Independent Planning Commission NSW

Glanmire Solar Works with BESS. SSD-21208499

Independent Planning Commission - Glanmire Solar Farm (nsw.gov.au)

Submission from Save Our Surroundings 06 December2023
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Dear Commission

Save Our Surroundings (SOS) has considerable concerns with the Elgin Energy Glanmire Solar and BESS proposal. In summary they are:

1. The embedded CO2e in the solar works up to commissioning will not be offset.
2. Improving the capacity and security of the electricity grid and placing downward pressure on electricity prices for consumers will not occur.
3. The project will breach Australia's obligations under Article 2 of the Paris Agreement.
4. Several misleading, omitted or exaggerated claims, including output, lifespan, capacity, capacity factor, long-term commitment and jobs.
5. Inadequate conditions covering fire mitigation and end-of-life decommissioning and site rehabilitation.

1. Embedded CO2e

The Proponent does not state the type or source of the 128,000 PV solar panels. This matters.

The period for the CO2e payback or offset over the economic life of the project is significant. China is the world's highest emitter of CO2e in the world (31%) and supplier of 90% of PV solar panels being imported into Australia. If the PV solar panels are sourced from China it can take up to 14.3 years of electricity generation just to offset the embedded CO2e in the panels alone. Please refer to the attached paper "**Chinese Manufactured PV Solar Panels Increase GHG Emissions"** for details**.**

Just as the IPCN refused the Bylong Coal Project in 2019 because it was contrary to the principles of ecologically sustainable development, including climate, the Commission should refuse the Glanmire Solar project for similar reasons.

2. Capacity, security and electricity prices

Improving Capacity: SOS has developed a formula where Capacity equivalence Ce = solar works (capacity X capacity factor X claimed life)/ base-load (capacity factor X economic life).
The capacity equivalence (Ce) of this project is, using a generously more realistic life of 25 years and the Proponent's unrealistic capacity factor of 35% is (60 x 0.35 x 25)/0.9 x 50) is 11.7MW. Hardly a meaningful increase in the installed capacity of the NEM, which is currently about 65,000MW.

Improving security and downward pressure on prices: The IEA defines **energy security** as the uninterrupted availability of **energy** sources at an affordable price. Every night the solar project will

produce zero electricity output and so fails the IEA definition of "uninterrupted availability of energy".

No country or jurisdiction in the world has reduced electricity prices once they exceed 30% or more of solar and wind turbine generation capacity in their electricity system. The NEM is already over 30% wind and solar capacity and electricity prices are the highest they have ever been.

The Proponent of this project is making unsubstantiated claims that do not accord with lived experience both in Australia and numerous countries overseas. How can it reduce overall prices when it only produces electricity some of the time.

The BESS will place demand on the grid and only supply back less than 80% due to energy losses in the charge/discharge cycle alone.

Placing downward pressure on electricity prices for consumers will not occur.

3. Paris Agreement breached

The Proponent states as justification for its project that Australia is a signatory to the Paris Agreement (EIS 2.1.2 page 12). However, Article 2.1(b) of the Paris Agreement states:

"*1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:*

(b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, ***in a manner that does not threaten food production****;*" (emphasis added by SOS)

Clearly this project proposes to remove land currently used for food production. It therefore threatens food production, especially in the context of an accumulation of such projects already or proposed to be on Australia's 6% (4% arable) of agricultural land.

In addition, we have demonstrated that the project creates significant upfront greenhouse gas emissions. It will also create more CO2e emissions during production due to solar panel replacement, battery and inverter replacement, decommissioning and rehabilitation at end-of-life to name a few.

If this project is approved it will be in breach of Australia's' obligations under the legally binding Paris Agreement Article 2.1(b).

4. Misleading, omitted or exaggerated claims

Capacity: As stated earlier the 'up to 60MW capacity' is not comparable to a 60MW base-load power plant. This means that to produce the equivalent amount of alternating current electricity over a period of years the project would need to be 5 to 8 times larger. This means more land cleared. materials required, more upfront CO2e emissions created and much more waste produced.

