

Renewable Energy in the Western Downs

The Western Downs is known as the Energy Capital of Queensland, and is now emerging as the Energy Capital of Australia.

This reputation is due to strong investment over the past 15 years by the Energy Production Industry (EPI), into large-scale resource industry developments in coal seam gas (CSG) and coal. More recently renewable energy farms have invested in the region with multiple solar and wind energy farms currently either under construction, or approved for construction. Gas and coal-fired power stations also feature prominently in the region.

Economic growth in the Western Downs clearly shows that the energy industry effectively co-exists with local industries, while improving communities by providing jobs, infrastructure and improved services. ¹

As at June 2018, the Gross Regional Product (GRP) of the Western Downs region has grown by 26.3% over a twelve-month period to reach \$4 billion. ²

“The Western Downs is blessed with the full range of energy sources and its renewable energy generation consolidates Queensland’s role as the heavy lifter in the National Electricity Market.”

- Ian Macfarlane, CEO, Queensland Resources Council

The Queensland Major Projects Pipeline Report, lists gas developments and renewables as the sectors driving growth in the Western Downs region. ³

RENEWABLE ENERGY INDUSTRY:

According to the Clean Energy Australia Report, as at 2018, Queensland renewables make up 9.5% of Renewable Energy Penetration across Australian states. ⁴

As at January 2019, the Western Downs contributes towards this percentage with more than \$4 billion in renewable energy projects in the pipeline. ⁵

Renewable energy projects offer short and long-term work within the region, with a range of industries and businesses involved. This creates a strong flow-on effect in the supply chain, economy and local communities.

Western Downs Renewable Energy Projects:

- **Two solar farms underway**
- **18 approved and awaiting commencement**
- **One wind farm underway**
- **and another approved and slated to begin in early 2020 ⁶**

As at June 2019, there are 22 renewables projects in the pipeline in the Western Downs, with a combined capacity of approximately 5,303 megawatts (MW). Ten of the solar projects combined are worth \$3.835 billion in investment, with nine to be announced. Coopers Gap Wind Farm represents an \$850 million investment. ^{5 6}

ECONOMIC INFRASTRUCTURE POWER:

Due to the emergence of the coal seam gas industry since 2012, the Western Downs region has seen significant power infrastructure upgrades. Legacy infrastructure from resources provides an ideal network for renewables developments.

‘Renewable Energy is an integral part of the Western Downs future economy creating short- and long-term employment opportunities for our region.’

**- Paul McVeigh,
Mayor Western Downs
Regional Council**

Electricity transmission services provider, Powerlink Queensland, connects renewable energy farms across the region into the Queensland transmission network using existing, and where required, expanding on transmission networks and substations.

This existing infrastructure supports the connection of non-synchronous generation of electricity into the Queensland transmission network. High voltage transmission lines transport electricity from generators to electricity distributors, who then deliver it via the National Energy Grid to homes and businesses on lower voltage poles and wires. Powerlink’s Generation Capacity Guide (dated December 2018), indicated opportunity of up to 200MW non-synchronous supportable generation in the Surat area. ⁸ Resource industry legacy infrastructure also provides opportunities for other businesses across the Western Downs through lower infrastructure connection charges and accessibility.



RENEWABLES IN THE WESTERN DOWNS:

SOLAR ENERGY OVERVIEW:

Western Downs offers suitable topography, environmental conditions and legacy infrastructure for solar farms. The suitability of the region as a location is evidenced by two farms currently under construction, with 18 approved and awaiting commencement.

Solar farms are distinguished from standard commercial solar installations by their size, location and purpose; solar farms are generally in the megawatt-scale (as opposed to kilowatt-scale), are ground-mounted as opposed to roof mounted, and will either be built to sell energy into the grid or to a designated purchaser – usually a heavy energy user or electricity retailer.

Commercial solar farms have a power purchase agreement (PPA) with either another entity such as a large energy consumer or electricity retailer or sell energy into the National Energy Grid.

