

Shelbourne Plaza Apartments

Apartment Block District Heating Scheme

Main CHP plant indicators

Heat capacity (total)	kW _{th}	25 to 29.6 (if fully condensing)
Electrical capacity (total)	kW _{el}	11
Technology	Gas engine driven Micro CHP	
No. of units	2	
Manufacturer	SenerTec GmbH	
Type of Fuel	Natural Gas	
Heat: yearly generation	MWh	175
Electricity: yearly generation	MWh	77
Year of construction	2007	
Total investment costs	EUR	45,000
Financing	Own funds and SEAI grant	
State support	Grant from SEAI for site's inclusion in a Commercial Scale micro CHP trial: 21,000 €	
Return of investment (payback period)	Years	n. a.
Location	Dublin, Ireland	

Picture



General description of the case

Centralised plant-room feeding 78 apartments on a district heating scheme. The heating system consists of two 440 kW boilers and two 5.5 kW Dachs micro CHP units manufactured by SenerTec and supplied by their partner in Ireland, Kinviro Limited. The CHP units were sized to cover the base heat load of the system and are coupled to a large buffer tank to store heat in times when the apartments are unoccupied i.e. outside work hours. The electrical output of the CHP units is used to reduce the landlord electrical loads.

Success factors

This was the first time in Ireland that CHP was incorporated into district heating for apartments and became a template for future similar schemes. There have since been commissioned a number of other projects in the Dublin area that have used the same principal. By using micro CHP units in such schemes, apartment blocks can be brought into compliance with current building energy performance regulations.

The performance of the CHP units has achieved expectations with hours run consistently exceeding 6000 hours per annum.

Main barriers

The main barrier to overcome in this project was the argument for gas fired CHP and boiler solution over biomass. However, after due consideration, a gas fired solution was the preferred option given the space constraints. No additional space was required for the CHP units as they were accommodated in the boiler room.

In any CHP installation in Ireland, the principal barrier to overcome is the payback period, but this project was in receipt of state funding so the payback was acceptable.

Conclusions

The main driver for investment in this project was the availability of state support (in return for being included in a micro CHP trial) thereby reducing the payback period. In order to overcome the issues of payback, future supports for commercial scale micro CHP in Ireland should be sustainable and predictable such as:

- 5 c/kWh generation tariff,
- 7 c/kWh feed in tariff,
- Full carbon tax relief in line with other forms of power generation.