Tees Valley Renewable Energy Facility

The Environmental Statement:
Volume 3 Non-Technical Summary

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Air Products Tees Valley Renewable Energy Facility

Environmental Statement
Volume 3 of 3: Non-Technical Summary

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Introduction

This Non-Technical Summary of the Environmental Statement (ES) has been prepared by Atkins for Air Products plc to accompany a planning application for the proposed Tees Valley Renewable Energy Facility. The application site is identified by the red-line boundary in the map below. The ES accompanying the planning application reports the findings of the environmental impact assessment process. Potential impacts of the proposed development during both construction and operation have been assessed.

The scheme is to develop a 49 megawatt (MW) renewable energy facility on the Reclamation Ponds Site (outlined in blue in the figure below) in the Seal Sands area on the north bank of the Tees Estuary in Stockton, Teesside. The facility will have a processing capacity of 950 tonnes per day and generate renewable energy for up to 50,000 homes.
Consultation

The development of the scheme design and the assessment of the environmental impacts has been informed through consultation with the following organisations:

- Stockton-on-Tees Borough Council
- Tees Valley Wildlife Trust
- One North East
- Tees Archaeology
- Health And Safety Executive
- Association Of North East Councils
- Cleveland Emergency Planning Office
- Highways Agency
- The Royal Society for the Protection of Birds (RSPB)
- Natural England (NE)
- The Environment Agency (EA)

Background and Need for the Scheme

The proposed facility meets several key local, national and international policy objectives.

There is a global drive to address the challenges of climate change; in the UK the Government has been proactive in creating a framework to facilitate a move towards a low-carbon future.

The Energy Act updates energy legislation to reflect the availability of new technologies and emerging renewable technologies. It strengthens the Renewables Obligation (RO) to increase the diversity of electricity mix, improve the reliability of energy supplies and help lower carbon emissions. The RO places a mandatory requirement for UK electricity suppliers to source a percentage of electricity that they supply from eligible renewable sources. The current target is 15% by 2015. This facility will produce green electricity, which will be eligible for RO Certificates.

In July 2009 the UK government published the ‘UK Renewable Energy Strategy’. This document set out the government’s targets to radically increase the use of renewable energy over less sustainable alternatives such as fossil fuels. One of the key drivers is the depleted North Sea oil and gas reserves and the increase in global energy demands, which means the UK needs to find alternative energy sources. With only 2.25% of its energy from renewables in 2008 the Renewable Energy Strategy commits the UK to sourcing 15% of its energy from renewable sources by 2020. This commitment is also covered in the EC Renewables Directive (June 2009). Schemes such as the proposed Teesside Renewable Energy Facility are integral to helping the government achieve its targets.

The scheme will also contribute to the government’s key objectives, as set out in the Waste Strategy for England 2007.

The Proposed Facility

Air Products plc proposes to develop a 49 MW renewable energy facility processing feedstock comprising residual municipal solid waste (MSW), commercial and industrial waste.

The facility will occupy an area of approximately 8 hectares (ha) and will comprise the following key components and process areas:

- Fuel preparation facility
  - Materials handling and storage
  - Oxygen production unit
  - Plasma gasification unit
  - Syngas cleanup system
- Power generation block

The site layout of the renewable energy facility has been designed to accommodate a plasma arc gasification plant and the associated process equipment and buildings required for the production of electricity.

The design for this industrial facility is one of efficiency, durability, functionality, constructability, and sustainable maintenance. Given the characteristics of the area and the nature of the facility it is proposed to accommodate key activities within buildings; however, for ease of maintenance and safety purposes the process areas will not generally be enclosed.

The key buildings are:

- Security building and weighbridge
- Control and administration building and associated staff and visitor parking (50 spaces)
- Feedstock spotter building
- Materials storage & handling facilities
- Oxygen production building
- Oil storage building
- Electrical building and associated substation
- Main substation and motor control centre

If planning permission is granted construction could commence in October 2011. The construction period for the whole facility would be approximately 24 months with commissioning of the facility taking place October 2013.

Environmental impacts associated with the construction of the scheme will be limited to this 24 month period.

The proposed facility is anticipated to employ 58 permanent members of staff and will operate 24hrs a day.

