Peterborough / Cambridgeshire, England

VØLUND™ WASTE-TO-ENERGY TECHNOLOGY - ENERGY RECOVERY FACILITY

PROJECT CASE HISTORY

Babcock & Wilcox Renewable (B&W) and UK construction partner Interserve were awarded an engineer-procure-construct (EPC)/ turnkey contract by Viridor for a 85,000-tonne energy recovery facility in Peterborough, Cambridgeshire, England. The facility was developed under a 30-year contract signed with Peterborough City Council in 2013.

The plant was handed over to Viridor in December 2015, on time and within budget, and is operating ahead of expectations.

The plant processes local residual household, commercial and industrial waste. It generates 7.25 MW of green energy, contributing to Peterborough Council's Blue Sky project to provide sustainable energy in a smart city environment.

The solution

B&W was selected based on our experience, innovation and solution-based approach. The key features are:

- Provision of the facility under a full EPC/ turnkey contract
- Working with a UK construction partner to ensure compliance with all regulations and associated requirements, e.g. CDM and health and safety regulations
- Provision of robust in-house Vølund™ technology and a significant number of operational references
- Attractive warranties and guaranties, especially in respect of plant performance
- Full compliance with the planning and environmental permit conditions
- High electrical efficiency, resulting in an R1 rating of 0.77

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The technology

B&W's Vølund technology concept is based on in-house knowledge and many years of experience. It is designed for high efficiency, availability and performance to give an extended design life.

The solution includes our patented DynaGrate® combustion grate technology, providing excellent fuel flexibility. The key benefits for the plant owner are:

- **Proven and bankable –** The DynaGrate has been operating for a number of years in plants accepting a wide range of fuels, important to both plant owners and financial institutions.
- **Excellent fuel flexibility –** No pre-treatment of the waste is required, and it can proccess a wide range of waste streams mitigating the risk if:
  - the cost of sourcing fuel increases
  - the fuel supply changes during the life of the plant.
- **Air- or water-cooled –** The DynaGrate can be cooled by either air or water to accommodate changing heating values.
- **Low operation and maintenance costs –** Operational experience has shown that O&M costs are lower than other grate designs
- **Fly ash disposal costs significantly reduced –** Compared to other grate technologies, the DynaGrate produces significantly less fly ash reducing the associated disposal costs.

Plant design data		
Process parameters	Values*	Units
Waste capacity	11.1	t/h
Heat value	9.0	MJ/kg
Steam temperature	440	°C
Steam pressure	65	bar
Gross electric output	7.0	MW
District heating output		MJ/s

** All values refer to 11% O_2 dry gas*

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RENEWABLE | ENVIRONMENTAL | THERMAL

Established in 1867, Babcock & Wilcox is a global leader in renewable, environmental and thermal technologies and services for power and industrial applications.

For more information or to contact us, visit our website at www.babcock.com.

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