



ABOUT

Location: Nambelup WA, Bindjareb Country

Size: 1000ha

Typology: Light Industrial

Status: In operation and development

The Peel Business Park is an agricultural, food, and industrial innovation hub situated 70km south of Perth in the Shire of Murray.

A key feature of the project is a privately owned and operated grid connected renewable energy micro-grid that includes a 1.2 MW solar array, a 2.5 MWh battery system and a 22kV private distribution network. The project provides end users at the precinct with a minimum of 50% renewable energy, delivering an expected saving of around 30% when compared to the available tariff products for businesses who are contestable customers on the South West Interconnected System (SWIS).

Positioned as a 'green industrial park' model, it aims to attract tenants with net zero ambitions and inspire similar projects nationally and globally. Curtin University research activities at Peel are focused on technical, regulatory and governance considerations to enable similar projects.

HIGHLIGHTS

01

The microgrid at the Peel Business Park is one of the first industrial microgrids in Australia, and the first in Western Australia deployed over multiple green titles in WA.

02

Peel Renewable Energy is owned by Zenith Energy who are the licenced retailer for the project. The project has provided additional benefits with the implementation of the private distribution network, which has reduced costs to the state for augmentation of the existing distribution network by an estimated \$60 million.¹

03

Tenants at Peel Business Park benefit from electricity rates which are approximately 30% lower than the business tariffs offered in WA, and up to 50% of the energy utilised on site is sourced from the microgrid system.

KEY RESEARCH QUESTIONS

What are the barriers and opportunities for DER integration across different typologies?

How can the uptake of DER be accelerated across different typologies within net zero precincts?

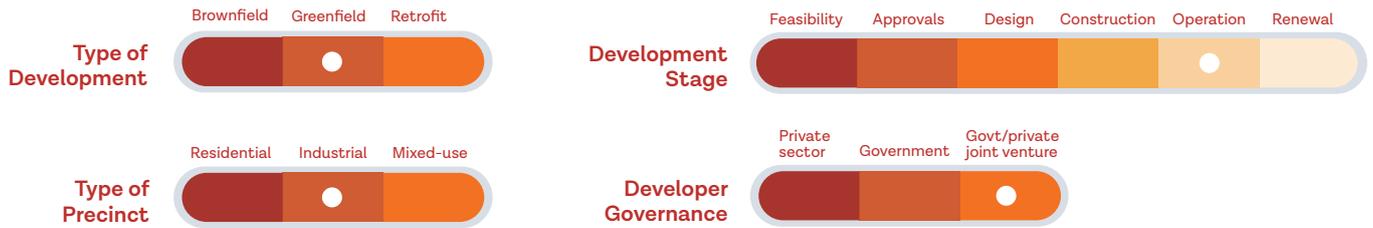
What are the key learnings from the Peel Microgrid to support wider deployment of this model, not just in the South West Interconnected System (SWIS), but also in the National Energy Market (NEM)?

¹ Government of Western Australia (2020) Australian first innovation powering jobs at Peel Business Park.

Image by J Wyld

The preliminary findings set out in this document are part of ongoing research and are not final. No liability is accepted for any actions taken based on them.

CASE STUDY FEATURES OF INTEREST



1. A CULTURE OF SUSTAINABILITY

The microgrid at Peel Business Park fits into the wider context of DevelopmentWA's commitment to shaping low carbon precincts through projects that embed sustainability and innovation. As part of the broader Transform Peel initiative, which includes the Peel Food Zone and Peel Integrated Water Initiative, the Peel Business Park reflects a systemic, cross-sectoral approach to precinct-scale sustainability.



2. AVOIDING LAND CLEARING BY USING CLEARED FARMLAND

The park was developed on previously cleared farmland, avoiding emissions from clearing carbon rich, and biodiverse native vegetation. This preserved nearby carbon sinks and reduced disturbance of habitat. The site's relatively flat topography also limited earthworks, reducing fuel use and soil disruption.

The precinct's 'hub' model consolidates agribusiness activity and enables shared services, transport efficiencies, and circular economy practices.



