The Minister for Planning
Department of Planning and Environment

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18 November 2022

Objection to SSD-23700028 –
500MW Solar Farm with 200MW/400MWh battery energy storage
Puggoon Road – 8 kilometres North West of Gulgong

Dear Sir,

The continuing destruction of the Australian countryside is unacceptable to Australian citizens who support country residents in their objection to the irrational development of environmentally destructive wind farms and solar farms.

When determining any development application primary consideration should be given to the principles of ecologically sustainable development as stated in:

Federal Legislation - Environment Protection and Biodiversity Conservation Act 1999

3A Principles of ecologically sustainable development

> The following principles are ***principles of ecologically sustainable development***:
>
> (a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.
>
> (b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
>
> (c) the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
>
> (d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.

Considering each of the principles as they relate to SSD-23700028.

3A (a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations

The Applicant submits, in the Environmental Impact Statement, at 9.4.1 The Precautionary Principle, that:

"In order to achieve a level of scientific certainty in relation to potential impacts associated with the Project, the EIS includes an extensive evaluation of all the key components of the Project. Detailed assessment of all key issues and necessary management procedures has been conducted and is comprehensively documented in this EIS."

Solar farms are short term installations. The push for nuclear energy in Australia and the rest of the world to provide reliable, sustainable, affordable energy while not emitting carbon dioxide will, in my

opinion, see this project, if approved, become a stranded asset. The United States has approved the development of Small Modular Reactors (**SMRs**) and the British Government has provided 400 million pounds to Rolls Royce for the development of their SMRs. The French Government has similarly committed to SMRs and the Dutch Government has just committed to build 2 nuclear power stations. Finland is constructing 2 nuclear power stations. China is also constructing new nuclear power stations. Canadian provinces, Ontario, Alberta, Saskatchewan and New Brunswick have committed to SMRs to reduce their carbon dioxide emissions.

Nuscale, an American company, has contracted with the Utah Associated Municipal Power Systems, to construct a 924Mwe power plant at Idaho Falls, Idaho, which will be fully operational in 2030. Nuscale have also proposed the use of SMRs to repurpose coal fired power stations in the United States. https://www.nuscalepower.com/newsletter/nucleus-fall-2020/featured-topic

When considering environmental issues there is a dark side to renewable energy. Much emphasis is placed on the worldwide production of carbon dioxide by the burning of fossil fuels. What isn't discussed is the life cycle of PV solar panels which includes the sourcing and mining of raw materials to enable the manufacture of PV solar panels (See Appendix A – The Dark Side of "Renewable Energy" – Phases 1 and 2).

Increasingly tenuous supply chains for PV solar panels puts at risk Australia's energy security and therefore national security.

Social impacts include the use of forced labour by some PV solar panel manufacturers in the production of PV solar panels as reported in the United Nations Human Rights, Office of the High Commissioner's Report dated 31 August 2022. If forced labour is used in the manufacture of only one solar panel that is one too many.

If the project is approved. there must be a condition of approval which specifically requires the Applicant to prove unequivocally, that no component used in the construction of the solar farm, were procured, manufactured or assembled by forced or slave labour. (See Appendix A – The Dark Side of "Renewable Energy" – Phase 4)

3A (b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation

Again, there are threats of serious and irreversible environmental damage associated with the manufacture, installation and decommissioning of PV solar panels. (See Appendix A – The Dark Side of "Renewable Energy" – Phases 1, 2, 3, 5, 7, 8 and 9).

The Applicant submits, in the Environmental Impact Statement, at 3.6 Decommissioning, that:

"RES or its contractors will seek to recycle all dismantled and decommissioned infrastructure and equipment, where feasible and practicable. Structures and equipment that cannot be recycled would be disposed of at an approved waste management facility in accordance with all statutory requirements."

It is not a question of if decommissioning will be required. Decommissioning will be required and is essential. The Mining Industry is required to submit Rehabilitation Bonds to ensure finance is available for rehabilitation purposes at the end of life of the mining operation. **Approval should not be given by The Approval Authority unless** RES Australia Pty Ltd provides an upfront bond to be held in trust for the site to be returned to 'pre-solar farm' purposes. The bond must be for an appropriate amount as determined by detailed calculations provided by RES Australia Pty Ltd and reviewed by the Approval Authority.

If the land is leased, a Rehabilitation bond would protect the landholder from the liability of removing and disposing of the solar farm infrastructure, if the solar farm beneficial owner goes into administration or liquidation.

Further, a Decommissioning and Rehabilitation Plan (DRP) should be submitted to the Approval Authority for review, especially to consider the method of disposal of the PV solar panels. Currently there is no cost-effective methodology for PV solar panel disposal. (See Appendix A – The Dark Side of "Renewable Energy" – Phase 10).

The DRP is a critical consideration in the approval process and should be lodged with the Approval Authority for review and public comment before the Development Application is determined.

"While a range of treatment processes are being investigated, further R&D is required. Chemical processes investigated for delamination (of PV solar panels) and metal recovery, use solvents and would likely produce a liquid waste stream.

This analysis assumes the short lifespan (15 years) has a significant impact on the estimated waste volumes and the totals reported do not consider a collection rate that would likely be very low in the near term without policy intervention."

