

Hydrological and Flooding Assessment

Daroobalgie Solar Farm

Daroobalgie Solar Farm is a proposed renewable energy project located approximately 11 kilometres northeast of Forbes in NSW. The Project would comprise of a solar farm (approximately 100 MW) and transmission line to connect the solar farm to the existing electricity transmission network. The Project would provide enough electricity to power the equivalent of 34,000 homes each year.

Hydrological and Flooding Assessment

An independent hydrological and flooding assessment of the Project is being undertaken by SMEC Australia Pty Ltd. The assessment will inform the Environmental Impact Statement for the Project.

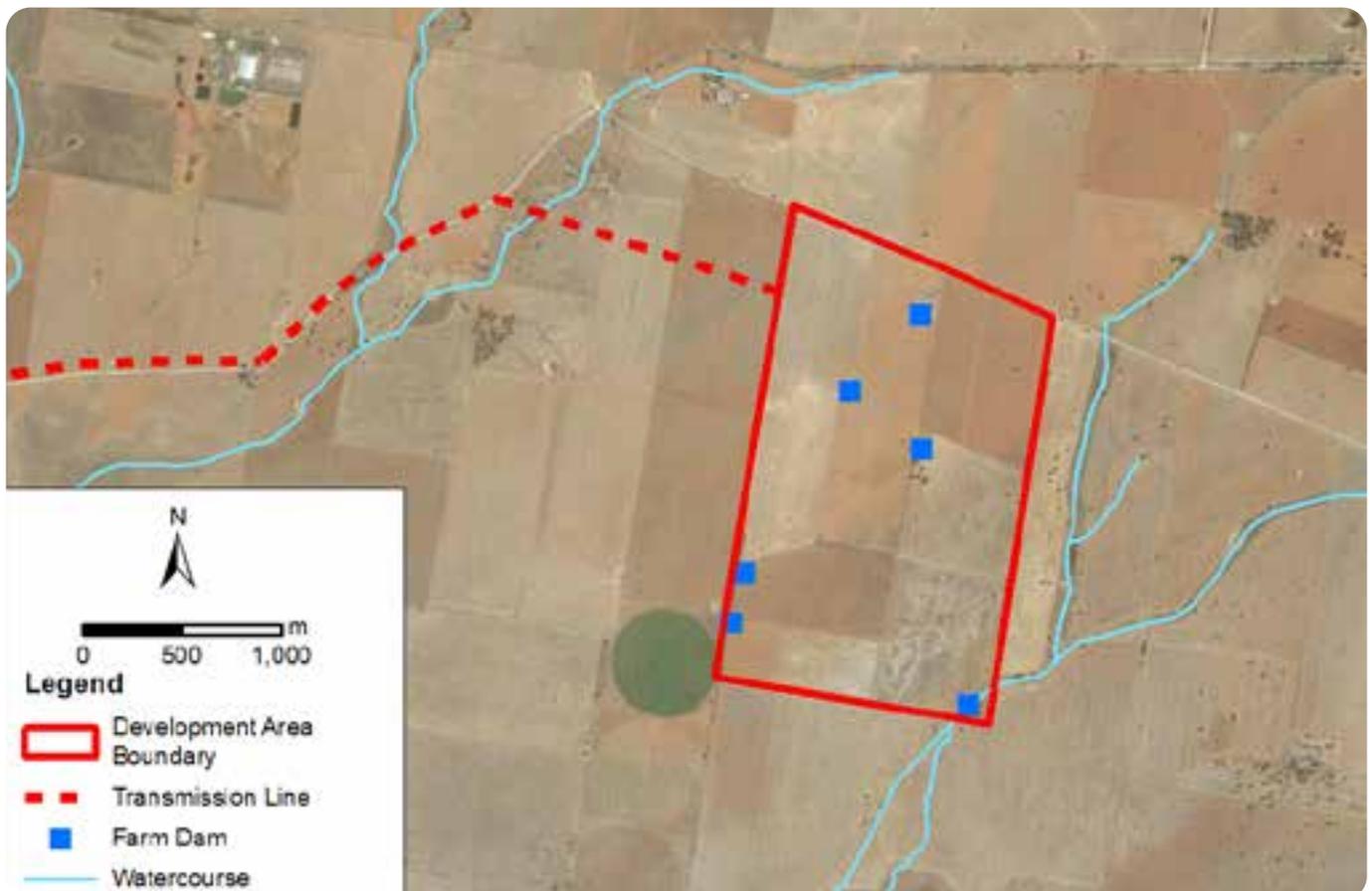
Existing Environment

The proposed Project is located within the Lachlan Catchment. The Lachlan River is located 3.5 kilometres to the south of the solar farm site and is the closest permanent water source. The proposed solar farm site is relatively flat, however drains to the southwest. There are several small dams located within the site,

while an unnamed watercourse runs through the south-eastern corner of the site and the proposed transmission line intersects several unnamed tributaries that flow south to join to a larger unnamed watercourse.

Intermittent waterholes known as Gilgai are present in the Project area. Gilgai are depressions that are formed by the expansion and contraction of clay rich soils caused by seasonal wetting and drying. The depressions capture and hold water following rainfall.

The two major aquifers in the Project area are the Cowra Formation and the deeper Lachlan Formation. The depth of groundwater at the solar farm site is expected to vary over time depending on the climate and with flooding events however is likely to be greater than 7.5 meters as test-pits on-site to this depth have not encountered groundwater.



Preliminary Findings and Mitigations

	Assessment findings	Mitigations
Flooding	During a 1 in 100-year storm event the majority of the solar farm site has been assessed to have a low hazard classification (H1) indicating that it is safe for people, vehicles and buildings. The southeast corner however, in the vicinity of the unnamed watercourse and Gilgai soils, is more prone to flooding and has a higher hazard rating (H3) during a 1 in 100 storm event.	The southeastern area of the site in the vicinity of the unnamed watercourse will be avoided. Therefore, there will not be any impact on the main surface water flow path through the site. Four of the existing farm dams will be retained, which will further assist with retaining water on the site during heavy rainfall events.
Erosion and sedimentation	During construction there would be potential for sediment and nutrient laden runoff from disturbed areas to impact water quality in downstream waterways.	Key management strategies for erosion and sediment control will include: <ul style="list-style-type: none"> ▪ Minimising extent and duration of disturbance ▪ Control of stormwater flows onto, through and from the site ▪ Use of sediment control measures to prevent off site impacts ▪ Stabilisation of disturbed areas quickly and progressively throughout construction staging ▪ Regular inspection and maintenance of control measures
Groundwater	<p>The Project is not anticipated to have any direct interactions with groundwater as excavations required for the installation of solar panels, buildings and the transmission line poles are not anticipated to intercept the water table.</p> <p>Construction and operation water is not anticipated to be sourced from groundwater.</p>	<p>Standard site management measures will be implemented to ensure protection of groundwater such as:</p> <ul style="list-style-type: none"> ▪ Ensuring all fuels and chemicals are stored in bunded areas ▪ Regular pumping out of septic systems



About Pacific Hydro

Founded in Australia in 1992, Pacific Hydro operates a high quality, diversified portfolio of wind, solar and hydro renewable assets in Australia, and has a significant pipeline of renewable projects under development, as well as a growing electricity and gas retail business, Tango Energy. Pacific Hydro is owned by State Power Investment Corporation (SPIC). SPIC is one of the top five power generation groups in China.