3. SHIFTING TO LOWER CARBON EMISSIONS IN DEVELOPMENT PROCESSES

Peel Business Park adopted low carbon strategies across planning and construction including using recycled road base and other low-embodied carbon materials; powering construction activities with the microgrid, and ensuring contractors followed sustainable construction protocols, such as the minimisation of waste.

The park was also designed to support shared water, energy, and waste services; future industrial symbiosis and circular economy networks, and co-location of complementary industries (e.g., farming, processing, logistics). These integrated features reduce both embodied and operational carbon over the precinct's lifecycle.



4. IMPROVING PERFORMANCE WITH LOWER CARBON TECHNOLOGIES

Peel Business Park hosts Australia's first renewable-powered industrial microgrid, managed by Peel Renewable Energy. It includes:

- A 1.2 MW solar array and 2.5 MWh battery system
- Embedded 22kV private distribution network
- Grid connection via the South West Integrated System

As business activity and energy consumption increase at the site, the intention is for additional rooftop solar PV installations. Businesses will be able to lease their roof space to Peel Renewable Energy, thus enabling businesses to earn an extra revenue stream, while receiving a guaranteed 30 percent reduction on their electricity costs (in comparison to business tariffs).

As the centrepiece of the Peel Food Zone, the park is designed to attract and support:

- Agrifood processors and clean-tech industries
- Value-added production and waste reuse
- Circular economy food production models (e.g., aquaponics, vertical farming)

The location of Peel Business Park near major transport routes and ports also enhances supply chain efficiency, reducing emissions through better logistics and co-location.

INITIAL LEARNINGS

DEVELOPMENT STAGE	PRELIMINARY INSIGHTS FROM THE CASE STUDY
Overall	<ul style="list-style-type: none"> The Peel microgrid has met its aims of lowering carbon emissions, providing economic advantage for businesses operating within the park, and avoiding a costly network upgrade for the state.
Feasibility/ Business Case	<ul style="list-style-type: none"> The business case for the microgrid was justified on multiple grounds: a private distribution network was feasible as it avoided expensive network augmentation that would have been required due to network constraints; the ability of the microgrid to deliver ~30% savings on energy for businesses in the park; allowing early occupancy for businesses in the park; and supporting sustainability with over 50% of energy provided from the microgrid.
Approvals/ Planning	<ul style="list-style-type: none"> Early planning for the solar and battery microgrid with a private distribution network and coordinated regulatory approvals can deliver low cost, low emission power to industrial precincts. However, there are challenges that emerged when connecting the microgrid assets over public land (easements). Electricity connection delays for developments can also occur if there are network constraints in the area. Future developments should seek approval as early as possible, integrate energy infrastructure from the outset, streamline licensing pathways, and support precinct-scale renewables through planning and incentive frameworks.
Design	<ul style="list-style-type: none"> The precinct was designed for industry development needing sustainable and reliable power. Environmental constraints informed the site layout and the precinct was spatially integrated into the broader Peel regional development vision.
Construction	<ul style="list-style-type: none"> Essential infrastructure was delivered upfront (i.e. roads, water, power conduits, sewer, NBN). The microgrid required dedicated easements and substation sites. Fast deployment was supported by private procurement. Early energy infrastructure reduced dependency on the main grid (which could not meet anticipated demand due to network constraints).
Operation	<ul style="list-style-type: none"> Interconnecting DER assets across the park has required complex easements which may be avoided by appropriate application of the (WA) Energy Operator Act.

FURTHER INFORMATION

[Pathways to Net Zero Precincts Website – Peel Business Park Case Study](#)

[DevelopmentWA Peel Business Park Website](#)

[Peel Renewable Energy Website](#)

[Government of Western Australia Peel Business Park Website](#)



Curtin's support includes the CISCO Curtin Centre for Future Networks

Support for Tranche 2 Case Studies includes The Department of Transport and Planning, Victoria State Government; The Centre for New Energy Technologies (C4NET); Department for Environment and Water (DEW), South Australia; City of Adelaide; Power Tech Energy Pty Ltd; and Sustainable Energy Commitment Pty Ltd.

Image by J Wyld

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