

THE TURNKEY SOLUTION

30 MWe Wood chip-fired Power Plant

Data sheet

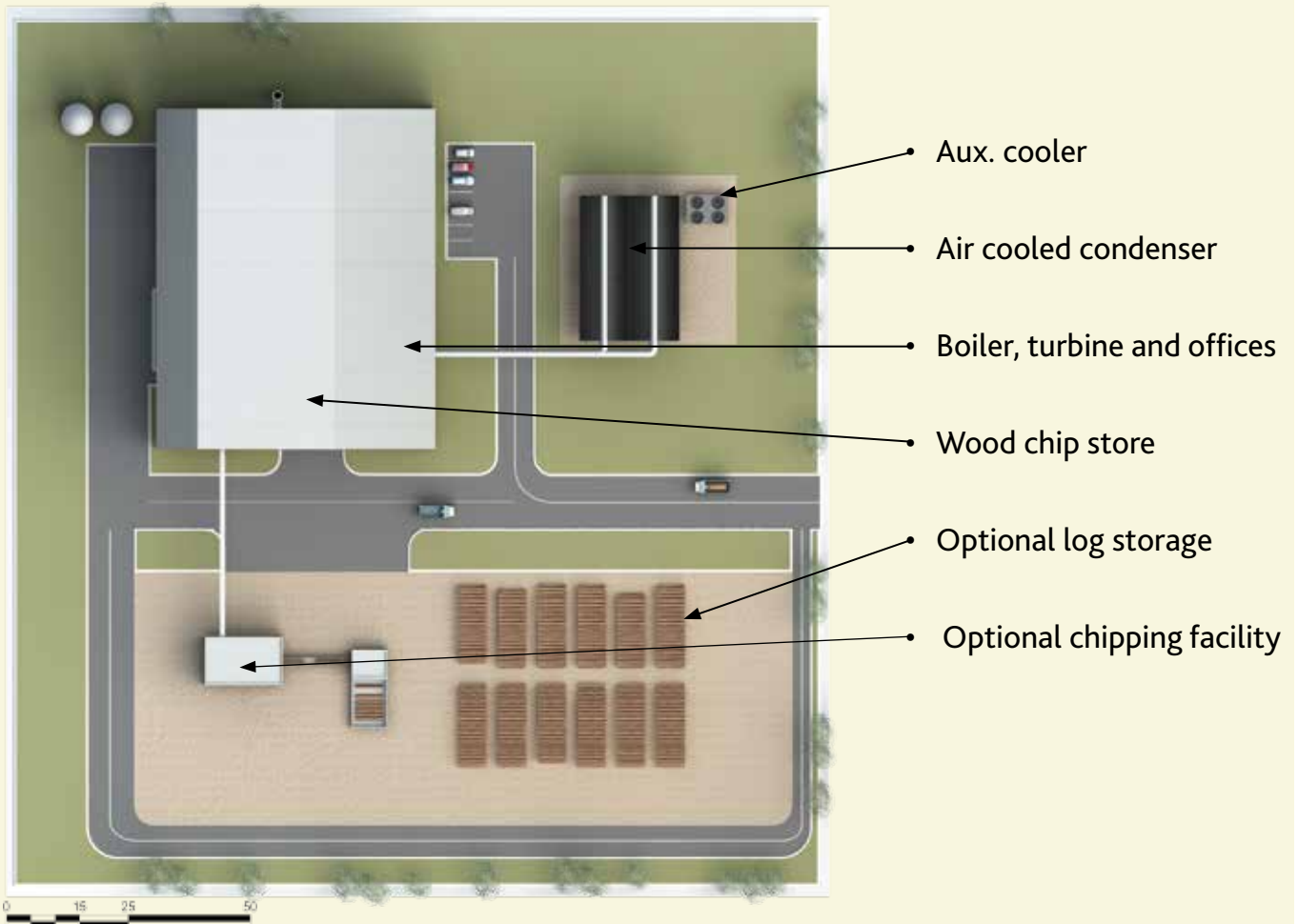


Burmeister & Wain Scandinavian Contractor A/S

30 MWe WOOD CHIP-FIRED POWER PLANT

BWSC offers its vast expertise as turnkey power plant developer, contractor and provider to supply leading efficiency biomass power plants. This specification is for BWSC's standard 30 MWe power plant, designed to burn wood chips with an optional chipping facility.

Plant layout



The prime objective of the shown typical layout is to ensure an optimal functioning plant. This is achieved by providing short and direct access for materials and personnel allowing for ease of operation and maintenance. The majority of equipment is contained indoors giving protection from weather, reducing heat losses and enabling a neat plant design. The architectural design emphasizes the plant's purpose as a clean, solid and efficient provider of green energy for the future.

The layout and the architectural design can be adapted to the client's special requirements.

The wood chip reception and storage system as well as the log storage can easily be expanded to a larger capacity, if required. The air cooled condenser can be changed to a cooling tower, or heat offtake can be to a district heating system. Furthermore, the plant can be equipped with the shown optional chipping facility.

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BWSC's turnkey biomass power plants typically include the following key components:

- Fuel reception and storage system for wood chips
- Boiler pressure part system, including evaporator part (panel walls), super heaters, economizer, flue gas cooler etc.
- Diesel tank and burner system for plant start
- Bottom ash (slag) handling system
- Combustion air system with air preheaters and forced draft fan
- Flue gas cleaning with filter
- Induced draft fan and stack
- Live steam system
- Steam turbine
- Air cooled condenser (ACC)
- Condensate system including pumps and preheaters
- Feed water system including pumps and preheaters
- Water supply system, with tank and supply pumps
- Make-up water system, including water treatment plant and storage tank
- Auxiliary cooling and heat recovery system
- Compressed air system
- Fire water system
- Alternator system
- Step-up transformer
- Medium voltage systems
- Station transformers
- Low voltage systems
- Control system & instrumentation
- DC system and UPS system
- Buildings, civil works, and landscaping

The optional log chipping facility will include the following key components:

- Log storage
- Log feed system
- Chipper
- Conveyer system



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Plant data

The table below shows plant performance data for a standard BWSC wood chip-fired power plant. This performance data will vary based on project and site-specific conditions. Data is shown for configuration both in electrical-only and combined heat and power production.

	Power generation / Combined Heat and Power
Max fuel input	98.2 MW
Main fuel type	Wood chips
Wood chip fuel consumption	49 ton (148 m ³)/hour
Net. electric plant output	30 / 26 - 22 MW _e
District heating output at 80 °C	0 / 20-60 MW _{th}
Plant availability	8,000-8,300 hours/year
Wood chip storage capacity, typical	10,800 m ³ ~ 70 hours of operation
Secondary fuel	Logs chipping
Log chipping capacity, typical	50% of total fuel consumption
Slag production approx.	128 kg/hour (+ water)
Fly ash production approx.	197 kg/hour
Flue gas amount approx.	59 kg/s
Max. CO emission	250 mg/Nm ³ – 6% oxygen
Max. NO _x emission	250 mg/Nm ³ – 6% oxygen
Max. Dust emission	20 mg/Nm ³ – 6% oxygen
Plant water consumption approx.	1 - 3 m ³ /h
Import power (for start-up) approx.	2.4 MW
Max. normal external noise emitted measured 500 m. from the plant (no chipping)	40 dB L(AEQ)
Max. normal internal noise pressure level 1 m from equipment in technical rooms (except turbine and chipping room)	85 dB L(AEQ)
Max. normal internal noise pressure level in control room and offices	45 dB L(AEQ)



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