



**During community engagement and the Submission process for Muswellbrook Solar Farm, some questions have been raised relating to the project.**

**OX2 have provided some responses below with an aim of providing additional information to the community.**

**The full and formal response to submissions will be available once completed on the major projects portal <https://pp.planningportal.nsw.gov.au/major-projects/projects/muswellbrook-solar-farm>**

**OX2 wish to continue an open dialogue with the community as the project progresses and welcome the opportunity to discuss the project further.**

### **Potential visual impact of the solar farm on neighbouring residences**

A landscape assessment has been undertaken in accordance with the Large-Scale Solar Guidelines and technical supplement which provides a very rigorous process for assessment of visual impacts from a solar farm.

The solar farm sits low within the landscape behind existing features such as the transmission lines. Existing vegetation also provides some screening and therefore intermittent views of the project. Existing vegetation will be retained along the Muscle Creek riparian zone and other key waterways within the project area and along the mine access track.

The results of which indicate that the visual impact of the solar farm is low and therefore no additional mitigation measures such as residential vegetation screening are proposed currently.

However, OX2 are willing to discuss any visual impacts on individual residential properties with the owners at a suitable point in the project's development.

## Health Impacts

Solar panels are placed on more than 30% of Australian homes and have been on homes across the world for the past 15 years<sup>1</sup>. There is no evidence to suggest there are health issues associated with solar panels.

The materials used to make solar panels are sealed and contained so they do not negatively affect the surrounding area. Many myths regarding harmful chemicals stem from a different type of solar cell made from cadmium, which is no longer manufactured and is not proposed for this solar farm. The solar panels proposed do not contain lead, arsenic or other toxic metals.

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) has concluded that there is no established evidence that the exposure to magnetic fields from powerlines, substations, transformers or other electrical sources, regardless of the proximity, causes any health effects.

*“For substations and transformers the magnetic fields at distances of 5-10m away are generally indistinguishable from typical background levels in the home”.*<sup>2</sup>

The majority of neighbouring residences are currently closer to the existing 330kV, 132kV and 11kV powerlines than they would be to the proposed solar farm and associated infrastructure.

<sup>1</sup> [Solar Energy Systems on households have more than doubled since 2018 – now at nearly a third of all households \(32.3%\) - Roy Morgan Research](#)

<sup>2</sup> <https://www.arpansa.gov.au/understanding-radiation/radiation-sources/more-radiation-sources/electricity>

## Temperature Increase

In NSW the Revised Large-Scale Solar Energy Guidelines, August 2022, <https://www.planningportal.nsw.gov.au/solar-guidelines> when talking about Heat Island effects they indicate that;

*“Where a solar energy project is located adjacent to a horticultural or cropping activity, the solar array should be setback from the property boundary by at least 30m to mitigate any heat island effect.”*

All properties are further than 30m from the solar panels proposed at Muswellbrook solar farm.

## Fire Risk

There is a very minimal fire risk associated with photovoltaic panels or solar farms. There is also a cleared vegetation zone around the edge of the solar farm to prevent fire spreading. This is complemented by a strict vegetation management plan.

The emergency procedures for the solar farm will be developed in conjunction with the relevant fire authority and outlined in an Emergency Management Plan.

A Preliminary Hazard Assessment was undertaken by Sherpa Consulting (process safety and risk specialists). The potential hazards associated with operation of the project were identified through a hazard identification process involving a review of previous risk assessments for similar projects, standards for battery systems, literature, and product information from manufacturers (e.g. product datasheet, safety manuals, installation manuals). The hazard identification process identified that all resulting consequences are not expected to have off-site impacts. Further details can be found in Appendix M of the Environmental Impact Assessment available on the Major Projects website <https://pp.planningportal.nsw.gov.au/major-projects/projects/muswellbrook-solar-farm>. A Bushfire Strategic Study has been prepared for the project by Cool Burn Fire and Ecology (provided in Appendix N) of the Environmental Impact Assessment. The project would result in a reduction of unmanaged bushfire prone vegetation and connectivity in the locality, such that adjoining land uses would benefit from an overall reduced bushfire risk. No additional bushfire management actions would be required on adjoining land. The mitigation measures outlined in the Bushfire Strategic Study would ensure that the project complies with the aims, objectives and specific performance criteria of Planning for Bushfire Protection (RFS 2019).

