Mollongghip & District Community Energy Project Journey

This is the journey that Mollongghip & District community has gone on to implement their community energy project. As of the 21st June 2020 the journey is yet to reach its destination.

Joe Finneran, a resident of Mollongghip, attended meetings of the Round Table Reference Group of the Community Power Hub Ballarat established by BREAZE pursuant to its brief from the State Government to develop community-owned and operated renewable energy projects. The role of the Reference Group was to create linkages with the broader Ballarat region and to ensure that any projects initiated by the Hub fitted in to the renewable energy strategic direction of the region.

Joe spoke to the chair of Mollongghip Community Hall to explore with him investigating the possibility of establishing a renewable energy project in Mollongghip. This soon expanded to surrounding districts. Residents and farmers were invited by letterbox drops and road-side posters to meet to discuss the matter. There were five meetings with a total attendance of 130+ people from Mollongghip, Dean, Springbank, Clarkes Hill, Mount Prospect, Bullarook, Langdons Hill, and Rocklyn. Presentations were made at those meetings by Peter Reid, Treasurer of BREAZE, Joe Finneran and Gavin Ronan. The outcome of the meetings was supportive, with reservations, e.g., no obtrusive wind turbines.

Part of the background for the project is the proposal about 16 years ago to establish a wind farm in the Clarkes Hill – Mollongghip area. There were to be 20 turbines about 160 metres high. There was fierce local opposition and, whether as a result of that opposition or not, the plan was shelved in February 2005. It is not clear that the wounds from that dispute have all healed.

The area covered by the project is quite unusual in so far as it has only three small population centres – Mollongghip, Rocklyn and Dean – and most farmers use irrigation (and therefore energy, whether electricity or diesel) heavily in the summer. The 40-odd farms in the area consume about three times as much electricity as the 120-odd residences.

People who volunteered to be members of a Steering Committee (SC) were Gayl Morrow, Gib Wettenhall, Olivia Davis, Gavin Ronan, Joe Finneran, Bryce Ott, Barry Dimond, Noel Gregory, and Peter Reid. Peter is also Treasurer of BREAZE (we never really had a nominated leader). It is a group with particular skills and experience – one member is a potato grower, another is an entrepreneur with a local farming background, another a retired engineer, the fourth a commercial property advisor, one is a qualified horticulturist, two are retired lawyers (one of them an author), the eighth a marketing/branding consultant adviser and the ninth a change management expert. One person who has greatly helped us is Ross Irving, now retired from Sustainability Victoria.

The SC settled on the name Mollongghip and District Community Power Hub (M&DCPH) and formed two sub-committees - one dealing with technical matters, consisting of Joe, Peter and Gavin and one dealing with communications, consisting of Bryce, Gib and Olivia. The SEED PRINCIPLES developed by the community were adopted by the SC in September 2018. The purpose of these guiding principles is to help steer the project and to enable informed decisions to be made. They are set out in full in the Appendix.

The SC made visits to three other projects – the first to Newstead, where negotiations were being conducted with Powercor, the local electricity distributor, to establish a locally-owned solar farm connected to the grid. The team was looking for a retailer prepared to participate in the project.

Our second visit (in December 2018) was to a small wind farm at the Balancing Rock Farm near Ararat, where two refurbished 60 kW turbines 22 metres high had been operating for seven years. Entrepreneurs suggested that they could refurbish two similar turbines at the farm and install them at an appropriate site in our area. The SC considered their proposal but, because we had no site on which a turbine could be erected and the opposition to turbines in the area was too great, informed them that it could not proceed for the time being.

Three SC members visited Yackandandah in March 2019. It was considered that our circumstances were too different from Yackandandah's in that their idea of being their own retailer was too ambitious given the complexity of navigating the legislation required to be a retailer. We did learn that to become a microgrid/virtual grid or similar you did need a retailer licence.

