# King's Cross
# London, UNITED KINGDOM

Co-funded by the Intelligent Energy Europe Programme of the European Union

# King's Cross

## District Heating System

## Main CHP project indicators

| | | |
|---|---|---|
| Heat capacity (total) | $kW_{th}$ | 1864 |
| Electrical capacity (total) | $kW_{el}$ | 2000 |
| Technology | Motor engine | |
| No. of units | 1 (of 3) | |
| Manufacturer | GE Jenbacher / Clarke Energy | |
| Type of Fuel | Natural Gas | |
| Heat: yearly generation | MWh | 14,912 |
| Electricity: yearly generation | MWh | 16,000 |
| Year of construction | 2012 | |
| Total investment costs | £ | 917,000* |
| Financing | GE Capital provided finance | |
| State support | N/A | |
| Return of investment (payback period) | Years | Not known at this stage |
| Location | London, UK | |

**: scope supplied by Clarke Energy not complete scheme*

## Picture

## General description of the case

A GE Jenbacher engine CHP will provide heat for the District Heating System (DHS) of King's Cross. All of the 70 buildings at King's Cross, from the University of Arts to the Camden Council building, BNP Paribas Real Estate's new offices and the Great Northern Hotel, will be connected to the DHS. The generated electricity will be fed into the grid.

The CHP has been uniquely painted pink to support Breast Cancer Research.

## Success factors

Clarke Energy and GE share a common vision when it comes to energy efficiency and sustainability. This results in an on-site Energy Centre with a CHP plant. In time, the CHP plant will provide 100 % of the development's heat and hot water needs and 80 % of its electricity. Installation of the GE Jenbacher gas engines will contribute to the 50 % reduction in emissions.

## Main barriers

Before installation of the first JMS612, Clarke Energy overcame space restriction issues with detailed planning and design. The energy centre is now ready for installation of engines 2 and 3.

## Conclusions

The Kings Cross energy scheme sets a quality standard for further district heating projects.

With detailed planning and design in place, the benefits of CHP and district heating can bring:

- Significant reductions in $CO_2$ emissions through the optimisation of heat,
- Improved security of supply,
- Efficient transportation and use of heat for a wide variety of users,
- Increased fuel efficiency through the use of CHP,
- Lower costs of energy generation.