COMPANY CAPABILITY: LARGE POWER TRANSFORMERS

Wilson Transformer Company has become a leading specialist in the delivery of transformer solutions by building superior quality products and delivering responsive services to many satisfied customers. We offer our customers the confidence of proven designs coupled with state of the art manufacturing facilities, robust processes and compliance to international standards.



KEY FEATURES

- > Reliable Performance
- > Custom Design, Manufacturing & **Testing Capability**
- > Whole of Life Value
- > Fast Track Delivery
- > Safety in Design
- > Compliance to International **Standards**



Wilson Transformer Company's Power Transformer Rusiness Unit produces customised power transformers ranging in size from 3MVA up to 550MVA 400kV. These products form a critical part of the electrical infrastructure in the power generation, transmission and sub-transmission networks, ensuring reliable supply of electricity.

Our power transformers are designed and manufactured for each specific customer requirement. Standard proven design methodologies and extensive simulation tools are both used to prove the product design and ensure superior product performance in the field. The products are then manufactured in our state of the art facility with the latest technology equipment, systems and processes incorporating strict quality control gates.

Our manufacturing processes have been continuously improved using LEAN manufacturing methodologies and the capability of our people. To support our

operations, our supplier's quality and delivery performance is critical and requires monitoring continuously. As such, we work closely with our key suppliers to make sure their operations, supply of materials and components also improve our products and solutions.

All transformers are subjected to comprehensive routine and specified type tests, in accordance with the customer's requirements, relevant standards and Company procedures. All high voltage tests are performed in a Faraday cage test laboratory which is electrically and acoustically isolated from the main assembly building.

Test equipment includes impulse generators rated up to 1,600kV and 160kJ for full and chopped wave impulse tests, partial discharge measurement equipment and precise digital instrumentation for accurate measurement of losses.

YOUR REQUIREMENTS

We understand that most customer requirements are different, which is why we pride ourselves on being flexible in our approach. From a comprehensive range of products, services and support to state of the art manufacturing facilities and compliance, we offer our customers the confidence of working with our organisation that has proven itself over 85 years of excellence with many satisfied customers around the world.

WORLD CLASS CAPABILITIES

We have a proven track record of supplying a wide range of transformers across the different sectors within the power industry to our local and global customers, including power utilities, process industries, mining and oil & gas.

In 2012, we became the first Australian business to become a fully qualified global supplier to Chevron. That same year we received a \$21 million purchase order for all power and distribution transformers for the Chevron operated Wheatstone Project in Western Australia, Australia's most significant resource project.

CASE STUDIES

Manapouri Power Station, New Zealand

(7 x 135MVA, 220/13.8kV power transformers)



The new 135 MVA 220/13.8 kV power transformers were designed and manufactured in WTC's power transformer plant in Melbourne. A special attention was paid to the physical dimensions of the transformers to meet the delivery constraints, including traveling down a narrow tunnel. In order to reduce the transformer's size and weight, the engineering team came up with the solution to fit a 135MVA winding set into a 105MVA tank.

The project was faced with many other technical challenges to match numerous interface criteria. The existing transformers on site were to be replaced and all mechanical interfaces for the ease of a seamless transition to replace the old with new were to remain untouched.



The existing high voltage oil filled cable boxes, low voltage bus ducting, seismic footings, and cooling pipework were measured during site visits, and the WTC Engineering team was in constant communication with the customer throughout the design process to ensure this was performed without a hitch.

The first unit had been designed and manufactured in a record time - the Factory Acceptance Testing took place fifteen weeks after the contract was signed.

The delivery was scheduled at pre-Christmas time and the original route included a shipment from Port Melbourne to Deepcove. However, it was decided to divert from the original plan due to the vessel delay on its way to Port of Melbourne via Port of Brisbane. To save three days and meet a pre-Christmas delivery, a road transportation to Port of Brisbane had been organised.

The transformers followed the route the original transformers took in the 1960s. First, by track to Brisbane, then by ship via the most challenging part of the journey was getting from Deepcove to the undeground power station on a challenging gavel and inclined road. The transformers were shipped on a part chartered vessel to Deep Cove in the Fiordland National Park (World Heritage site). To preserve the unique marine environment, the Environment Southland representatives were on board throughout the journey in the Sound to ensure all the requirements of a resource consent were met.



Video: https://vimeo.com/248377422

Video: https://vimeo.com/137550889

Yallourn Brown Coal Power Station, Australia

(2 x 225MVA, 230/20kV power transformers)

Energy Australia (previously Tru Energy) required two of the main generator transformers replaced at the Yallourn Power Station whilst maintaining minimal disruption to the generating capacity. The two teams integrated their planning of the installation process working closely together and as a result the project was executed in a streamline manner.