The SC decided to commission a feasibility study. The feasibility study was to look at the renewable energy options open to us and the feasibility study was to develop a business plan for the option chosen. The SC decided in October 2018 that BREAZE (M&DCPH not being a legal entity) should commission the Moreland Energy Foundation Ltd (MEFL) to prepare a feasibility report. Sustainability Victoria via BREAZE committed to providing funds for that report and a subsequent bulk procurement of electricity and the development of detailed financial modelling.

MEFL presented the feasibility report to the SC in December 2018. It assessed the solar, wind, biomass and water resources in the area and stressed the importance of electricity data and the need for data on diesel and LPG usage. MEFL noted that the community had a mix of residents and farmers, primarily growing potatoes but also grain and livestock. It noted that the area had two large reservoirs, was relatively densely populated for a farming area, and produced a lot of biowaste that was currently being burned. MEFL's provisional assessment of the projects possible in our area favoured individual solar generation and battery storage and floating solar, then community energy storage, then micro-wind turbines and small-scale wind farms, then biomass and lastly pumped hydro. The report proposed two alternative models – the first, an incremental distributed energy rollout and the second a rural community energy microgrid.

The incremental community energy rollout would involve M&DCPH working with the community to access solar installation rebates from the Government and energy audits with a view to retrofitting of houses (as with insulation) and a community energy procurement strategy to aggregate energy buying power to cheapen energy purchase. It would eventually move to progressive energy storage, sharing and production projects or to partner with an existing retailer.

The rural community energy microgrid would involve a community-developer partnership which could provide opportunities for community-scale batteries and wind and solar generation if the distribution network service provider (Powercor) was interested. There could be a network cluster in which M&DCPH would be responsible for the electrical infrastructure connecting each customer. Such a cluster could enable 'peer to peer' trading of electricity by way of a software platform or a partner retailer. There could be small-scale renewable generators and batteries or a community-scale generation project or a large-scale solar farm on a private dam or reservoir and/or two medium-scale wind turbines.

The feasibility report created more questions than answers as it did not contain any concrete proposals. The SC's reaction covered several points:

- A critical step would be for the group to buy electricity in bulk at a fixed price for several years from an innovative retailer
- We should ask the retailer to install suitable bulk solar installation on farms and elsewhere to generate local electricity for sharing amongst the community and beyond
- We should continue to seek grants for funding
- We should establish the most cost-effective way to establish peer to peer trading
- We should examine the matter of generation (solar/wind) and storage
- We should consider the difference between virtual and generated electricity – the first being electricity generated and used by a household (or community) and the second being used by the grid
- We should correlate information on diesel consumption across the community
- Community storage could be left to later because of its complexity and high cost.

The SC decided on a phased approach, based on a long-term strategic retailer partnership starting with bulk buy, followed by local generation and storage. It saw critical actions in the process as:

- Retailer engagement
- Energy and Financial modelling leading to a business case (which would require external help)
- Engagement with farm businesses

It also saw the continuation of community engagement as critical.

It was decided in March 2019 that in approaching farmers to obtain information about their energy consumption we should also bring their attention to the State Government's Agricultural Energy Investment Plan under which farmers could obtain grants for half the cost of equipment enhancing energy efficiency and energy productivity. There are three tiers of grants – the first, up to $50,000, the second up to $250,000 and the third (for a community project) up to $1,000.000. Our estimate is that more than 25 farmers from the area have taken steps to obtain a grant with our help. Our experience indicates that very few farmers were aware of the grant program and even fewer understood how to pursue it. Much of our activity has centred on providing help to farmers in applying for the grant and we have enjoyed the assistance of Ms Narelle Conroy. We ran a 'hands on' session for farmers on the AgVic scheme, dealing with such matters as:

- how to apply and how we can help
- after assessment, how to apply for the grant
- how to find suppliers who could give the necessary two quotes on the purchase.

