



Bright Futures Renewable Energy – Stage 1



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1. Introduction

The Bright Futures Renewable Energy project is a council initiative to identify and investigate the opportunities for delivering long-term renewable energy solutions for the region.

The aim of the project is to increase the use and production of renewable energy in East Gippsland.

The benefits include attracting new investment in the region, keeping energy generation costs within the region and a reduced reliance on fossil fuels.

In 2016 Council secured \$180,000 in competitive State funding for an East Gippsland renewable energy planning project.

The first stage of this project was funded by the Victorian Climate Change Grants 2015 program, and involved assessing the network grid to look at the opportunities and constraints across the Shire for distributed renewable energy. It has identified a broad range of options for the region.

The second stage of the project will be funded by the New Energy Jobs Fund and will build on the assessment work and prioritise the most appropriate new energy technology options for East Gippsland to have detailed businesses cases developed.

While the project is principally about renewable energy, the recommended approach is to always consider energy efficiency first, and then options for renewable energy to transition towards a low carbon economy. At a household, business and community level, this can also mean saving money and emissions.

2. Technical

Following a competitive public request for quotation process, consultants from ITP Renewables were appointed in June 2017 to undertake technical investigations and recommendations.

The following approach was taken:

- **Stakeholder engagement:** consultations took place in July and September with AusNet, East Gippsland Water, the Department of Environment, Land, Water and Planning (DELWP), Victorian Renewable Energy Advocate, large energy users, solar installers, and community groups (U3A, GELLEN, MSEG) and individuals. Issues were identified around the cost of electricity (and demand tariff), reliability, load profile and options for renewable energy.
- **Grid network study:** data collection was carried out on the grid network. There is a 66kV line connecting Bairnsdale Power Station to both Bairnsdale and to the Morwell zone substation. East of Bairnsdale there a single radial 66 kV line. The Bairnsdale zone substation has no energy at risk during both the summer and winter periods. AusNet Services completed a station rebuild and asset replacement project at Bairnsdale in 2015/16, improving supply reliability for 22,300 customers. Ausnet contracts standby generation from the Bairnsdale

Power Station (a 94 MW Open Cycle Gas Turbine owned by Alinta Energy) in Bairnsdale to provide firm capacity to the Bairnsdale region.

- **Electricity consumption analysis:** Approximately 265,000 MWh of electricity was drawn from the Victorian grid in 2016 in East Gippsland, with about another 18,500 MWh generated by distributed PV. The highest demand peaks occur in winter. About 30% of the electricity is used by households, with the remainder used by business and industry.
- **Computer modelling:** scenarios were developed for East Gippsland relating to the penetration of renewables and the impact on the grid. Different scenarios for renewable energy uptake were modelled to illustrate the impact of different technology choices.

3. Engagement

A concurrent competitive public request for quotation process was undertaken for the engagement component of the project. The Right Man consultancy was appointed in March 2017 to oversee and co-ordinate the stakeholder engagement.

A communication plan was developed and carried out. The main engagement activities included:

- **Surveys:** Two surveys, one for householders and one for businesses to gauge the impact of current energy costs, barriers to renewable energy and opportunities for local government to support uptake. The survey opened on Monday 21 August 2017 and closed at 5pm on Monday 18 September 2017. During this time 763 visitors opened the 'Your Say' website. The household survey received 237 responses. The business survey received 39 responses. Respondents were asked a series of questions about their concern about energy prices; understanding of electricity charges and awareness of energy reduction measures; and views about the importance of pursuing renewable energy for the region and priorities for the future. The surveys were available either electronically or in hard copy at all Customer Service Centres / libraries. Results indicated 85% of respondents are concerned about the cost of electricity, and over 88% of community respondents consider the East Gippsland region needs to shift our energy use to renewable sources. Cost and lack of knowledge about which system or installer to use were identified by the survey as significant constraints.
- **Targeted meetings:** consultations took place in July and September with AusNet, East Gippsland Water, the Department of Environment, Land, Water and Planning (DELWP) in Bairnsdale, large energy users, the Victorian Renewable Energy Advocate, solar installers, and community groups (U3A, GELLEN, MSEG) and individuals. Issues were identified around the cost of electricity (and demand tariff), reliability, load profile and options for renewable energy.
- **Community meetings:** Grouped meetings took place with the Youth Ambassadors, Omeo community, and three Bairnsdale community presentations.
- **Website:** The [Your Say](#) website was developed as a hub for the project and information.

- **Media:** Media releases, a radio interview (local abc), social media and email were the main engagement tools used.

Refer to **Appendix 2 – Engagement Report: Bright Futures Renewable Energy Project** for detailed results and interesting findings from the surveys.