SOLAR PROJECTS UNDERWAY:

- One of those nearing completion is APA's Darling Downs Solar Farm which is a 110 MW photovoltaic solar farm near Dalby in the Western Downs. The development is underpinned by an agreement with Origin Energy for the purchase of the energy produced and the Large-scale Renewable Generation Certifications generated by the solar farm until December 2030. The development is also supported by a \$20 million grant from the Australian Government through the Australian Renewable Energy Agency (ARENA) Advancing Renewables Program. The solar farm will have close to 430,000 solar panels covering approximately 250 hectares and will connect into Powerlink's existing Braemar Substation. The plant commenced commercial operation in January 2019 with site finishing and rehabilitation works to be completed in the second half of 2019.⁷

- The Impact Investment Group (IIG) is developing the \$32 million, 19.9MW, photovoltaic, Chinchilla Solar Farm. It will be located on 251 hectares of land, west of Chinchilla in the Western Downs, on the existing 132 kV Tarong / Chinchilla overhead transmission line. With an expected electricity generation (first year) of 41,940 megawatt-hour (MWh), the solar farm will provide clean electricity for the equivalent of 6,700 average Australian homes.⁸

APPROVED AND AWAITING COMMENCEMENT:

- Equis Energy (Australia) Pty Ltd.'s \$1.5b **Wandoan South Solar Farm** in Wooleebee

- RES Australian PTY LTD C/Icubed Consulting's \$50m **Renewable Energy Facility** in Dalby
- APA's \$400m **Beelbee Solar Farm** at Beelbee
- Luminous Energy Pty Ltd's \$600m **Public Utility Solar Farm** in Hookwood
- Yellow Solar and Tilt Renewables' \$500m **The Western Downs Solar Energy Farm** in Hopeland
- Everleigh Solar Park Pty Ltd's **Everleigh Solar Park** at Crossroads
- Edenvale Solar Park Pty Ltd's **Edenvale Solar Park** at Crossroads
- X-Elio Australia Pty Ltd's **Cameby Solar Farm** in Cameby
- Shell's **Shell Solar Project** in Wooleebee
- FRV (Fotowatio Renewable Ventures) \$60m **FRV – Dalby Solar Farm** in Dalby
- First Solar Australia Pty Ltd's \$200m **Chinchilla Solar Farm** in Burncluith
- Neoen Australia's **The Western Downs Green Power Hub** in Hopeland
- Engie Renewables Australia's **Engie Solar Farm** in Hookwood
- Daystar Energy's **Daystar Energy Solar Farm** in Columboola
- Ubergy PTY Ltd's **Ubergy Solar Farm** in Baking Board
- juwi Renewable Energy Pty Ltd's **Solar Farm** in Dulacca
- X-Elio Australia Pty Ltd's **Greenfield construction of solar farm** at Jimbour East
- juwi Renewable Energy Pty Ltd's **juwi Renewable Energy Solar Farm** In Chinchilla⁶

“The Western Downs is ideal for solar power due to the combination of available land, solar resource and strong electricity grid connection. The Western Downs Regional council's support for renewable energy has been crucial to our success.”

- Sam Pearce, APA, Group Executive Networks and Power



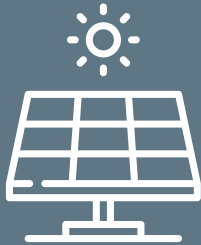
Chinchilla Solar Farm

Investment: \$32 million

Storage: 19.9MW

Clean Electricity: to approx.

6,700 average homes
(under construction)



Darling Downs Solar Farm

Storage: 110MW

Including: 430,000 solar panels
(operational)

Coopers Gap Wind Farm

Investment: \$850 million

Storage: 453MW

Clean Electricity: to approx.

264,000 average homes.
(to be fully operational mid 2020)



Dulacca Wind/Solar Farm

Investment: \$450 million

Storage: 240MW

(to be constructed 2020)

Information sourced directly from
organisations or business websites.

WIND ENERGY OVERVIEW:

According to Energy Australia, wind turbines are highly cost-effective once installed. Grouped together into wind farms to collect the energy and send it to the electrical grid, wind turbines are fast becoming one of Australia's most abundant sources of clean, renewable energy. Wind power works by converting the kinetic energy of the wind into electrical energy using a wind turbine. A wind turbine is made up of four main parts: the base, tower, generator and blades (or propellers), which catch the wind's currents.

