

Landmark Development

Drax Power Station in North Yorkshire is a prominent landmark, its 850 ft high chimney surrounded by twelve cooling towers visible for several miles. With a generating capacity of almost 4000 MW it is the largest coal fired plant in western Europe. It is also the most efficient of its kind in UK. Nonetheless, further increases in carbon emission efficiency were demanded, leading to the current project to convert three of the six generating units to run on biomass. The first was converted during 2013, with the second running on 85% biomass during last year. A third unit is due for completion late this year or early next, with a possible option on the fourth unit under consideration.

This involves not just the Drax plant but new ship unloading, material transfer and railhead installations at the ports of Hull, Immingham and Grimsby enabling a total of 4 million tonnes per annum of biomass pellets to be handled, adding to the 1.4 million tonnes already available from Port of Tyne. At Drax the pellets will be stored in domes, then be transferred by belt and pneumatic conveyors before being ground ready for use. At least a dozen SHAPA member companies are involved in this project, the scale of which is truly massive. For example, Drax already boasts about 140 conveyors totalling more than 24km in length; each converted furnace can consume up to 8200 tonnes of biomass per day and the site can store 80,000 tonnes for forward use.

SHAPA members are supplying a comprehensive range of equipment including pneumatic conveyors, pipeline systems, mechanical conveyors, rotary valves, sampling systems, filters, screens, silos and hoppers, weighing equipment as well as explosion protection. Many companies are established suppliers to Drax for the existing coal fired plant. Removal and processing of pulverised fuel ash (PFA) and furnace bottom ash (FBA) for re-use in building products such as cement, blocks and grouting and for road laying materials, are significant activities in themselves. Up to 1 million tonnes/year of these bi-products are utilised in this way.

In spite of the biomass originating in specialist facilities in USA and being shipped to UK ports, the carbon efficiency of the whole cycle is said to be around 85% better than that for coal fired generators. There have been many innovative technologies applied to improve all round efficiency, including major flue gas desulphurisation installations, but the future is seen in renewables such as biomass. SHAPA, with committed member companies enjoying decades of shared knowledge, expertise and development, has played a valuable part in these environmental and other improvements.

Please visit www.shapa.co.uk or email info@shapa.co.uk to tap into this continuously developing resource.