

February 2019

Community Power Hub Bendigo
Bendigo Sustainability Group
23a Somerville Street
FLORA HILL VIC 3552

Community Scale 2 MWp Solar Farms Initial market EOI to establish preferred supplier shortlist

Introduction

The Bendigo Sustainability Group (BSG) was founded in 2007 and has a long history of very successful involvement with community owned renewable energy which includes;

- The Goldfields SolarHub solar PV bulk buy – 650 residential solar PV systems totaling almost 2 MW were installed in central Victoria over the 2010-2012 period;
- Funding and establishment of now 6 commercial scale rooftop solar PV systems since 2015 with total capacity of 144 kW with 4 owned by the BSG with long-term power purchase and roof rental agreements in place;
- Recipient of the 2016 Premier's Sustainability Regional Achievement Award;
- Proposing to utilize the old gold mines under Bendigo for a 30 MW / 180 MWh pumped hydro energy storage; and
- Delivered various energy efficiency and business focused programs.

Please visit www.bsg.org.au for further information about the BSG and some of the past and current projects.

The BSG under the Community Power Hub project, is intending to develop a series of small community scale solar farms in the region around Bendigo and across Central Victoria, in addition to other major rooftop solar projects. It is intended to develop a template model community scale solar farm design that can be readily implemented at different locations and with minimal changes required. It is further intended that standardised componentry for each project can be containerised as much as possible to enable pre-installation in the factory and possibly at greater volumes to minimise costs and complexity on the sites. Refer to Attachment 1 for an indication of a possible spread of solar farms across the region.

The BSG is also working very closely with the City of Greater Bendigo on regional renewables and is in discussions with regard to power purchase agreements as well as a significant additional number of rooftop solar PV systems on Council buildings. The BSG has also had very positive discussions with a number of Victorian electricity retailers regarding possible power purchase agreements for power generated by community scale solar farms as well as them offering retail products locally for both solar farm investors and other locals.

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The BSG has worked closely with another local council and a broader team on potential Solar Garden projects and is also positioning itself for the anticipated VRET round 2 from the Victorian Government including community allocation.

Community Scale Solar Farm

For each individual solar farm project, the stage 1 capacity will be 1.5 MWac (~2 MWp). This will enable the solar farms to feed directly into the Powercor 22 kV distribution network via a new dedicated LV connection / kiosk.

There is the potential for each 2MWp solar farm to be expanded, either simultaneous with stage 1 or at a later stage, with a solar panel capacity exceeding 2 MWp by featuring on-site energy storage, to enable greater use of the capacity of the grid connection. This is termed stage 2 and is out of scope for the current EOI.

EOI

This EOI is to create a shortlist of qualified firms able to fulfil the role of head contractor responsible for the procurement of all equipment, construction and maintenance of the solar farm assets. We are seeking firms competent to:

- Design, construct and maintain solar farms of 2 MWp scale;
- Use single-axis trackers (default) or alternatively if the proponent believes other configurations are more economic (lower levelised cost of energy) at this scale, present alternatives for comparison e.g. fixed tilt north or east-west arrays;
- Source all equipment including panels, framing/trackers, inverters and balance of system at competitive prices to provide a turnkey price per project;
- Demonstrate capacity to operate cost-efficiently and time-effectively in the Bendigo and Central Victorian region;
- Preferably demonstrate prior experience with Powercor for new LV connections; and
- Turnkey experience in solar projects the 1-10 MWp scale range.

It is currently intended that, solar turnkey suppliers short-listed through this process, will be invited to quote for specific projects once planning permits and grid approvals are secured. However the BSG reserves the right to make other arrangements as may be necessary or desired.

The estimated volume of projects will be approximately 2 - 4 per year x 2 MWp for first 10 projects (set 1) and 3 - 5 per year x 2 MWp for next 10 projects (set 2). However the pace and timing of community solar farm development will depend on financial viability, investment support, approvals processes and many other factors.

EOI Queries and Response:

Enhar has been engaged as consultant to the project for initial development of project specifications and management of the EOI.



Questions on the EOI should be submitted to:

tenders@enhar.com.au

EOI responses should be submitted to:

tenders@enhar.com.au

EOI Response Deadline:

Last date to submit questions: 5 pm on Thurs 21 Feb 2019

Deadline for EOI submissions: 5 pm on Thurs 7 Mar 2019

Non-binding Offers

Prices received in this EOI will be non-binding.

The BSG makes no guarantee of project volumes or timelines or whether any projects will proceed beyond this EOI.

The BSG undertakes not to disclose publically or to other parties not involved in the project specific pricing and other commercial-in-confidence information provided by respondents.

Solar Farm Sites

Respondents should assume site and project characteristics including:

- Located within the City of Greater Bendigo council area, Victoria or the Bendigo side of adjacent Shires;
- Connected to low voltage side of a new Powercor 22kV to 415V kiosk located within the solar farm land area - kiosk to be provided by Powercor;
- Generally flat land with terrain gradients below 3% throughout;
- Area for project already cleared of all trees and significant vegetation;
- Rectangular shape of land available as shown in attached drawings;

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- Land currently, or able to be, used for sheep grazing and suitable for continued grazing amongst the solar array;
- Reflectivity typical of low grass;
- Soil type suitable for piles to suit trackers;
- Land zoning: Farming Zone, Rural Conservation Zone or Rural Living Zone;
- Environmental sensitivities: No environmental or heritage overlays on project area;
- No flooding zones on project area;
- LV connection point will be supplied by Powercor with the point of connection immediately adjacent to the PV array boundary as shown on attached drawings; and
- Construction period outside of winter months to minimize drainage issues

This EOI is not site specific but is intended to obtain pricing applicable to typical sites that may be developed. Site-specific firm quotes will later be obtained for specific sites as they are developed. An illustration of possible site regional locations is provided in Attachment 1.

