

Defining communications requirements for a new generator

Knowledge type: Network connections

Knowledge category: Technical

Technology: Solar photovoltaic

Key learning

Defining communications requirements between the generation facility and the Network Service Provider (NSP) and Australian Energy Market Operator (AEMO) is a critical part of the grid connection process.

Implications for future projects

It is essential to understand the physical infrastructure required to carry signals and communications between the generation facility and AEMO. The cost of such infrastructure needs to be incorporated in the project financial model and technical specifications need to be developed for the project engineering, procurement and construction contractor.

Knowledge gap

It would be useful if there was information available that broadly defined the existing communications infrastructure for each part of the National Electricity Market and specified the technical requirements for grid communications for various types and sizes of generation facility.

Background

Objectives or project requirements

A significant issue for the Broken Hill Solar Plant was the need for upgrades to communications infrastructure to support both the solar project and the Silverton Wind Farm, which AGL is also developing and which will share the same connection point. Determining the best solution for the solar project required extensive discussion and negotiation with the NSP (TransGrid).

Process undertaken

AGL worked closely with TransGrid to define the existing communications infrastructure and the need for upgrades to communications services. TransGrid identified required upgrades to microwave and fibre optic systems, as well as communications links within existing substations. In total, over 1,700km of communication bearers were needed to provide compliant communication services for both the solar and wind projects. However, AGL and TransGrid agreed on significantly reduced communications requirements for the solar project, which is being built first. Further upgrades will likely be required in the future as part of the wind farm development.

Supporting information

Figure 1 shows a conceptual diagram of the communications assets and services upgrades potentially required to support both the Broken Hill Solar Plant and the proposed Silverton Wind Farm. AGL and TransGrid defined a smaller package of upgrades to support the solar project alone.