Clyde Wind Farm, the UK

(6 x 120MVA, 275/33kV power transformers)

The Clyde North and Clyde South wind farm is a very remote site with difficult access and subject to extreme weather conditions. The 4 units to Clyde North and 2 units to Clyde South proved to be very challenging, but with careful planning and execution of controls measures, the 6 transformers were installed successfully and have been operating ever since. The 720MVA wind farm was the largest land based renewable project in Europe at the time.



Ararat Wind Farm, Australia

(2 x 170MVA, 132/33kV power transformers)



Ararat Wind Farm is a 240MW onshore wind farm being developed by Renewable Energy Systems (RES). The transformers, procured via a \$4 million contract, are over 8m in length, 4.5m wide and 7m high when fully assembled. The Transformers were installed in the wind farm electrical substation to convert the 33 kV farm electrical collector network to 132 kV for transmission to the electricity grid at Elmhurst.

Euro Tunnel, the UK

(1 x 100MVA, 132/45kV power transformers)



Electrical power supplying the tunnels, drainage pumps, lighting and the trains, is provided by substations on each side of the Channel. In the event of loss of power from one side, the entire system can be supplied from the other side. Wilson Transformer Company has supplied the trackside transformer on the United Kingdom side of the tunnel.

LARGE TRANSFORMER REFERENCE LIST (Selected projects)

Generation

Year	MVA	kV	Project
2018	150	132/33	Rollingstone Solar Farm, Aus (O)*
2017	2 x 125	132/33	Bungala Solar Farm, Aus
2017	100	66/22	Karadoc Solar Farm, Aus
2017	100	66/22	Yatpool Solar Farm, Aus
2017	145	132/33	Bodangora Wind Farm, Aus (O)
2017	150	230/66	Waubra Wind Farm, Australia (O)
2017	2 x 225	220/33	Murra Warra Wind Farm, Aus(O)
2017	135	132/33	Metz Solar Farm, Aus (O)
2016	2 x 190	330/33	Sapphire Wind Farm, Aus
2016	7 x 135	220/13.8	Manapouri Power Station, NZ
2016	100	235/13.8	Gowrie Park Substation, Aus
2015	183	132/33/1	White Rock Wind Farm, Aus
2012	2 x 225	230/20	Yallourn Power Station, Aus
2004	150	230/67.5/22.5	Portland Wind Farm, Aus
2003	162	132/14.5	Pinjarra Cogeneration, Aus

Transmission and Distribution Networks

Year	MVA	kV	Project
2017	120	132/33/11	Camillia Substation, Aus
2016	150	220/66/11	Thomastown Station, Aus
2015	2 x 225	220/66/11	Deer Park Terminal Station, Aus
2015	250	220/132/29.5	Muja Power Station, Aus
2015	120	132/33/11	Ausgrid, Aus
2012	155	220/66	Richmond Substation, Aus
2012	2 x 150	230/67.5/22.5	Bendigo and Glenrowan Terminal Stations, Aus
2012	550	330/132/22	Muja Power Substation, Aus
2010	3 x 120	132/33/11	Guildford Substation, Aus
2010	150	220/66/22	South Morang Substation, Aus
2007	7 x 120	132/33/11	Kooragang Substation, Aus
2004	120	110/33	Ausnet, Aus
2003	4 x 200	220/110	Tas Networks, Aus
1997	240	275/132/33	TNB, Malaysia

Industrial Application

Year	MVA	kV	Project
2017	170	220/40.4/11	Bell Bay Aluminium, Aus (O)
2015	100	132/33	Newcrest Mining, Aus
2014	5 x 93.4	66/1.012	Tomago Aluminium, Aus
2013	360	33/33	Aluminium Smelter, Alcoa, Aus
2013	4 x 100	220/66-33	Roy Hill, Aus
2007	135	22/22	Aluminium Smelter, Alcoa, Aus
2003	95	33	PT Inco, Indonesia

(O)* - ordered

WHERE WE ARE



CONTACT US

Wilson Transformer Company

Corporate Office

310 Springvale Road (PO Box 5) Glen Waverley, Vic 3150, Australia P: +61 (0) 3 9560 0411 F: +61 (0) 3 9560 0499 E: corporate@wtc.com.au

Power Transformer Business Unit

310 Springvale Road (PO Box 5) Glen Waverley, Vic 3150, Australia P: +61 (0) 3 9560 0411 F: +61 (0) 3 9560 0599 E: powersales@wtc.com.au

Distribution Transformer Business Unit

10 Moloney Drive (PO Box 809) Wodonga, Vic 3689, Australia P: +61 (0) 2 6024 5944 F: +61 (0) 2 6024 7981 E: distsales@wtc.com.au

Singapore Sales Office and Support

E: seasiasales@wtc.com.au

New Zealand Sales and Support

E: nzsales@wtc.com.au

United Kingdom Sales and Support

E: uksales@wtc.com.au

For more contact details, please refer to the CONTACT US page on our website.