The BSG has already identified a number of potential sites for a community solar farm including Council owned, public land or private land sites, offered up by landowners. Assessment of sites will be undertaken by the BSG to prioritise and narrow down to the best initial handful of sites but leaving a pipeline of suitable sites for future installations. It would then be our intent for each of the selected sites to:

1. Enter into an Option to Lease legal agreement with the landowner;
2. Secure Powercor grid connection agreement;
3. Obtain planning permit from the City of Greater Bendigo;
4. Secure power purchase agreements for the generated power;
5. Establish a legal entity to be funded by local investors to own and operate the solar farm(s);
6. Obtain firm pricing from shortlisted turnkey construction partners; and
7. Construct and operate the solar farms.

Functional Specification:

Respondents should specify a complete system which:

- Maximises solar generation kWh/kWp/yr;
- Minimises the levelised cost of energy \$/MWh;
- Utilises high quality modules, inverters and framing/trackers;
- Bifacial panels may be offered especially where an attractive cost-benefit of upgrading to bifacial can be clearly shown; note 3rd party verified performance assessment of

bifacial benefit is preferred, along with computation of bifacial energy yield benefit for proposed array spacing;

- Uses LV inverters suitable for LV connection to Powercor kiosk;
 - The concept design specifies distributed 15 x 100kW LV inverters due to benefits of modularity, multiple MPPT, and avoidance of DC combiner boxes.
- Where possible and feasible utilises equipment and a layout where the likes of the main switchboard, electricity meters, inverters, control and monitoring equipment are pre-fabricated / installed in a containerized fashion within a factory environment and quickly and simply installed and connected onsite.

Inclusions within EOI indicative pricing

As the costs of large scale solar PV is decreasing rapidly respondents should develop indicative pricing assuming construction in the 2020 calendar year.

Respondents should include the following, but not be limited to:

- Detailed Design;
- Liaison with Powercor for installation of new LV kiosk in project area, from existing 22kV grid line immediately adjacent to the project area;
- Compliance with Powercor grid connection approval requirements;
- Supply and construction of all components including:
 - a. Modules, total 2 MWp capacity;
 - b. Frames (default = single axis trackers, alternatives may be offered);
 - c. Piles;
 - d. Inverters , total 1.5 MVA;
 - e. Concrete bases for containerized equipment including inverters;
 - f. DC and AC Cables;
 - g. Monitoring and control systems;
 - h. Switchboards including protection, LGC metering;
 - i. New site maintenance tracks including civil works, drainage gutters;
 - j. Road widening from public road access;
 - k. 700m of security fencing around perimeter of site –see drawing C001-L01;
 - l. 1 x dual port electric vehicle charging station: 22 kW per port, 3 phase, Type 2 socket.
- Commissioning;
- Defects liability period for 1 year;

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- Annual maintenance package – cost per year and option for 5 year O&M package:
 - a. Preventative and active maintenance activity including trackers, inverters, panels, balance of plant;
- Energy generation performance warranty terms; and
- All reasonable allowance for easy connection of stage 2 works:
 - a. The likes of electrical design, cabling and ready connection terminals should be allowed for;
- An indication of percentage pricing reduction if multiple community solar farms were commissioned at the same time and constructed together (or in very close following succession to maximize the contractors efficiency). Respondents should provide percentage reductions for the following number of community solar farms when commissioned in the same contract:

Exclusions within EOI indicative pricing

Respondents should exclude the following:

- Planning application, Council fees and environmental studies;
- Grid connection application to Powercor including grid simulations (assume grid approval obtained by BSG based on concept design);
- Supply and installation of 1.5 MVA capacity transformer and LV kiosk;
- Construction on gradients more than 3%;
- All management of public interaction will be done by BSG, including neighbors, public enquiries, complaints; and
- Stage 2 works.

The solar array area will be fenced, however the landowner will be granted access rights and key access within the solar array area to continue rural use of the land such as sheep grazing in order to maintain vegetation and reduce fire risk.

EOI Submissions:

EOI submissions are to include concise summaries of:

1. Proposed equipment, specifications, energy performance:

- Alternative equipment options can be presented, stating relative benefits and costs;
- 2. Annual energy yield;
- 3. Preferred energy performance guarantee mechanism;
- 4. Indicative pricing inserted into detailed EOI schedule spreadsheet provided including clearly articulated contingency amount included and commentary;
- 5. Indicative timeline of activities for completion of construction;
- 6. Indicative payment milestones inserted;
- 7. Sheep grazing compatibility management plan;
- 8. Name and address of head contractor, and sub-contractors involved in delivery team;
- 9. Capability and capacity of project team or consortium; and
- 10. Prior experience as head contractor in projects of 1-10 MWp scale in Australia.

ATTACHMENTS:

1. General regional indication of solar farms
2. Enhar specification drawings including schematic layout, single line diagrams
3. Detailed pricing spreadsheet