Windsor Energy

Project Review

Woolworks Electrode Boiler - Timaru, New Zealand

8MW$_{th}$ Electrode Boiler

Client:	Woolworks
Location:	Washdyke, Timaru, New Zealand
First Steam:	Q1 2023

Background

Woolworks NZ Limited operates the world's largest wool processing facility in New Zealand. With their sites in Napier and Timaru they handle approximately 106,000 tones of wool which is 76% of all wool grown in NZ. Woolworks has been investing in modernising their Washdyke site, and as part of their sustainability strategy they are reducing fossil fuel use by replacing the coal fired boiler at Timaru with a new boiler powered by hydroelectricity.

This project was made possible with co-funding from the Energy Efficiency and Conservation Authority's (EECA), in the form of the Government Investment in Decarbonising Industry (GIDI) fund, where Woolworks obtained funding for a brand new electrode boiler, a high temperature heat pump, and overall energy efficiency measures to reduce energy demand. These projects are helping Woolworks ensure environmental sustainability stays at the core of their operating practices.

The Solution

Woolworks awarded Windsor the Electrode Boiler contract where we offered an ETSH25Mi model from our technology partners in Sweden. Windsor took on engineering the integration with ancillary equipment and structures and also ensured compliance with all New Zealand codes and regulations. The scope includes:

- 8MW Electrode Steam Boiler (10Barg operating);
- Duty and standby circulation pumps and associated instrumentation for operation;
- Windsor designed 10m³ spray type deaerator;
- Feedwater system with duty and standby feedpumps with VSDs;
- Steam lines to integrate into Woolworks process infrastructure;
- State of the art chemical dosing and analysing station (vital for maintaining high performance of an electrode boiler);
- Boiler control panel and MCC system;
- Blowdown system with blowdown tank;
- Boiler structure, platforms and galleries;

The boiler received final checks in the Windsor workshop at the end of 2022 and had first steam on site in February 2023.

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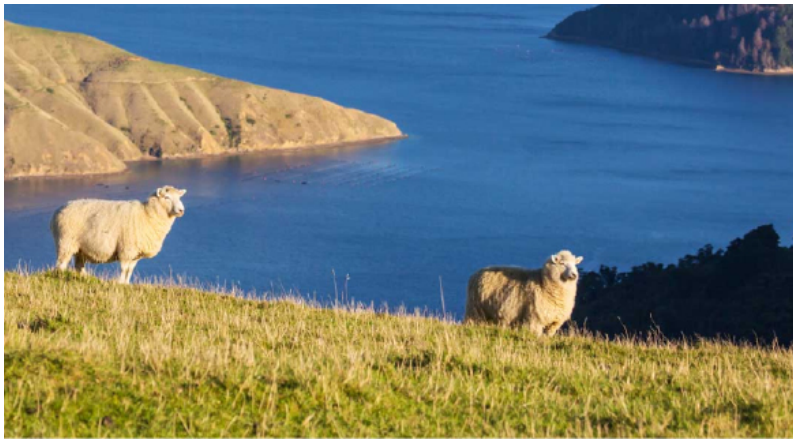
Why Windsor Energy?

As a trusted provider of energy plant and services in New Zealand and Australia, Windsor Energy offered the following advantages:

- Extensive installed base of heat plants in New Zealand and worldwide for a range of industrial clients.
- Project team experienced in the practical details of designing a variety of boiler types.
- Our electrode boiler technology partners Elpanneteknik are industrial leaders in high voltage electrode boilers and have been installing plants worldwide since the 1980s.
- Modular plant package, optimised for long-distance transport of components, and efficient, safe assembly at destination.
- Innovative plant design for high efficiency, simple operation, high availability and low overall cost of ownership.

Project Name	Woolworks Electrode Boiler
Boiler Type	Electrode Steam Boiler
Date Installed	2022
Thermal Capacity	8 MW
Process Fluid	Saturated Steam
Energy Source	Hydroelectricity
Steam Output	10,760 kg/h
Supply Pressure	10 Barg
Thermal Efficiency	99.9%
Turn Down	25:1



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