West Palm Beach / Florida, USA

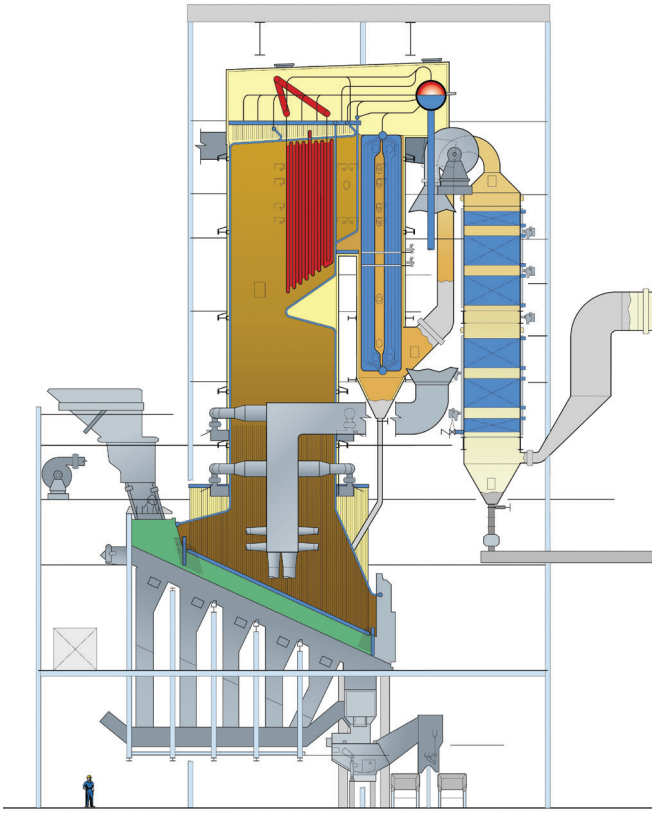
VØLUND™ WASTE-TO-ENERGY TECHNOLOGY

PROJECT CASE HISTORY

The West Palm Beach renewable energy plant commissioned in 2015 is one of the largest waste-to-energy plants in the world. Located in West Palm Beach, Florida, the plant process 2,700 tons of municipal solid waste per day – corresponding to 907,000 tons of municipal solid waste per year.

The plant consists of three single-pass mass-burn boilers, which are capable of generating enough electricity to power 56,000 homes. The boilers are specially designed to handle the massive input volume and have very high efficiency.

Furthermore, the plant is equipped with advanced control technology to reduce emissions. In fact, the emissions permit limits are the lowest of any renewable energy facility burning municipal solid waste in the United States.



Sideview of single-pass boiler

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Vølund™ Technology

Babcock & Wilcox Renewable (B&W) designed, procured and supplied the feed system, bottom ash discharger, grate siftings conveyor, hydraulic unit and our signature Vølund™ technology DynaGrate® system to facilitate the combustion process.

Reliable Solutions

The DynaGrate combustion grate system has been successfully proven, with installations in more than 100 plants worldwide. It is flexible, with the ability to burn a wide variety of unsorted fuels having a broad range of heating values for optimal waste burn-out. The DynaGrate system in the West Palm Beach facility is the largest in the world, measuring 130 square meters.

Plant design data (all three lines)		
Process parameters	Guaranteed Values*	Units
Waste capacity	113.4	t/h
Heat value, lower	10.1	MJ/kg
Steam output	386.2	t/h
Steam temperature	443	°C
Steam pressure	63	bar
Gross electric output	95.3	MW
Boiler outlet flue gas temp.	179.44	°C
Feed water temperature	149	°C
TOC, bottom ash	3	%

Flue gas values: After cleaning	Guaranteed Values*	Units
NOx**	70	mg/Nm³
SO2**	49	mg/Nm³
HCl**	23	mg/Nm³
HF	2.12	mg/Nm³
CO***	89	mg/Nm³
TOC	9.82	mg/Nm³

* *All values refer to 11% O_2 dry gas*
** *24-hour average*
*** *Four-hour average*

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