

CASE STUDY

PULVERISED FUEL ASH (PFA) PROVIDES A SUSTAINABLE SOLUTION TO THE M25 WIDENING SCHEME

RWE Power International supplied over 88,000 tonnes of PFA to the M25 widening project in Essex for various construction applications, proving what a successful and versatile construction material it is.



The M25 widening project (Junctions 27 to 30) is being carried out by Skanska Balfour Beatty Joint Venture for Connect Plus, working on behalf of the Highways Agency, as part of the Design, Build, Finance and Operation contract for the M25.

This is one of the major improvement schemes on the M25 which was originally completed in 1986 and used over 1 million tonnes of PFA.

The scheme

RWE Power International secured a contract in 2009 to supply conditioned PFA for the project. Material was supplied from RWE npower's Tilbury Power Station in Essex for the first phase of works between Junctions 27 and 28. Approximately 88,000 tonnes of conditioned PFA was used as general fill to widen the existing motorway embankments and as fill behind some of the retaining wall solutions.

At a peak, up to 3,250 tonnes of PFA were being delivered per day with RWE Power International co-ordinating up to 175 daily lorry deliveries.

There are also plans to use PFA in future phases, with the entire project scheduled for completion in 2012.

Why PFA?

PFA is a by-product of burning coal to generate electricity and is used extensively in construction projects and to create building materials. Using PFA brings various environmental benefits for construction companies, enabling them to meet recycling targets and reduce their carbon footprint. PFA use can avoid the need to utilise 'virgin' or 'primary' aggregates, assisting in lowering the environmental impact of construction projects. As such, PFA is a secondary material that is both environmentally friendly and cost effective.



PFA being used as fill to widen the existing M25 embankments



PFA being delivered on site



PFA being compacted on site

PFA also has many engineering benefits that make it ideal as 'fill' material for major civil engineering projects. The PFA's lighter density has been utilised to reduce loading on some of the existing motorway embankments. In addition, it's lightweight properties help to keep the cost of materials and haulage down. PFA was also used throughout the winter months as it can be placed in wetter periods, although not as extensively as through the summer period.

Tilbury Power Station is a 1,400 megawatt station supplying 1.4 million homes – equivalent to 80% of the total population of Essex and recycles 60,000 tonnes of ash each year into local sustainable construction projects. RWE Power International also markets and sells PFA from its power stations at Didcot in Oxfordshire and Aberthaw in South Wales.

Nigel Staves, Tilbury Power Station Manager, commented, "We have a dedicated team who work tirelessly to find new markets for our ash which is an essential part of coal fired power generation. Supplying our ash locally into sustainable projects is a fantastic way to recycle a product that would otherwise be sent to landfill."



PFA being spread and compacted

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