Capacity Factor (CF): CF defines how much electricity the Solar Works could produce over a period of time from its nameplate capacity. It is an essential to accurately know the CF to assess capital

recovery, CO2e offset period, backup requirements, degradation rate, relative output compared to alternatives, and LGC subsidies. Yet the Proponent has not provided this figure. Nor has the DPE requested it be provided. The project's output in MWh is not even explicitly stated.

Based on data obscured by the Proponent in the EIS we have determined that the starting capacity factor for this project is 35% for a full year [1]. It is unusual to have a CF this high. Typically Proponents of solar works have starting CFs of 25% - 30%. The IPCN is aware of the CF's for Oxley Solar (29.9%) and Glenellen Solar (25.2%). The NEM had a CF for all solar works in the NEM for 12 months to 31/12/20 of 23% and for NSW 24%. [2].

Output: It is misleading to claim that the project will produce enough electricity to power 128,000 NSW homes. No home owner, business or industry requires electricity for only a few hours a day, which is all that this project will do.

Lifespan: The proponent claims a 40 years lifespan for the project**.** Most proponents state lives of 20 - 25 years, such as Oxley Solar and Glenellen Solar. We suggest the Proponent is using a recent "trick" of extending the physical life after 20 years through a possible refurbishment or replacement. This is deceitful. The efficiency of solar panels degrade over time by 15% or more over 25 years ,so becoming uneconomical and non-competitive. The BESS (batteries and inverters) lifespan is up to 13 years at one charge/discharge cycle a day. There 40 years lifespan is misleading.

Long-term commitment: Proponents claim to the impacted communities that they are in it for the long-term. They can then make all sorts of commitments, which are accepted on face-value by the DPE. Elgin Energy sold 12 of its unbuilt solar works in Ireland in 2022. It is not uncommon for developers to get a project "shovel ready", as they say, before off-loading it. Who will actually be accountable for all the commitments made just so the project will be approved and then be saleable?

Local Jobs: A frequent stated benefit to the impacted communities is the claim of local job creation. There are numerous examples of most of the workers during construction being brought in from outside the area. Backpackers mainly, but temporary work visas for overseas workers are now being suggested to fill the proposed multiple labour camps of 500 to 1200 workers each in NSW REZs. This is the future! Little local employment even during construction and no full-time employment during operation of the solar works. Obviously, the promises of local jobs is a cruel hoax.

No social licence: Of the 144 submissions there were 133 objections and 9 in support. Clearly the project does not have community consent for the project and so does not have the social licence required under the planning guidelines.

5. Inadequate conditions

Minimise harm to the environment (B4): The DPE recommends this project despite its significant contribution to increasing CO2e emissions before commissioning, negatively impacting local flora and fauna, potentially contaminating the land and creating toxic waste with an uncertain ability of it safe disposal.

Fire safety study (C27): No requirement to actually consult with the local Rural Fire Service, who will be the ones called upon to contain the spread of fires from the project site. fire-fighters will not

directly fight solar panel or battery fires because of the increased dangers involved. There is limited scope to quickly extinguish BESS fires, which as already occurred twice in Australia. Such fires were just allowed to burn out over several days, spewing very toxic smoke into the air the whole time. There is no mitigation for this smoke contamination, which for rural areas can result in contamination of their roofs, tank water and dams. Nearby towns may need to be evacuated. Suggested conditions are shown at Appendix A.

Decommissioning (C34): A toothless condition. Probably impractical to do decommissioning and land rehabilitation in 18 months. Where will the 128,000 PV solar panels be disposed and all the other toxic equipment and components. What about the replacement of batteries and inverters, which have a much shorter life than solar panels? No upfront bond is required and therefore no commitment by the future owner of the solar works to carry out this very expensive work.

Conclusion

Save our Surroundings (SOS) only highlighted a few issues in this submission. We hope the Commission will critically assess the significant deficiencies we have raised with the Glanmire Solar proposal and DPE Assessment Report.

The upfront and repeated creation of substantial greenhouse gases, the driving up of NEM system electricity costs because of a very low capacity factor, declining efficiency and short lives, the non-compliance with the Paris Agreement, the deceptions within the EIS and the project not having social licence are but few matters raised.

Also, the DPE's inadequate conditions on fire protection and end-of-life decommissioning are of great concern to all rural communities but are not adequately addressed.