4. Findings

4.1 Stage 1: Technical Report

ITP Renewables have prepared a draft technical report for Stage 1 of the project. The report identifies a range of potential renewable energy options for East Gippsland.

It also discusses the range of possible business models that may be suitable for driving increased uptake of renewable energy and makes specific recommendations on actions that can be taken in East Gippsland, with a special focus on those driven by the community.

Different scenarios for renewable energy uptake are modelled to illustrate the impact of different technology choices.

Refer to **Appendix 1 – Background Technical study: Bright Futures Renewable Energy Project**.

4.2 Community and Stakeholder input

Community and stakeholder input has been an important part of the project in identifying potential models that are suitable to East Gippsland and meet the needs of the community and business.

This input has confirmed:

- A high level of community and business interest in renewables.
- An appetite for information, education and innovation.
- The impact of cost on individual households and businesses.
- End-of-grid issues, e.g. Mallacoota, Omeo district.
- Existing initiatives: East Gippsland Water bio-waste project, EG Shire initiatives, health services, individual businesses.
- An appetite to reduce business energy costs and support for programs to assist with energy audits, transition options and design.
- Strong interest in community-based renewable energy and partnerships with community and business.

- Key facilitation role for Council in brokering information, partnerships, bulk buys, etc.



Photo: over 40 people attended the Community Energy Information Session in Bairnsdale in July 2017 (above).



Photo: Engagement at Omeo took place to cover issues such as end of grid and renewable technology options.



Photo: Bright Futures brainstorming sessions with the Youth Ambassadors.

4.3 Summary of the Findings

NETWORK CONSTRAINTS

There are currently no network constraints that limit the amount of renewable energy that can be added to the grid in East Gippsland. There may be opportunities for solar photovoltaics (PV), coupled with batteries, to help increase the reliability of supply in fringe-of-grid areas, such as Mallacoota, Buchan and the Omeo district.

ELECTRICITY USE

In East Gippsland approximately 265,000 MWh of electricity was drawn from the Victorian grid in 2016, with about another 18,500 MWh generated by distributed PV. About 30% of the electricity is used by households, with the remainder used by business and industry.

EXISTING RENEWABLE ENERGY

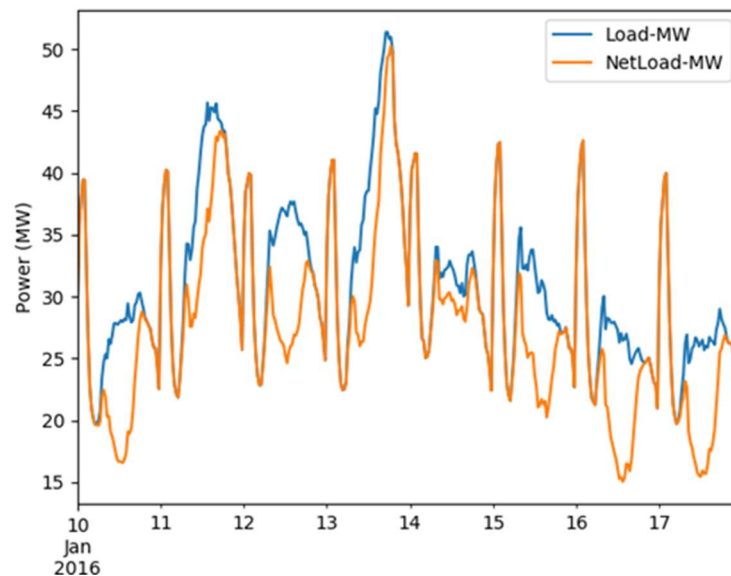
There is currently 16 MW PV installed in East Gippsland Shire, which of about 4,600 systems that are most likely residential, and about 80 are most likely commercial.

The current renewable energy percentage under the Federal Large-scale Renewable Energy Target for Australia is 14.22%.

When the electricity generated by local solar PV is included, East Gippsland Shire exceeds this target, with just under 20% of the electricity currently used being renewable.

TOTAL EAST GIPPSLAND LOAD PROFILE IN A TYPICAL SUMMER WEEK

The orange line shows the electricity drawn from the Victorian grid, and the blue lines show what the load would have been if it hadn't been for the existing PV systems.



4.4 Possible business models

There are many different business models that can be used to enable uptake of renewable energy. The report includes a brief description of each model:

- Bulk buys.
- Solar \$aver programs.
- Social Housing programs.
- Solar Power Purchase Agreements and Solar Leasing arrangements
- Overcoming the split incentive barrier for landlords & tenants.
- Community-owned Renewable Energy Projects – donation based and investment based.
- Local Energy Trading.
- Virtual Power Stations.

4.5 Information and Education

East Gippsland Shire Council is well placed to be a reliable source of information to the community for both energy efficiency and renewable energy, and indeed already provide this service through their 'Energy Use and Savings' website.