One outcome of the work with farmers was the realisation that consumption of diesel in the area is significantly higher than previously estimated. Our best estimates are that farmers consume 2ML p.a. (equivalent to 5GWh of electricity), a bit more than the electricity currently used in the area. We think this number is higher if we include the 40+ local farmers.

This has led to a business proposal to replace diesel consumption during the irrigation season and more broadly. To ensure that the proposal was economically and environmentally sound, i.e. meets the SEED principles, the team has undertaken extensive research. We have investigated the viability and feasibility of numerous alternative fuels including biodiesel, renewable diesel, ethanol,

hydrogen, and biogas. The optimal solution identified and proposed here is a community owned organisation that focuses on producing a renewable natural gas (RNG) which is primarily used in internal combustion engines that drive irrigation pumps across the district during the summer.

To support the above activities, we decided to appoint a Financial Modelling/Business Case consultant for the performance of disparate steps, rather than an overall task. We obtained community endorsement of the proposed phased approach at a community engagement workshop in May.

The Frontier Impact Group (FIG) was chosen as the business case consultant and produced three draft papers in July 2019 – Peer-to-Peer trading, Expression of Interest document for retailer engagement and Community Battery. We produced a Guide to Residential Solar PV setting out the steps that people needed to take to intending to have solar panels installed on their homes and another on Residential Solar Hot Water and Solar-supported Batteries. In August 2019 FIG and BREAZE (M&DCPH not being a legal entity) formally agreed on the implementation of a feasibility study to identify tailored solutions to achieve desired sustainable energy outcomes. The agreement committed BREAZE to pay FIG's fee and continue to work with FIG. It has taken a considerable amount of time and effort to appoint the right retailer, but we think we are close to achieving this goal.

We are now at the pointy end of the 1st step and progressing the 2nd step. In mid-July 2020, we hope to complete a group-buy of electricity for savings on the bills of both farmers and residents, who will be able to come into the arrangement on 1 August. If they do not take up that offer, they can take up further offers (at up-dated prices) on 1 October 2020 and 1 February 2021. On 30 June 2020 we have submitted an AgVic Tier 3 grant application to obtain funding to progress the replacement of mineral diesel with renewable biogas and creating a circulate energy economy in M&D area.

We learned several things on the journey so far:

- we were lucky that the AgVic scheme came along because it gave us the chance to talk with farmers and to gain their interest in the project
- one needs expert support from consultants to get through the complexities of such projects but picking the right consultant is a critical step
- discipline and professionalism in the working group are necessary, e.g. regular meetings with a chair and scribe (both rotating), assignment of specific tasks and deadlines
- be sensitive, everybody is different and has different needs and levels of understanding
- take it a steady pace, listening to farmers rather than 'selling' them

APPENDIX – SEED PRINCIPLES

Socially Beneficial

- The renewable energy scheme chosen benefits as many people as possible in the community – farmers as well as households
- The necessary infrastructure is as local as possible
- The renewable energy scheme is voluntary to opt-in, democratically accountable and locally controlled
- The process strengthens relationships by working together on something that fosters social cohesion

Environmentally Positive

- The Mollongghip & District Community Power Hub complies with sustainable principles providing equal weight to social, environmental, and economic outcomes
- The human footprint on the landscape is reduced by lowering carbon emissions
- Adverse aesthetic and health effects are avoided
- The renewable energy scheme's design is suitable to place

Economically Effective

- Annual end user net energy costs reduce significantly over time
- The renewable energy scheme offers long-term continuity of supply
- Back-up systems that connect to the grid are in place to minimise outages
- Investment arrangements enable as many people as possible who want to take part to do so

Deliverable

- The renewable energy scheme's mix aims to meet farmers' and households' energy needs night and day as well as in all seasons
- The renewable energy scheme's cost and scale match the community's size and capacities, which could involve taking a staged approach
- The feasibility study is signed off by the community, confirming budget, stages and timeframe prior to implementation