The Western Downs region currently has one wind farm (Coopers Gap Wind Farm), under construction, due to be fully operational mid 2020, and another (Dulacca Wind Farm), approved and slated to begin in early 2020.⁵

WIND PROJECTS UNDERWAY:

- AGL's \$850 million Coopers Gap Wind Farm will be one of Australia's largest windfarms. It is located on 36 properties near Cooranga North, between Dalby and Kingaroy. The project footprint is approximately 10,200 hectares of freehold agricultural land, with wind towers and associated infrastructure using less than 2% of the area. It is expected to have a capacity of up to 453MW and could produce around 1,510,000MWh of renewable energy – powering approximately 264,000 average Australian homes to Queensland's power grid by 2020. The wind farm will be connected to a Powerlink substation along the new Western Downs to Halys 275kV transmission line.⁹

APPROVED AND AWAITING COMMENCEMENT:

- The RES Group's 240MW Dulacca Wind Farm has been granted development approval by the State Government following successful completion of environmental impact surveys. The proposal is for a wind, and battery storage energy facility which will consist of up to 56 wind turbines (each up to 250m in height), civil and earth works and battery storage. The project will offer a community fund for local good causes with a value of \$1.25 million over the lifetime of the project.¹⁰

"This project has been a great achievement and working within this dynamic community has been fantastic. We are contributing to economic development but beyond that we are also contributing to the local social fabric of a region that is in growth."

*- Brian McEvoy, Project Director,
Coopers Gap Wind Farm*



References

¹ - Energy Information Australia

² - economy.id

³ - Queensland Major Projects Pipeline Report

⁴ - Clean Energy Australia

⁵ - Western Downs Development Status Report

⁶ - Western Downs Regional Council

⁷ - APA

⁸ - Impact Investment Group

⁹ - AGL

¹⁰ - Dulacca Renewable Energy Project

Coopers Gap Wind Farm is owned by Powering Australian Renewables Fund (PARF). Image credit: [unreadable]

OPPORTUNITY:

The Western Downs offers many strengths to compliment the benefits of the ongoing contribution of the energy production Industry. These include; employment opportunities, land availability and affordability, livability, digital connectivity, health services, retail and ease of commercial development. All of which stimulate and support economic and industry growth throughout the region.

Western Downs Regional Council is open to business and inviting major opportunity into the region.

The Council's proactive approach to development and developers, through an award-winning, streamlined Planning Scheme, minimises red tape and increases certainty, shortens timelines and reduces risk.

The continued strength of traditional agricultural industries, construction, manufacturing and other support industries throughout the region, show the benefits of working alongside energy producers to maximise production outcomes.

The Western Downs has an established construction, manufacturing and labour force supply-chain. Linking services and suppliers to industry and consumers. Economic development businesses in the region, such as the Chambers of Commerce and the Toowoomba and Surat Basin Enterprise (TSBE) group, contribute to supply chain strength by linking businesses with opportunities to create opportunity and diversity.

ECONOMIC INFRASTRUCTURE – FREIGHT AND TRANSPORT:

In the Western Downs, transport infrastructure is served by road, plane and train. Road access is through the Leichhardt, Moonie, and Warrego Highways, with the Toowoomba Second Range Crossing expected to further reduce freight and transport times to key locations.

The Toowoomba Wellcamp Airport opens export opportunities through Queensland's only dedicated 747-8 International Freighter Service. The rail network transports containerized freight to the Port of Brisbane for export, with imminent rail tunnel upgrades allowing for transport of 'Hi Cube' containers. Rail networks such as the Western Rail Line increase connectivity and provide direct access to the Toowoomba Wellcamp Airport and the Port of Brisbane. The Inland Rail national project will link the Port of Melbourne and the Port of Brisbane by rail, via central-west NSW and Toowoomba.

The information and statistics included in this document are reliant on the accuracy of sources as listed and were accurate as at the time of printing. June 2019.

A SNAPSHOT



UNEMPLOYMENT RATE TRENDING LOWER THAN QLD AVERAGE



A SKILLED AND EXPERIENCED WORKFORCE



GRP: 139.25% INCREASE OVER 15 YEARS



DEVELOPMENT & DEVELOPERS SUPPORTED AND WELCOMED WITH WDRC PLANNING SCHEME



COMPARATIVELY STRONG INDUSTRY SUPPLY CHAINS PER CAPITA OF POPULATION

Energy Capital of Queensland: Resources & Renewables



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