## Environmental Impacts

A number of technical assessments have been undertaken in support of the application for Muswellbrook solar farm:

Biodiversity Assessment

Cultural Heritage Assessment

Agricultural Impact Assessment

Noise Assessment

Traffic Impact Assessment

Landscape and Visual Impact Assessment

Hydrology Assessment

Bushfire Risk Assessment

Hazard Assessment

Social Impact Assessment

These assessments are taken into consideration by the decision maker when determining the application. All details are available within the EIS online at:

<https://pp.planningportal.nsw.gov.au/major-projects/projects/muswellbrook-solar-farm>

## Biodiversity

The project area was selected in part due to its highly disturbed nature. The southern project area is characterised by degraded native grasslands and modified pasture. The northern project area has been historically disturbed and consists of regenerating even-aged regrowth. Preliminary biodiversity assessments were completed in early 2021 which identified areas of larger intact woodland which have been avoided. While the project will result in the loss of some native vegetation and threatened species habitat, the impacts have been minimised through an avoid and minimise process which has been documented in the project Biodiversity Assessment Report (BDAR) (Appendix C of the Response to Submissions Report, <https://pp.planningportal.nsw.gov.au/major-projects/projects/muswellbrook-solar-farm>).

The project will manage and mitigate impacts through the development of a biodiversity management plan, using measures recommended in the BDAR. Some impacts will require offsetting. A biodiversity offset strategy will be implemented for the project to ensure that all residual impacts on biodiversity of the project are appropriately offset. There are two parcels of land, adjacent to the southern portion of the development area that are currently being investigated for biodiversity stewardship agreements.

## Local Road Maintenance

A detailed construction traffic management plan (CTMP) will be developed by the construction contractor in consultation with Muswellbrook Shire Council prior to the commencement of works.

The CTMP will include a Driver Code of Conduct which informs drivers about the school bus routes along Muscle Creek Road and Sandy Creek Road.

During construction, traffic management may be necessary to minimise any traffic impact on Muscle Creek Road and Sandy Creek Road.

Weekly inspections of Muscle Creek Road and Sandy Creek Road will occur during the construction period to ensure road integrity is maintained.

## Decommissioning

Once the project reaches the end of its operational life, a decision will be made to either decommission or re-power the facility, subject to approval requirements.

If the project is decommissioned, all above ground structures built as part of the project will be removed and site rehabilitated generally to its pre-existing land use.

If re-powering is proposed, an appropriate stakeholder consultation process will be undertaken, and all necessary approvals will be sought.

## Property value impacts

A wide range of factors affect property values over time, including factors at an individual property, local, regional and macroeconomic level. There is no significant research on the impact of renewable energy infrastructure on neighbouring property values in an Australian setting. The most relevant research available demonstrates that renewable energy facilities, such as wind farms and solar farms, have a negligible impact on property prices.

In addition, the project is within the REZ, which has a potential to attract new residents as the workforce grows with the development of renewable energy projects, which may in turn increase values of properties in the region.

Further information can be found in the Response to Submissions Report <https://pp.planningportal.nsw.gov.au/major-projects/projects/muswellbrook-solar-farm>.

## Recycling

Waste from end-of-life solar panels presents opportunities to recover valuable materials and create jobs through recycling.

Solar panels have an aluminium frame, glass, copper wire, polymer layers and a backsheet, silicon solar cells, and a plastic junction box.

Many of these components can be recycled. Glass composes most of the weight of a solar panel (about 75 percent), and glass recycling is already a well-established industry. Other materials that are easily recyclable include the aluminium frame, copper wire, and plastic junction box.<sup>1</sup>

There are different methods to recycle solar panels, which can include some or all the following three steps:

1. Removal of the frame and junction box,
2. Separation of the glass and the silicon wafer through thermal, mechanical or chemical processes; and/or
3. Separation and purification of the silicon cells and specialty metals (e.g., silver, tin, copper) through chemical and electrical techniques.

The industry is new and still growing, with researchers examining how to commercialise recycling to economically recover most of the components of a solar panel.

Elecsome have an established PV panel recycling facility in Kilmany, VIC and have approval to accept panels for a proposed PV recycling facility in Casino, NSW.<sup>2</sup>

NSW EPA's Circular Solar Fund has been in operation for 2 years to prepare for the emerging waste stream from solar PV panels and battery storage systems.

OX2 are will liaising directly with the companies that have been involved with this scheme with an aim of diverting all waste from landfill.

<sup>1</sup> <https://www.epa.gov/hw/solar-panel-recycling>  
<sup>2</sup> <https://elecsome.com/>