There are many possible reasons that energy efficiency is not taken up as much as it could be, including lack of information, lack of time to investigate the options or lack of good resources and advice.

Community members and businesses emphasised that they would like better information about the benefits of renewable energy, what systems to consider and access to potential funding sources for renewable energy projects.

The report recommends a range of actions to increase access to information about renewable energy and assist households and businesses to access expertise and advice.

To increase the uptake of renewable energy in East Gippsland Shire it is important to create an environment where local people and businesses wish to invest.

The installation of just 1 MW of solar PV would create about 20 job-years of direct employment in East Gippsland. The computer modelling also indicates for every 1 MW of solar PV installed, it would generate about 1.15 GWh of renewable electricity each year, avoiding about 1,150 tonnes/year of greenhouse gases, and retaining \$85,000 in the region each year.

A [Your Say](#) page has been set up as a consultation hub for the Bright Futures project.

The screenshot shows the 'Your Say East Gippsland' website. The main heading is 'Bright Futures Renewable Energy Project'. Below the heading, there is a video player showing a person holding a solar panel. To the right of the video, the text reads: 'The Bright Futures Renewable Energy project is a council initiative to identify and investigate the opportunities for delivering long-term renewable energy solutions for the region. The aim of the project is to increase the use and production of renewable energy in East Gippsland. The benefits include attracting new investment in the region, keeping energy generation costs within the region and a reduced reliance on fossil fuels. At a household, business and community level, this also means saving money.' Below this text, it states 'The energy survey for the Bright Futures Renewable Energy Project closed 5pm Monday September 18, 2017.' To the right, there is a 'Document Library' section with the following items: 'Survey - Households (467 KB) (pdf)', 'Survey - Businesses (457 KB) (pdf)', 'Survey Prize Terms and Conditions (159 KB) (pdf)', and 'Bright Futures Renewable Energy Project Fact Sheet (171 KB) (pdf)'. Below the document library, there is a 'Key Dates' section with the entry: 'Local Manufacturing - Gas and Energy Masterclass (Bam) 17 October 2017'.

5. Stage 2 - Potential Projects for East Gippsland

Following consultation with businesses, government and the broader community, the following proposals have been put forward for East Gippsland (and now require prioritising):

5.1 Energy Info Hubs

EGSC could consider further developing their 'Energy Use and Savings' website into a more comprehensive Online Energy Info Hub that pulls together, screens, and provides access to reliable information and tools that are most relevant to East Gippsland Shire.

5.2 Solar bulk buy

EGSC could coordinate a solar bulk buy according to the process outlined in this report. It should be run in close consultation with an organisation such as MASH, use local installers, provide community benefit, and could include batteries and SWHs.

5.3 Solar Savers

EGSC could pursue its current proposal to participate in the state-wide Solar Savers program. Although they have been unable to include local installers in the current program, it may be duplicated with local installers at a later date.

5.4 Landlord/tenant agreements

EGSC could provide information on the different approaches whereby landlords can install solar and receive payment from their tenants so that both benefit.

5.5 Commercial businesses

EGSC could coordinate a two-stage process to help businesses obtain solar. The first stage would involve a Multi-site Feasibility Study, which is a high-level assessment of the viability of solar. The second stage would involve a call for tenders for installers and an assessment of those tenders.

5.6 Community organisations

EGSC and DELWP could develop a publicly available transparent process that tenants are required to go through if they wish to install solar PV. This should include some form of assurance that the lease term would be long enough to pay off the solar system.

5.7 Solar for Schools

EGSC could contact the coordinator of the 'Solar my School' program that is being run jointly by Waverley, Randwick and Woollahra councils in Sydney, and model a similar program for local primary schools.

5.8 Large-scale solar

EGSC could facilitate the development of large-scale solar projects and/or conduct a first-stage assessment of options (as for the commercial sector), to provide a visual representation of the suitability of different areas for large-scale PV, and an estimate of the associated costs.

5.9 End-of-Grid

EGSC could connect the different stakeholders that may be interested in developing end-of-grid solar systems. For example, AusNet could own a battery to manage short-term supply interruptions, the community could own/operate a solar PV system, then East Gippsland Water could both provide the land at the local water treatment facility and purchase the electricity.

