



Delivering Quality, Performance, Reliability, Security and Savings

Reliable Renewables: Wind Solutions

EL TOQUI WIND FARM Chile, South America

Customer: NYRSTAR

Wind Turbine: 6 Vergnet GEV MP-C, 230 kW,
30m rotor diameter, 55m hub height

Total power: 1.4 MW

Commissioned: 2010

Operations and Maintenance: NYRSTAR



El Toqui Wind Farm - Chile

Vergnet GEV MP Wind Turbines Deliver Energy and Cost Savings for Nyrstar

Nyrstar is an integrated mining and metals business with an underground, poly-metallic mine located in El Toqui, Chile. Operating since 1983, the mine produces 84% of Chile's Zinc and employs 417 employees onsite. Like many mining locations, the El Toqui power system is isolated from the regional grid system and previously relied on five diesel gensets and two hydraulic turbines for power generation.

A Hybrid Approach – Investing in Wind Energy

Due to the high costs associated with operating the diesel gensets, in 2010 Nyrstar invested in a small wind farm as an additional power source. The wind farm comprises six Vergnet GEV MP wind turbines, each generating 0.23 MW.

With a rapid project delivery time of only eight months from initiation to commissioning and closure, and official registration and authorisation granted within two months, El Toqui was quickly benefitted from the additional resource of a wind farm to diversify power supply and contribute clean, renewable energy to the site.

With over 25 years' experience in delivering projects within isolated environments with extreme climatic conditions and limited electricity infrastructure, Vergnet was able to adapt project specifications to meet the requirements of the site. This included resizing and reinforcing the turbine blades and lowering the range of operation to ensure optimal performance in a site exposed to high wind speeds. El Toqui personnel has been trained by the Vergnet team to maintain and repair the turbines.

Energy and Cost Savings with Vergnet Wind Turbines

In 2014, total power generation from diesel, hydraulic and wind farm sources reached 42.24 GWh at a total cost of \$6.3M. In this year, the average cost per MWh of all combined power sources was \$148.1/MWh. Heavily reliant on diesel as the primary power source (contributing to 54.3% of total generated power), the average cost per MWh was significantly above average, at \$254.5/MWh and a total cost of £5.8M. The wind farm generated 3.4 GWh of power at a cost of \$74K and an average cost of \$21.6/MWh, contributing to 8.1% of total onsite power generation and representing a significant cost saving with clean, renewable energy solutions.

Making a Difference at El Toqui

“Having a reliable, secure system in place to ensure guaranteed power supply for our large scale mining operation is critical, particularly in such a remote location without grid connection. Since investing in a wind farm with Vergnet, we are able to maximise generating capacity and benefit from significant cost savings with renewable energy. We estimate that over 7.7M litres of diesel will be saved each year from renewables integration, with the wind farm contributing to a saving of over 1.2M litres of diesel per year. Additional savings are also made through reduced maintenance costs and extended time between overhauls, offering even greater value for money.”

Tom Olsen, General Manager, Nyrstar Chile – Energy & Mines Santiago – May 15

Reliable Renewables

Vergnet is a global renewable energy solutions company with a successful track record in providing high performance, reliable and affordable clean energy solutions for companies around the world.

Advanced renewable solutions, encompassing wind, solar PV and hybrid technology, make Vergnet a recognised partner of choice for mining companies throughout the world.

The company leverages a 25 year heritage in delivering power quality, performance and availability of supply in remote, isolated environments with extreme climatic conditions and limited electricity infrastructure.



6 GEV MP C 230 kW- El Toqui Wind Farm - Chile

With a strong focus on design, manufacturing and engineering innovation, Vergnet provides adaptable renewable solutions that are highly customised to both the local environment and the specific needs of mining companies. Vergnet’s uniquely designed technology is adaptable for grid-connected as well as off-grid operations and has been developed specifically for extreme weather conditions providing reliable, efficient and scalable energy solutions. Vergnet operates in over 40 countries and has 166 employees in 10 offices.

Developing adaptable and affordable solutions that cut energy costs is at the heart of everything we do.