah Inc

Submission to the Standing Committee on the Environment & Energy

on the

Inquiry into the Australian Local Power Agency Bill 2021 and Australian Local Power Agency (Consequential Amendments) Bill 2021

9 July 2021

Introduction

Totally Renewable Yackandandah (TRY) is a volunteer led Incorporated Association, a registered Not-for-Profit and is listed on the Federal Donor Gift Register for Registered Environmental Organisations. The entity was incorporated in 2014 and has 56 members, including 12 committee members, and another 150 people registered to receive our newsletter. A copy of our vision statement is provided as Attachment 1.

Since inception we have implemented a five stage roadmap (Attachment 2) to transition to 100% renewable energy by the year 2022. The roadmap describes the addition of high-quality roof top solar systems with smart energy controllers, the progressive addition of storage, the creation of a community energy retailer and then the addition of scaled community-owned generation and storage assets. All bound together as a virtual power plant and eventually a microgrid capable of continued operation during network supply outages.

The Australian Local Power Agency (ALPA) Bill

Totally Renewable Yackandandah is a very passionate advocate for the Local Power Plan (Attachment 3) that forms the basis for the Australian Local Power Agency Bill 2021 and Australian Local Power Agency (Consequential Amendments) Bill 2021. The implementation of this bill would be transformative for the Yackandandah area and many other communities to whom we speak – over the past 3 years alone we have presented to almost 100 communities across Australia and around 20 research organisations/students interested in our activities, with many of the communities wanting to replicate our activities.

All three main pillars of the Local Power Plan would be enormously powerful. The first pillar, facilitation of community energy projects via hubs with on-the-ground technical expertise, strategic capital investment for the early stages of projects, and a central agency, would be invaluable for ourselves and others to get projects defined to the business plan stage. This can drive local capability to develop energy projects for critical buildings / facilities that can provide services during mains outages. We have demonstrated this with the CFA fire station in Yackandandah which now has a 6 kW solar array, 26 kWh battery and 10 kVA back-up generator, capable of sustained operation over extended emergency events.

We have had significant success with getting projects to implementation readiness but such efforts place pressure on volunteer resources to ensure success. We receive several requests from other community groups each month seeking our assistance to get their projects up and running, totalling a significant drain on our own volunteer capability.

The second pillar, that of underwriting new community investment with assistance to get mid-scale projects off the ground would be pivotal for us right now. We have received a federally funded feasibility grant – *Regional and Remote Community Reliability Fund (RRCRF) – Microgrid Feasibility* – for a 100% Feasibility Study to determine the best mix of energy storage and generation technologies to get Yackandandah to 100% renewable energy. This study is almost complete and the recommended mix of mid-scale projects that will come out of it will require investment to proceed.

Our recently launched 274 kWh community owned battery is an exemplar for mid-scale projects. Such projects are still at the demonstration stage and we are working to realise the capability value stack of battery energy storage systems. The immediate benefits include an enhanced utilisation of local clean power, and matching emissions reductions. Additionally, the increased uptake of batteries will help offset the need to upgrade local electricity distribution assets. Importantly the battery can provide important network aggregation and orchestrated network quality enhancements via our existing smart energy control system – the Mondo Ubi.

Mid-scale projects also allow the building in of resilience measures so that towns can operate as ‘islandable’ microgrids, capable of continued local operation, despite the electricity supply being out due to severe weather or fire. This brings significant benefits and cost savings in terms of recovery times and costs after major disruptions or disasters, especially in regional and rural areas. Not to mention the increased employment opportunities that come with construction activity and the running and maintenance of the

infrastructure. These mid-scale systems also have the capability to offer redundancy in the electricity system to respond to the predictable variability or intermittency of renewable generation.

The third pillar, a community renewable investment scheme, enables communities to co-invest up to 20% in large-scale commercial projects, would also be transformative. Predictably large-scale developments have a notable impact on the communities in which they're located. This third pillar is really important in that it gives the local community a stake in the success of the venture, and it places an increased onus on the developer to engage proactively with the community.

We believe that the creation of an Australian Local Power Agency is the best way to facilitate the three pillars of the Local Power Plan. We have approached ARENA on a number of occasions and consistently found the scale and the social orientation of community energy objectives to be outside the remit of ARENA.

Achievements

TRY has a well-recognised record of success on a diverse range of projects, including a 210 strong virtual power plant, a 60% uptake density of rooftop solar installations, three microgrids, the creation of a community owned retail entity (Indigo Power), the addition of a community battery, and solar on all public buildings (many with batteries).

These labours have revealed a suite of benefits across the community. As key examples we have witnessed:

- Yackandandah Health installed 100kW of solar panels, added LED lighting and added some building design improvements. As a result they saved **$35,000** on their first full year of electricity costs – and that saving was directly able to fund the GP services that was threatened with closure.
- Households who install solar systems, batteries and CO_2 hot water heat pumps shift to a **near-zero** annual power bill,
- Homes that install CO_2 hot water heat pumps with solar systems save a calculated **$640** per year,
- In August 2020, we recorded the generation of **3 GWh** of clean local energy from our virtual power plant. Residents/businesses recorded an aggregated bill reduction of **$473,000** for just over 200 properties in just under three years. This analysis also revealed that **home solar systems reduce power bills on average by 63%**, once they have paid off the cost of the installation (usually 4-6 years). This number jumps to a 73% reduction when a battery is added – plus the utility value of reducing carbon emissions and offering an emergency supply of power during outages. An important consideration in regional areas where households and businesses depend on water pumps for the provision of water for firefighting purposes.
- We have partnered with the AusNet Services' (Vic Network Owner's) subsidiary Mondo to deliver ground-breaking programs, with recognition by two 2019 Clean Energy Council Awards and two 2020 Victorian Premiers Sustainability Awards. We are now the launch town for an ARENA funded energy market trial, titled Project EDGE. This program will work with businesses and residents across Victoria's Hume region, AusNet Services and AEMO to build the platform to transition the National Energy Market to a dynamic two-way electricity market and network.

All of these achievements are examples of activities that would occur under pillars 1 and 2 of the Local Power Plan and would be facilitated by the two ALPA bills. Implementing these bills would facilitate many other communities to experience the same benefits and success that we have had and would make our future projects significantly easier to conduct.

Modelling

In 2020, TRY was successful in receiving $346,000 for our 100% Feasibility Study (funded by *RRCRF – Microgrid Feasibility)*. We have now done the analysis on the activities required to achieve our 100% target, but the final report is not due until the end of 2021.

Please find attached a recent TRY report (Attachment Four – Yackandandah Microgrid Report), which describes a partnership between 17 residents, Mondo and local installers to use distributed energy systems to improve the quality and balance of electricity supply on a constrained Single Wire Earth Return network, (SWER network – very common in rural and remote Australia). We found we were able to improve voltage at properties by a large 5 volts, thus improving the network hosting capacity for renewable equipment, reducing pressure on home electrical appliances, and opening the potential to avoid near-future network supply upgrades.

Conclusion

TRY and Yackandandah have experienced the very real and myriad benefits that community energy projects can bring, along with the huge challenges in conducting those projects despite a booming renewable energy sector. The benefits include reduced utility costs, increased resilience and reliability, the many benefits of using local retailers and contractors, and employing locals to run and maintain project infrastructure. There are also the intangible benefits that it brings to community identity and agency to know that we have a robust and resilient local electricity system that serves our needs and is economical. The two ALPA bills would facilitate that and bring all these benefits to rural and regional Australia.

We would be happy to make a presentation at the hearings for this inquiry.