



FOSTER WHEELER

Bark Boiler

**BUBBLING FLUIDIZED BED BOILER
Retrofit to a Grate Fired Boiler
1 Unit Producing 34 MWe for
Sunila Oy
Sunila, Finland**

STEAM DATA

Total Heat Output	77.3 MWth	264 MMBtu/hr
Steam Flow	28 kg/s	20625 lb/hr
Steam Pressure	65 bar	943 psig
Steam Temperature	470 °C	878 °F
Feedwater Temperature	138 °C	280 °F

FUEL DATA

	Natural Gas	Wood Waste	Primary Sludge	Biosludge
Sulphur	0.0 %	0.0 %	0.06 %	0.06 %
Moisture	0.0 %	60 %	70 %	70 %
Ash	0.0 %	0.7 %	10 %	10 %
LHV (as received)	49.27 MJ/kg 21182.3 Btu/lb	6.53 MJ/kg 2807.4 Btu/lb	2.63 MJ/kg 1130.7 Btu/lb	2.48 MJ/kg 1066.2 Btu/lb

DESIGN PERFORMANCE

Emissions at 6% O₂ dry

	Natural Gas	Wood Waste	Wood Waste	Wood Waste
Flue Gas Exit Temperature	125 °C	257 °F	125 °C	257 °F
Boiler Efficiency	94.1 %	94.1 %	91.7 %	91.7 %
NOx Emissions	— mg/Nm ³	— lb/MMBtu	130 mg/Nm ³	0.137 lb/MMBtu
CO Emissions	— mg/Nm ³	— lb/MMBtu	250 mg/Nm ³	0.263 lb/MMBtu
Particulate Matter	— mg/Nm ³	— lb/MMBtu	15 mg/Nm ³	0.014 lb/MMBtu

[NOx 1 ppm = mg/Nm³/2.05

CO 1 ppm = mg/Nm³/1.25]

SCHEDULE

Contract Award	June	1994
Start of Erection	May	1995
Commercial Operation	July	1995



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77.3 MWth, 28 kg/s, 65 bar, 470°C