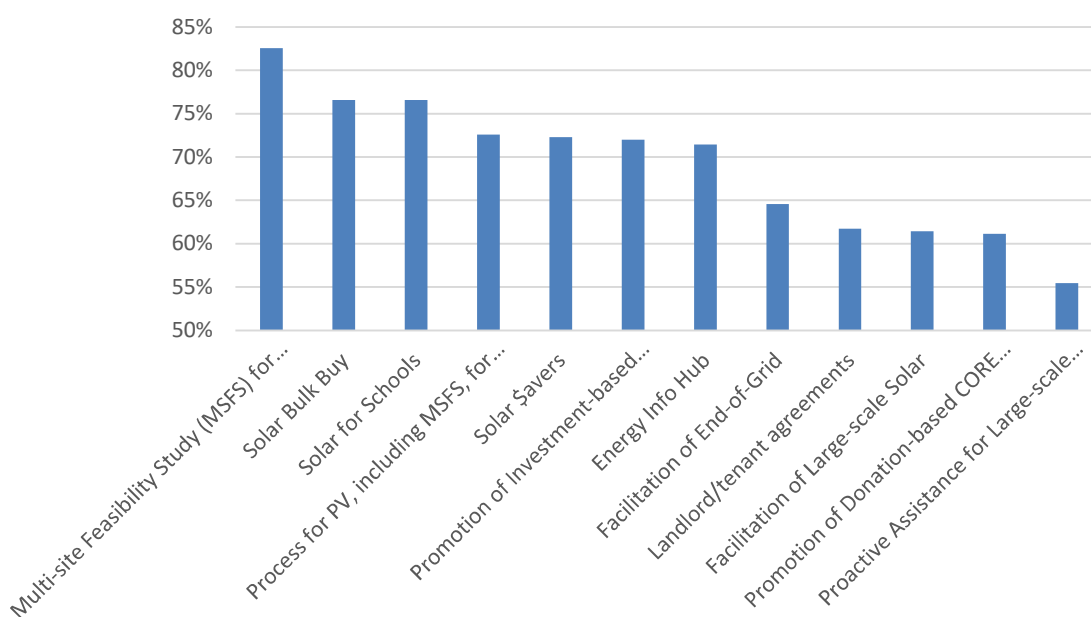
5.10 Community-Owned Renewable Energy

EGSC could facilitate the development of community-owned renewable energy projects in all the above proposals. For all but the large-scale solar projects, this would most likely use the 'RePower Shoalhaven' model, and ideally be with their direct assistance. For large-scale solar, either a cornerstone investor or an unlisted public company limited by shares or a cooperative structure could be used.

6. Next Steps

This report completes the Project funded under the Climate Change Grants 2015 program. It has provided an analysis of the grid, energy use and sources in East Gippsland and has identified options and potential projects to be considered by East Gippsland Shire.

The Project Steering Committee have undertaken an initial prioritisation of options outlined here (in order of ranking):



The transitions steps to stage 2 include:

- Undertake the business and community feedback forums on 16 and 17 October 2017, and the Council briefing session on 17 October 2017.
- Release the summary of findings and full technical report to the public.
- Short listing option based on further community, councillor and stakeholder input, and ground-truth against Project Steering Committee prioritisation (see graph above).

Stage 2 of the Bright Futures Project will involve developing a plan to implement the high priority projects. It will include a detailed scope, budgets, timeframes and resources required to deliver the project/s and develop business cases. (It might include setting targets for the project that are reportable).

Stage 2 funding completion is July 2018.

The other closely related projects that will be delivered as part of this program of works includes the Solar Savers program for 50 low income pensioner households and solar panel installation on Council buildings over the next 2 years (\$110,000 for 2017/18 and \$110,000 for 2018/19).

Future project options will be developed with consideration for the following funding sources:

- Climate Change Innovation Fund (DELWP).
- New Energy Jobs Funding (DELWP) opens end 2017.
- Consideration by EGSC for the budget.

7. Appendices

APPENDIX 1 – BACKGROUND TECHNICAL STUDY: BRIGHT FUTURES RENEWABLE ENERGY PROJECT, BY ITP RENEWABLES.

APPENDIX 2 – ENGAGEMENT REPORT: BRIGHT FUTURES RENEWABLE ENERGY PROJECT

8. Further information

For further information please contact the Sustainability Unit on 5153 9500, via email sustainability@egipps.vic.gov.au or the [Bright Futures Your Say](#) page on the Council website.

Contact us

Telephone

Residents' Information Line: 1300 555 886 (business hours)

Citizen Service Centre: (03) 5153 9500 (business hours)

National Relay Service: 133 677

Post

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Fax (03) 5153 9576

Web www.eastgippsland.vic.gov.au

Email feedback@egipps.vic.gov.au

In person

Bairnsdale: 273 Main Street

Lakes Entrance: 18 Mechanics Street

Mallacoota: 70 Maurice Avenue

Omeo: 179 Day Avenue

Orbost: 1 Ruskin Street

Paynesville: 55 The Esplanade

Outreach Centres

Bendoc Outreach Centre -

18 Dowling Street

Buchan Resource Centre -

6 Centre Road

Cann River Community Centre -

Princes Highway