



TEMPLEBOROUGH BIOMASS POWER PLANT

GENERATING CLEAN, GREEN ENERGY USING WASTE WOOD AS A FUEL

EXPORTING



**OF GREEN
ELECTRICITY**

SUPPLYING



**HOMES WITH
ENERGY**

SAVING OVER



**TONS OF CO₂
A YEAR**



Our renewable energy biomass power plant will generate clean, green energy using waste wood as a fuel and so is great for the environment. We plan to be fully operational by the end of Summer 2018, when our plant will generate just over 41MW of green electricity which is enough to supply 78,000 homes and save over 150,000 tons of CO₂ every year.

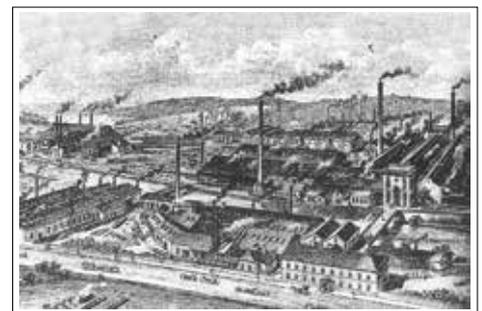


Welcome to the latest Community Newsletter from the team here at the Templeborough Biomass Power Plant. This will be the last newsletter from our construction phase as we are proud to say our new power plant is now fully operational and generating clean, green energy for homes across the region.

Using waste wood as a fuel our power plant generates 41 megawatts of sustainable electricity, supplying 78,000 homes with clean, green power which saves more than 150,000 tons of polluting CO₂ every year, the equivalent of driving a car round the world 1,700 times. We are proud of our biomass power plant and the team that works with us every day to make the best use of a waste wood resource to generate clean, green electricity.

Continuing a long tradition

Our site has seen industrial activity since the Romans established a mill on the south bank of the river adjacent to their fort. This was later converted into an oil mill. The area was developed as Bessemer steel works in 1871, which by 1892 had become a mile-long, spreading from our site along Sheffield Road to almost where the M1 is now. We are proud to continue this industrial heritage and place the area at the forefront of the new environmental revolution as one of a growing number of biomass plants powering the UK.



Engraving of Steel, Peech and Tozer's Phoenix Bessemer Steel works, c.1900s

How did we build our power plant?

Construction on the brownfield site started on 15 March 2015. The plant first burned wood in May 2018 and first generated clean, green electricity in July 2018. Here's how we did it:

- We cleared the site, demolishing and crushing over 3,000m³ of concrete and remediating 30,000m³ of earth weighing around 55,000 tonnes, recycling and reusing as much as we could.
- We then began constructing the foundations including piles that go up to 7m underground.
- Next, we began laying the new 4.5km underground cable route used to carry the electricity generated to the national grid at Wincobank, where it can be used by everyone.
- We built a new bridge over the river which was lifted into place in one piece.
- To construct the boiler, turbine and buildings we had to lift over 2,000 tonnes of steel into place.
- At the peak, 400 people were employed in the construction of the plant.
- We built a fish pass and an eel pass to encourage native species back along the River Don, creating a swim way from the sea to the traditional salmon spawning grounds in the Peak District.
- The first cold commissioning tests took place in November 2017.
- We burned our first wood in May 2018.
- We generated our first electricity in July 2018.
- The construction team handed the new operating plant over to the operations team in February 2019.



Our construction timeline

| | 2015 | | | | 2016 | | | | 2017 | | | | 2018 | | | | 2019 | |
|---|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 |
| WORK AT THE SITE | | | | | | | | | | | | | | | | | | |
| Site Clean-up | | | | | | | | | | | | | | | | | | |
| Piling & Foundations | | | | | | | | | | | | | | | | | | |
| Foundation Works | | | | | | | | | | | | | | | | | | |
| Onsite Assembly of Components | | | | | | | | | | | | | | | | | | |
| ELECTRICAL CABLE WORKS (SHEFFIELD ROAD AND MEADOWHALL) | | | | | | | | | | | | | | | | | | |
| Streetworks in Sheffield Road | | | | | | | | | | | | | | | | | | |
| Streetworks around Meadowhall | | | | | | | | | | | | | | | | | | |
| Pull cable through the installed ducts | | | | | | | | | | | | | | | | | | |
| PREPARATION FOR OPERATION | | | | | | | | | | | | | | | | | | |
| Cold Commissioning | | | | | | | | | | | | | | | | | | |
| Hot Commissioning | | | | | | | | | | | | | | | | | | |
| First Steam Test | | | | | | | | | | | | | | | | | | |
| First Synchronisation | | | | | | | | | | | | | | | | | | |
| First Power to Grid | | | | | | | | | | | | | | | | | | |
| Full Commercial Operation | | | | | | | | | | | | | | | | | | |

How have we benefitted the community?

The plant is operated on our behalf by Babcock & Wilcox Vølund who employs a small, dedicated on-site team of 26 people, providing secure employment for many years to come. The benefits of our power plant go beyond this team, impacting positively on the local economy. In our first year of construction alone we spent over £40m locally purchasing products and services, and we will contribute at least £4m per year to the local economy during every year of operation.

How do we generate clean, green electricity?

On average, each person in the UK generates around 100kg of waste wood per year, and every year we use 270,000 tonnes of this waste at our power plant. This is collected and processed by around 25 mostly family scale, wood collection and processing companies

across the area which are co-ordinated and managed by Stobart. The wood is shredded before it is sent to us in walking floor trailers, each containing around 20 tonnes and we take 40 deliveries per day.

Stobart also operate a wood processing site at Greasbrough Road around 1 mile away, which acts as a feeder site to the plant with trucks running a shuttle service to and fro. Stobart also operate a large storage facility capable of storing up to 25,000 tonnes of wood at Pollington around 30 miles away, largely for the benefit of our plant.

All this has ensured the fuel supply chain stays as local as possible, minimising the carbon footprint of our operations and generating employment for significantly more people than work at our site.





What are the environmental benefits of our power plant?

The power plant uses waste wood to generate electricity. This is great for the environment as otherwise this wood would be sent to landfill where it would decompose releasing methane, a gas around 20 times more harmful to the environment than CO₂.

The wood is burned at temperatures in excess of 1000°C to produce steam at around 500°C which is then sent to the turbine which generates electricity. This plant is connected to the national grid through a 4.5km underground cable.

The gasses coming out of the boiler after combustion go through three stages of clean up before being released to the atmosphere. This clean up removes over 99% of the particulate emissions from the gasses, over 90% of the oxides of sulphur and hydrogen chloride and over 80% of the oxides of nitrogen.

How did we make it all happen?

To build such a complex plant is no small task so we know that we have many people to thank! We could not have done this without the hard work and dedication of our construction and operating teams and the patience and support of the local community, including those living along the cable route. We can't thank them enough for their understanding.

To celebrate this achievement we hosted our official inauguration on June 24th 2019, inviting some of our Danish partners and many of the UK authorities and organisations that have been working with us locally to bring our original idea to fruition. This was a great opportunity to celebrate the official start of the operational period of the project and we were delighted to welcome His Royal Highness Prince Andrew, the Duke of York to officially open our power plant.

We would like to thank everyone involved but there are just too many – working together to power the equivalent of half of the homes in Rotherham with clean, green electricity, and helping secure the future for generations to come.

Myles Wallace – General Manager

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For those of you who missed our previous newsletters, please find them in the news section at www.templeboroughbiomass.com