



## ACCELERATING DECARBONISATION IN SOUTH AMERICA WITH ENERGY STORAGE SOLUTIONS

Providing stability and flexibility for one of the largest power generation companies in Chile

More than a quarter of South America's energy is provided by renewable sources, making it one of the world's most dynamic markets. Chile has emerged as a leader in clean power production with remarkable natural resources and ambitious goals to reach carbon neutrality by 2050. As Chile continues to integrate renewable assets onto its energy grid, investing in flexible assets like energy storage becomes increasingly important for grid stability.

### The path to net-zero emissions

According to a 2021 report by Wärtsilä, "Front-Loading Net Zero," achieving a 100 percent carbon neutral power system in Chile before 2050 is possible with the buildout of renewable energy and short- and long-term energy storage. As coal-fired power plants in Chile are phased out by 2040 and more renewable energy is integrated, battery storage systems will play an instrumental role in maintaining grid reliability.

Wärtsilä is providing Colbun, one of the largest power generation companies in Chile, with an 8 MW / 32 MWh energy storage system to accelerate decarbonisation in the region. The battery system will be co-located with Colbun's 230 MWp Diego De Almagro solar PV facility in the Atacama Desert, an area well-known for its solar radiation. As Colbun's first energy storage system, it will allow the power generation company to integrate additional renewable energy capacity and achieve net-zero emissions. It is also Wärtsilä's first energy storage project in South America.

**"Chile has become a leader in renewable energy and the country has one of the most ambitious and economical decarbonisation plans in the world. We are excited to enter the Chilean market to assist Colbun and others to capitalise on the opportunity to realise a 100 percent carbon neutral energy system with market-leading energy storage technologies within the next few decades."**

*Andrew Tang,  
Vice President of Energy Storage  
& Optimisation, Wärtsilä*

THE CHALLENGE	WÄRTSILÄ'S SOLUTION	BENEFIT
<ul style="list-style-type: none"> <li>Facilitate Colbun's carbon neutrality by 2050 goal.</li> <li>Reduce constraints on the transmission system from Colbun's new 230 MWp solar facility.</li> <li>Promote flexibility and ancillary services to provide grid stability as Chile's coal-powered plants are decommissioned over the next few decades.</li> </ul>	<ul style="list-style-type: none"> <li>Integrated Colbun's first energy storage system for the power generation company's growing portfolio of solar energy assets.</li> <li>Optimised the solar-plus-storage facility with Wärtsilä's GEMS Digital Energy Platform, increasing the value of both assets.</li> </ul>	<ul style="list-style-type: none"> <li>Greater flexibility and network capacity for additional renewable energy integration.</li> <li>Reliable energy supply during peak periods for 80,000 households.</li> <li>Prevention of solar energy curtailment and revenue loss.</li> </ul>

### Addressing system constraints

By incorporating energy storage, Colbun can contribute to renewable energy intermittency, or fluctuations in power production, while capturing the full value of its growing portfolio of renewable energy sources.

The energy storage system will proactively address constraints on the transmission system from the new solar facility and allow Colbun to shift excess energy production during day to meet demand at night to avoid curtailment, further improving revenues for the company. The system will provide frequency response and firm capacity to ensure adequate energy supply during peak periods for an estimated 80,000 homes in Chile.

### Optimisation from energy management systems

The Diego De Almagro storage facility includes Wärtsilä's GridSolv Quantum, a fully integrated, modular and compact energy storage system managed by Wärtsilä's GEMS Digital Energy Platform. GEMS is a sophisticated energy management system that co-optimises the utilisation of the energy storage system and the solar PV facility. Through machine learning and data analytics, GEMS determines the most economical periods to dispatch energy to and from the energy storage system, increasing the value of both assets.

### Facilitating the energy transition

Wärtsilä has modelled that 3.3 GW of flexible energy storage is needed to economically accomplish coal phase-out in Chile by 2040. With the Diego De Almagro storage facility, Wärtsilä is continuing its mission to facilitate a 100 percent renewable energy future by providing Colbun with the needed flexibility for the clean energy transition.

**SITE SIZE:** 8 MW / 32 MWh

**SITE LOCATION:**  
Atacama Desert, Chile

**APPLICATIONS:** Renewables+

**SCOPE OF SERVICES:**  
Engineering equipment delivery (EEQ)

**DELIVERY:** 2022

### RELATED RESOURCES

[Wärtsilä enters South American energy storage market with supply of 8 MW / 32 MWh energy storage system the leading Chilean power generation company Colbun to accelerate decarbonisation.](#)

[Front-Loading Net Zero Report](#)

[wartsila.com/energy](https://wartsila.com/energy)

