

ENERGY RECOVERY FACILITY, 320,000 TONNES PER ANNUM

Dunbar East Lothian, Scotland



The new energy recovery facility, developed by Viridor, will be located at the rail-linked waste treatment hub in Dunbar, East Lothain. Based on a detailed, competitive tender, B&W Vølund and Interserve won the EPC/turnkey contract for the facility.

The plant will treat 320,000 tonnes of waste per annum and be capable of processing different types of waste, such as residual household, commercial and industrial

waste. It will generate 30 MW of green electricity, which is enough to supply 39,000 homes, and provide local employment opportunities throughout the construction and operation phases, including 55 full-time jobs when the plant is operational.

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The solution

B&W Vølund, working with the construction partner Interserve, have been selected to build the plant based on a solution-based approach, which entails de-risking the project for Viridor whilst providing market-leading efficiency and performance. The key reasons for the selection were:

- **EPC solution** – A turnkey solution will be provided in collaboration with a UK-based construction partner with a track record in the renewable energy sector. This will ensure that all UK regulations and associated requirements are fully complied with, e.g. CDM and health and safety regulations.
- **Technology** – B&W Vølund will provide own technology and have a significant number of references. The technology gives excellent fuel flexibility and maximises efficiency, availability and plant performance backed by operational references and guarantees.
- **Construction programme** – In order to meet the rigorous deadlines set by Viridor, B&W Vølund will work closely with Interserve.

All of the above features significantly de-risk the project for Viridor.

The technology

B&W Vølund’s technology concept is based on in-house knowledge and many years of experience and provides high efficiency, availability and performance combined with a robust design to give an extended design life.



The solution is based on the patented DynaGrate® technology, providing excellent fuel flexibility. The key benefits for the plant owner are:

- **References** – The DynaGrate® is operating in a number of plants accepting a wide range of fuels which is important to plant owners and lenders.
- **Flex fuel constraints** – No pre-treatment of the waste wood is required whether contaminated and/or has metals within the same. Furthermore, it also allows a wide range of alternative fuels to be processed such as commercial and industrial residual waste and SRF/ RDF mitigating risk if:
 - the cost of sourcing fuel increases.
 - the fuel supply changes over the life of the project.
 - a contracted fuel supplier exits the market.
 Also, non-compliant fuels will not be the cause of operational issues.
- **Fly ash disposal costs significantly reduced**
Compared to other grate technologies, the DynaGrate® combustion technology produces significantly less fly ash reducing the generation of secondary waste to landfill.
- **Full recovery of ferrous metal from bottom ash**
It is possible to recover all ferrous metals from the bottom ash by applying simple back-end magnetic separation.

Plant design data (per line)		
Process parameters	Values*	Units
Waste capacity	19.2	t/h
Heat value	10	MJ/kg
Steam output	2 x 65.3	t/h
Steam temperature	440	°C
Steam pressure	65	bar
Boiler outlet flue gas temp.	155	°C
Feed water temperature	125	°C

* All values refer to 11% O₂ dry gas

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