



Waste-to-energy

24 MW HOOTON PARK RESOURCE RECOVERY CENTRE, UNITED KINGDOM



HOOTON PARK RESOURCE RECOVERY CENTRE

In November 2018, BWSC was awarded an engineering, procurement and construction (EPC) contract for the waste-to-energy plant, Hooton Bio Power Resource Recovery Centre (Hooton Bio Power) in the UK. The contract also comprises an operation and maintenance (O&M) agreement to operate the facility for 15 years.

The project, which is based on private funding, was awarded by the independent power producer, Hooton Bio Power Limited.

When operational in 2021, the Hooton Bio Power facility will be the first non-subsidised merchant gasification facility in the UK, and it is the first time the UK market will realise a gasification plant of this size.

The technology is based on gasification, using bubbling, fluidised bed technology with a melting furnace, provided by Kobelco Eco Solution (Kobelco), a technology partner based in Japan. The gasification unit is produced by Sarralle Engineering and the boiler by Leroux & Lotz Technologies, under a sub-contract with Kobelco. Kobelco has a strong track record with this technology with more than 20 references.

Waste-to-energy

The mountains of household and other solid waste that end up in landfills present a growing financial and environmental burden for communities worldwide.

In order to address the UK's waste problems, landfills are taxed, creating a financial environment where a waste-to-energy plant is not dependent on subsidies.

This made the Hooton Bio Power project developed by CoGen bankable.

When the plant is on-grid, it will convert 25 tons of industrial and municipal solid waste per hour into 24 MWe.

The waste will be delivered to the plant on lorries, arriving directly after picking up household waste. The waste will then be weighed and then transported to the receiving bunker, where a crane will transfer the waste to one of two shredders. The shredders will make sure at least 90% of the waste will pass a 300 mm screen test.

From the fuel bunker another crane will move the shredded fuel to one of four fuel conveyers that feed two parallel gasifiers.

The waste will return to the households as power less than 36 hours after waste pick-up.

Hooton Bio Power, 10 months after reward, September 2019



Operation and maintenance

Upon completion of the plant, it will be operated and maintained by BWSC for 15 years.

During the period, on a 24/7 basis, BWSC will ensure optimal plant performance and lifetime, based on our in-depth power plant expertise and extensive operational experience.

The O&M organisation will be hired locally with back-up from power plant specialists located in UK and Denmark.

The on-site organisation will undergo extensive courses and hands-on training, starting approximately half a year prior to taking over the facility.

The purpose is to make the staff fully confident with the procedures and routines of the entire power plant, including fire-fighting, health, safety and environmental issues.

Power made simple – together with BWSC

Power production is a complicated matter. That’s why it makes sense to partner with BWSC from start to finish – or draw on our expertise to address a specific issue in your power plant’s lifecycle.

We are project-oriented, specialising in turnkey power plants and energy systems based on biomass, waste-to-energy and hybrid and engine-based solutions. Over the past four decades, we have built more than 180 power plants in 54 countries. So when you are looking for a partner to develop, design, build or operate your power plant, you can count on us to make your idea a reality.

Working with BWSC from the beginning of your project will ensure the best possible solution, where we design the plant together and focus on bankability and a return on your investments.

Because even though power production is a complicated matter, it won’t be for you when you partner with BWSC. We look forward to discussing your project and how we can cooperate.



Lorries will collect and deliver waste to the plant



The crane will move 25 tons of waste per hour

Ten UK plants in ten years. What a journey!

The 300 MW of capacity is all based on renewable energy. And with operation and maintenance contracts at ten UK plants, we look forward to many more years working with our partners, suppliers and customers.

Power plants

Hooton	24 MWe	waste	EPC + 15 yr O&M	2021
Kent	28 MWe + 6 MWth	virgin/waste wood	EPC + 15 yr O&M	2018
Cramlington	27 MWe + 6 MWth	virgin/waste wood	EPC + 12 yr O&M	2018
Snetterton	44 MWe	straw	EPC + 15 yr O&M	2017
Tilbury	40 MWe	waste wood	EPC + 20 yr O&M	2017
Speyside	12 MWe	virgin wood	12 yr O&M	2016
Widnes	20 MWe + 8 MWth	waste wood	EPC + 20 yr O&M	2016
Brigg	40 MWe	straw	EPC + 15 yr O&M	2015
Lisahally	16 MWe + 6 MWth	waste wood	EPC + 15 yr O&M	2015
Sleaford	39 MWe + 1 MWth	straw	EPC + 12 yr O&M	2014
Western Wood	14 MWe	virgin wood	EPC + 6 yr O&M	2008

SUMMARY

Waste not, want not

We can no longer afford to simply toss the waste products of our consumer lifestyle into landfills where they decompose and unleash greenhouse gases.

At BWSC, we work closely with our partners to apply the latest boiler technology available, transforming waste into useable energy.

For gasification projects, we work closely with Kobelco Eco Solutions from Japan. For traditional waste incineration projects, we have partnered with Steinmüller Babcock in Germany and other technology leaders.

We carefully select our technology partners to ensure the power plants we deliver provide reliable energy for decades and solid returns for investors.

Hooton Bio Power Developer:



EPC contractor:



Technology:



Operation and maintenance:



Turnkey EPC

Contract:

Effective contract October 2018
Handover July 2021
Scope capacity 24 MW
Technology Gasification based on bubbling fluidised bed technology, with melting furnace and a horizontal boiler with vertical economisers
Technology supplier Kobelco Eco Solutions

Technical data:

Boiler supplier Leroux & Lotz Technologies supplied under a subcontract with Kobelco Eco Solutions

Gasification supplier Sarralle Engineering supplied under a subcontract with Kobelco Eco Solutions

Turbine MAN Energy Solutions
Type MARC 6-C05

Generator ELIN Motoren
Type HTM211F04

Step-up transformer Koncar
Type Oil-immersed, ONAF (oil natural, air forced) cooled
Ratio 11 kV/33 kV
Rated output 31 MVA

Utility transformers Siemens

Control system ABB
Type 800xA

Stack VL Staal A/S
Height 80 m
Number 1 off, with two liners

Civils

Site preparation, roads and utilities NB Construction Ltd.
Building earth and concrete works Sword
Building cladding H. McLarnon
Precast concrete elements Concast
Asphalt paving NB Construction Ltd.
Building structural steel installation Caunton

Flue gas treatment Lodge Cottrell

Air cooled condenser SPG Dry Cooling (former SPX)