Cúil Dídin Nursing Care Facility

Renewable Hot Water System

sirus

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Domestic Hot Water (DHW) is an essential resource in the effective operation of a large residential care facility. Large volumes of hot water are consumed daily in the laundry facility, kitchens and in the care of residents. Security of hot water supply is therefore essential.

The national electricity and gas networks are the most secure means of distributing energy throughout the country. Although electricity lines run the length and breadth of the country, the same cannot be said of gas pipelines. Locations that are not connected to the national gas network, such as Tralee in county Kerry, must find alternative fuels for heat generation. Previously, all of Cúil Didin's DHW needs were supplied by a Liquefied Petroleum Gas fired boiler.

Management in Cúil Dídin were not satisfied that reliance on a fuel, such as LPG, which must be delivered to site by road haulage, was providing them with sufficient security of supply. Sirus were able to offer a solution that was more energy efficient, more cost effective and provided greater security of hot water supply.

Sirus provided Cúil Dídin with a turnkey renewable heat pump solution. Sirus supplied and installed a transcritical CO2 Heat Pump Water Heater capable of producing 2,500 litres per night at 90°C. The heat pump, which is only operated during off-peak electricity hours, produces sufficient high temperature water to meet demand 24-hours per day. The high temperature water is stored in a dedicated storage vessel and is drawn off as required. The hot water is mixed down to the required temperature for distribution to specific areas in the building, such as the care facility or kitchens.

Transcritical CO2 heat pumps can operate in Irish ambient conditions with seasonal efficiency factors of between SPF 3.0 to 4.0. The high operating efficiency of the heat pump in conjunction with operation during off-peak electricity will result in cost savings for Cúil Dídin in the region of 70-80%.

Sirus Group provided Cúil Dídin with a turnkey solution for the installation of the transcritical CO2 heat pump water heating system: The overall heat pump system design, the mechanical and electrical installation of the heat pump system, the BMS and Remote Energy Monitoring system.

The Transcritical CO2 heat pump water heating system is expected to reduce O'Donovan's Hotels annual operating DHW costs of between 70-80%.

CLIENT
Cúil Dídin Residential and Nursing Care Facility

LOCATION
Tralee, Co. Kerry, Ireland

SERVICES PROVIDED
Initial Energy review;
Mechanical and Electrical Installation of 25 KW transcritical heat pump water heating system,
BMS Design, installation and Commissioning;
Remote Monitoring by Sirus Energy Bureau;
Project design;
Final Commissioning.

VALUE OF SERVICE
€55,000

DURATION
Nov. 2010 to Jan. 2011

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PARTNERS
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