We disagree with the DPE's conclusion that the project is in the "*…public interest and approvable*". Based on the analysis and evidence provided in this submission we trust that the Commission will reach the same conclusion as has SOS and the communities directly impacted by the proposal.

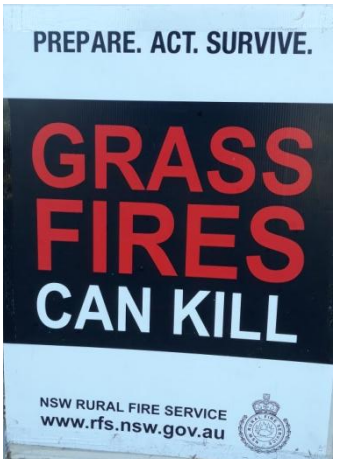
Your sincerely
Regards
Save Our Surroundings (SOS)

Save Our Surroundings (SOS) is part of network of like-minded groups of concerned & impacted citizens in rural Australia directly affected by the proliferation of industrial scale weather-dependent “unreliables” & their negative impacts upon local & global environments & communities. Independently run groups like SOS span multiple States. We share & distribute information, research & experiences with each other & other parties.

Appendix A: Suggested Fire Risk Mitigation

Suggestions by Save Our Surroundings

The messages are is clear



Grass fires kill

Firefighters are "under funded" "under resourced" "under valued"

The proliferation of solar and wind works, including associated BESS, inverters, sub-stations and other infrastructure, as well as new high voltage transmission lines exposes landowners and towns people to significantly increased risks over and above the level of risks they already face. Concentrating such works in such a small area so close to towns invites a disaster at some point. Not if, but when! The precautionary principle must be applied.

Existing fire risk regulations and fire risk mitigation proposals are totally inadequate for solar and wind electricity generating works and BESS works and must be substantially improved before any more projects are approved so close to rural towns. SOS suggests for industrial solar, wind and storage projects that:

- No works be permitted within 15kms of any town
- Automatic sprinkler systems must be installed around the site perimeter
- Several dams full of water must be maintained onsite for water-bombing craft use
- Several 50,000 litre water tanks must be located around the outside perimeter of the site
- Works owners must contribute financially to the local RFS and FSNSW units annually to help fund the specialised equipment and training required and for research into how to safely fight battery fires.

Suggestions by Glanmire Action Group

SSD21208499_Objection_web_main.pdf (squarespace.com) p63 - 64

Fire-fighting Resources and Preparedness (EIS page 280)

The Proponent indicates that "*water storage tanks are to be installed with the Development footprint for fire-fighting and other non-potable water uses, with a 65mm Storz outlet, a metal valve and a minimum of 20,000 litres reserved for fire-fighting purposes*".

We note this Proponent's proposal is without the consultation with local NSW RFS District Fire Control Centre.

In relation to the adequacy of this proposed mitigation strategy, Ms Dawson's expert view is that:-

"*The water supply proposed to be provided for fire-fighting purposes is the equivalent of the that required to protect one (1) dwelling house. The solar farm site has a perimeter distance of over 6km and an area of nearly 200 hectares. The proposed water supply would be vastly insufficient to provide any meaningful protection of the site.*

In the absence of a specific numerical guideline for water supply volume for solar farms in PBP, the recent Country Fire Service Design Guidelines and Model Requirements: Renewable Energy Facilities could be utilised as a best practice guide, which requires:-

a. Generally, for the solar farm one (1) x 45,000L static water tank for every 100 hectares of a site, plus,

b. For the battery energy storage system protection, no less than 288,000L or as per the provisions for Open Yard Protection of AS 2419.1-2005 flowing for a period of no less than four hours at 20L/s, whichever is greater, plus

c. For the substation."

(See Document 17: Erika Dawson Bushfire Expert Report, 7 December

References:

[1] SOS calculation of capacity factor: (28000 homes x 18kw/day x 365 days)/ (60MW x 24 hours x 365 days) = 183960MWh/525,600Mwh) = 0.35 = 35%

[2] Supply side price drivers in the NEM - WattClarity Ben Willacy 1/2/2021: Solar CF NSW 24% NEM NEM