SUPPLY MANAGEMENT

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Converting the Drax Power Station to burn biomass fuel involved the creation of an entirely new supply chain.

BY: WILL GREEN 22.06.2015

The intention is that half the boilers at Drax Power Station in North Yorkshire will burn biomass fuel. © Drax

Graham Backhouse, head of supply chain and logistics at the UK's largest power station, said it was necessary to create new port facilities, new rail wagons and extra storage facilities.

Backhouse said the move was driven by the government's stated goal to move away from coal and Drax started experimenting with biomass fuels in 2003.

"It was the right thing to do, to consider the future and the skills and infrastructure at the power station, which lent themselves to biomass," he said.

Backhouse joined Drax in 2008 after it was decided to ramp up the use of biomass. In that year the station used a couple of hundred thousand tonnes of biomass – a mixture of timber and agricultural by-products – but by 2010 it was burning more than one million tonnes a year.

At that time the company's intention was to convert its six boilers to run on a mix of coal and biomass, known as co-firing, to take advantage of government renewable energy subsidies. This would require around seven million tonnes of biomass and five million tonnes of coal each year.

However, in 2012 government policy changed and subsidies for co-firing were cut. This meant to get the same level of subsidy as before, Drax would have to convert boilers to run purely on biomass. "On that day our share price tumbled immediately by 25 to 30 per cent within an hour of the government announcement, because no one had ever converted boilers on the scale Drax has here," said Backhouse.

He said this presented a whole new challenge in terms of sourcing sufficient quantities of biomass fuel, which burns with one third less heat than coal, so more volume is required. Storage is also more difficult because it must be kept dry, not to mention sustainability issues around how the timber is grown.

"This was a just in time supply chain, not a stack it high, burn it later coal platform," said Backhouse.

"You were changing what we were used to being to this whole new business with lots of new challenges around sustainability, government intervention and chemistry."

Timber pellets, made up of the residue left after timber is cut for construction and wood pulp, are sourced mainly from North America and Europe.

Currently two boilers are burning purely biomass and there are plans to convert a third this year. Backhouse said taking into account production, transport and burning, emissions using biomass are 86 per cent lower than coal.

However, it costs $165 a tonne, compared to $58 a tonne for coal. "Yes, the price is significantly higher than coal," said Backhouse. "We can continue burning coal or we can move to a renewable future which is a bit more expensive, but biomass would still be cheaper than all the major low carbon technologies."

Drax produces 7-8 per cent of the UK's power requirements.

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