(University of Technology, Sydney (UTS) Scoping study for photovoltaic panel and battery system reuse and recycling fund - Prepared for NSW Department of Planning, Industry and Environment by UTS Institute of Sustainable Futures & Equilibrium Consulting, March 2020)

3A (c) the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations

Rural lands, being developed for solar farms, have been used for agricultural production, in many instances, for well over 150 years. Managed properly these rural lands could continue to be used for agricultural production for centuries to come. The proposed solar farm is a short-term installation (25% of a generation) and will not provide meaningful jobs for the local community during its short lifetime as opposed to ongoing employment for locals if the land continues to be used for agricultural production.

Australian agriculture accounts for 0.55% of land use (427 million hectares, excluding timber production in December 2020). The value of the land for the proposed solar farm, I believe, will increase significantly over coming decades because of the need to provide cropping and grazing land for the benefit of future generations. Conversely, in my opinion, the value of the land with a solar farm lease will be significantly reduced.

It is short sighted and short term to continue to reduce available agricultural land by building PV solar farms on agricultural land. (See Appendix A – The Dark Side of "Renewable Energy" – Phase 8).

There is an ancient Indian saying:

"We do not inherit the earth from our ancestors, we borrow it from our children"

The Environmental Impact Statement has paid lip services to intergenerational equity.

3A (d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making

The conservation of biological diversity and ecological integrity should not only be considered in relation to the local area. The life cycle of PV solar panels should always be considered in relation

to ecologically sustainable development, from raw material sourcing through to decommissioning and the disposal of the toxic waste.

PV solar farms should be considered, not as a contributor to the prevention of anthropogenic climate change by purporting to reduce carbon dioxide emissions and being environmentally friendly, but through their life cycle, as a threat to conservation of biological diversity, ecological integrity and a significant contributor to carbon dioxide emissions.

The Approval Authority, as the responsible Approval Authority, should have regard to the life cycle of PV solar panels when considering SSD-23700028.

Extracts below from Appendix A – The Dark Side of "Renewable Energy"

"**Phase 1 – Raw material sourcing – Environment Destruction**

"A global "gold rush" for energy materials will take miners into remote wilderness areas (that) have maintained high biodiversity because they haven't yet been disturbed."
(*Praeger University, Mark Mills – What's Wrong with Wind and Solar – at 3.06) https://www.youtube.com/watch?v=RqppRC37OgI&feature=youtu.be)*

Phase 2 – Raw material mining – Environment Destruction, Toxic Waste

"The transition towards a renewable energy and transport system requires a complex mix of metals – such as copper, cobalt, nickel, rare earths, lithium and silver – many of which have only previously been mined in small amounts. Under a 100% renewable energy scenario demand for these metals could rise dramatically and require new sources of primary and recycled metals."
(*UTS – Institute for Sustainable Futures – Responsible Materials Sourcing for Renewable Energy Report - April 2019 page ii*)"

Phase 3 – Raw material processing - Environment Destruction, Toxic Waste

"The manufacture of solar panels requires significant natural resources including quartz, coal, silver, copper and highly toxic rare earth elements. Mining those resources is damaging to the environment and destroys habitats.

Processing those natural resources requires generation of significant amounts of electricity. In particular, construction of photovoltaic (PV) cells (i.e. solar cells) requires the extraction of silicon from quartz (i.e. silicon oxide) using carbon. "The first step of solar PV production is gathering, transporting and burning millions of tons of coal, coke and petroleum coke – along with charcoal and wood chips made from hardwood trees – to smelt > 97% pure mg-Si from quartz". Large quantities of coal, coke, charcoal and woodchips must be burnt, with a consequential substantial release of CO2 into the atmosphere. A "vast amount of deforestation [is] necessary for solar PV production"
(Why Do We Burn Coal and Trees to Make Solar Panels? Thomas Troszak, 14 November 2019, para 2, paras 3 and 15 and reference notes [14] to [16])

The PV solar farm, the subject of SSD-23700028, should be considered, by the Approval Authority, not as a contributor to the prevention of anthropogenic climate change by purporting to reduce carbon dioxide emissions and being environmentally friendly, but through its life cycle, as a threat to conservation of biological diversity, ecological integrity and a significant contributor to carbon dioxide emissions.

It is ridiculous that Australia is currently not effectively using its abundant uranium resources to provide an affordable, available, sustainable and reliable energy generation network for its citizens

and businesses. The development of Small Modular Reactors which are now a reality in the United States and in many other parts of the world, will be available within the next decade to repurpose Australia's coal fired power stations.

The Approval Authority should advocate that the Federal Government remove the prohibition on nuclear energy. Australia is the only G20 country where nuclear energy is banned by Federal law. Nuclear energy will enable Australia to achieve net zero emissions of carbon dioxide in an affordable, reliable and environmentally friendly manner. Nuclear energy will meet Australia's energy needs for generations to come. Equally vital, it will meet our national security needs as it does not rely on supply chains that are becoming increasingly tenuous.

I oppose approval of the abovementioned development for the reasons set out above.

In my opinion, PV solar farms, such as the one the subject of SSD-23700028, as I noted before, will become stranded assets. If development approval is granted, the Applicant must be required to provide a realistic Rehabilitation Bond, to be held in trust for the site to be returned to 'pre-solar farm' purposes.

Coal, gas and uranium provide energy sovereignty for Australia. With wind turbines, PV solar panels and batteries we cede our sovereignty to a foreign power!

Yours faithfully,

Bill Stinson

B.App.Sc.(Bld), Diploma in Labour Relations and the Law, Certificate in Design Science (Facilities Management)