

## Design and engineering



### Supporting the national energy grid

The main component of an energy park is a battery energy storage system (BESS) which is a large version of a rechargeable battery similar to what you might use at home. When the electricity grid is producing an excess of energy – for example, through renewable generation when the sun is shining, or the wind is blowing – some of that excess energy can be captured and stored by grid-scale batteries. At times of increased demand or when renewable energy generation is not available, the battery can discharge stored energy back into the grid to relieve demand pressure and minimise the occurrence of high price events. As a result, energy park facilities are now becoming a common, standard part of most countries' new-energy supply infrastructure.

There will be four 'battery parks' of 250 MW capacity each, fenced separately and available to provide various grid-support functions. Each battery is a single-storey modular unit, similar in size to a 20-foot shipping container. In total, the facility will cover approximately 30

**In order to connect to the national electricity grid, detailed designs must be approved by the market operator AEMO.**

**Following months of iterative refinement of the concept layout, AEMO has approved the concept layout of the switching station infrastructure, but detailed grid modelling will be required to seek grid connection approval.**

hectares of land zoned for industrial use.

The primary electrical components of the Portland Energy Park are:

- Battery units (containers)
- Inverter units (containers)
- Switching infrastructure (transformers)
- Transmission connection (terminal station and 500 kV line)

## Design and engineering (continued)



The design has evolved iteratively to account for site environmental features, safety management and design requirements from the Australian Energy Market Operator (AEMO). This has necessitated acquisition of additional land to accommodate the proposal. Overall, the site is ideal for an energy park site as it has direct access to the existing 500 kV transmission line.

At this stage in the project, only concept layout design has been undertaken, although informed by geotechnical analysis and other technical studies. Detailed design and engineering will be completed after planning approval. Furthermore, grid modelling will be undertaken to support an application to AEMO based

upon final designs. AEMO have already provided its support for the concept layout.

The Portland Energy Park will strengthen grid stability for communities in the region while also offering a storage solution for excess energy generation from renewable generation projects. The project will mark a step-change contribution to Victoria's energy storage targets of at least 2.6 GW by 2030 and 6.3 GW by 2035.

Together, the energy park will allow us to continue utilising clean renewable energy but in a more efficient and sustainable way.

## About Pacific Green

At Pacific Green we specialise in delivering grid-scale smart energy storage solutions from greenfield to operation. We are proud of our record in delivering safe, cutting-edge energy storage solutions, which are benefiting people and the planet.

To learn more about the Portland Energy Park via our project website, scan this QR code:  
[www.pacificgreen.com/aus/projects/portland](http://www.pacificgreen.com/aus/projects/portland)  
or contact us at [portland@pacificgreen.com](mailto:portland@pacificgreen.com)