The Site and Its Surroundings

The site is located approximately 4.5 km to the east of Billingham on the Reclamation Ponds Site. It is in the Seal Sands Area on the north bank of the Tees Estuary in Stockton, Teesside, England, approximately 6km west from Tees Bay, and the North Sea. The main vehicular access is from the A178 via Huntsman Drive (to be renamed as North Tees Access Road). The A178 provides access to the strategic road network (A19) via the A1185.

The Reclamation Ponds site is currently undergoing reclamation works as part of a previously approved planning application. The site has some scrub vegetation but no mature trees currently present on site. To the northern boundary of the application site is open water.

The application site is located in an area which is primarily industrial. The north bank of the Tees is occupied by a variety of operations including petro-chemical facilities storage and heavy engineering. The North Tees Works (petro-chemical facility occupied by SABIC) is adjacent to the eastern boundary of the site. To the south of the site, beyond Huntsman Drive, is the Port Clarence Landfill Site. This hazardous waste disposal site is operated by Augean.

The nearest residential settlements are Port Clarence, approximately 2 km to the southwest of the site, South Bank, approximately 2 km to the south of the site, and Cowpen Bewley, approximately 3.5 km to the northwest.

Dorman’s Pool lies 350m west of the site. This is designated as the Tees and Hartepool Foreshore and Wetlands Site of Special Scientific Interest (SSSI), and is also the closest part of the Teesmouth and Cleveland Coast Ramsar and Special Protection Area (SPA) to the site.

Seal Sands SSSI lies approximately 1.3 km north of the site, Cowpen Marsh SSSI, 2.1km northwest, South Gare and Coatham Sands SSSI, 3 km northeast, and Seaton Dunes and Common SSSI approximately 4km northeast of the site.

Scheme Design and the Environmental Design

Consideration of the potential environmental impacts and the opportunity to provide environmental improvements have been fundamental considerations and have been reflected in the development of the scheme.

Consideration of the scheme in relation to traffic and transportation has sought to promote sustainable transport through the use of a car share scheme, facilities for cyclists and reducing the need to travel.

Sustainable drainage and water management systems have been incorporated into the design to manage flood risk and surface water.

The facility will be constructed with a minimum of 20 m to the boundary of the Reclamation Pond, providing an extra buffer for minimising the noise and visual disturbance to neighbouring receptors.

The overriding objective of the landscape design has been to respond sensitively to all the visual,
lenscape, topographical, ecological assets and constraints associated with the site.

As a consequence, no significant impacts associated with contaminated land have been identified for either the construction or operation of the facility.

Traffic and Transportation

An assessment was undertaken of the potential transport and highway impacts of the construction and operation of the scheme on the capacity and safety of the surrounding road network.

The assessment concluded that traffic is not likely to have a significant impact on the operation or safety of the surrounding road network. There are expected to be some temporary significant impacts on Huntsman Drive associated with construction.

To mitigate the effects of construction, a construction stage traffic management plan will be prepared.

During operation of the facility a Travel Plan will be implemented. This will include the following measures and actions:

- Employment of a travel plan coordinator
- Promotion of sustainable transport
- Facilities for cyclists
- Car share scheme
- Reducing the need to travel
- Coordination with local groups
- Monitoring and review of the Travel Plan.

Air Quality

The air quality impact assessment concluded that during construction of the facility there is potential for generation of dust, as there is with any construction work. This can be adequately addressed by employing best practice techniques on the construction site. Measures such as covering loose material stockpiles on site and erecting barriers around dust-emitting activities will be employed where appropriate.

Air pollution due to increased traffic associated with the facility has been assessed and is predicted to have a negligible impact on local air quality.
Stack emissions of oxides of nitrogen were modelled and the emissions were found not to affect the achievement of Air Quality Strategy objectives for the protection of human health. The effects of nitrogen deposition at sensitive designated ecological sites were also assessed as being insignificant.

Noise and Vibration

The noise and vibration assessment considered the potential impacts that the construction and operation of the facility might have on residents and visitors in the area.

Construction has the potential to generate noise and give rise to significant noise impacts at Dorman's Pool, although these impacts are associated with temporary, short term construction activities such as piling. The impacts due to typical construction activities will be negligible at Dorman’s Pool and beyond.

Construction noise will be minimised through the employment of best practice measures such as ensuring equipment is adequately serviced and maintained and exhausts have silencers where necessary.

Traffic noise impacts during both the construction and the operation of the facility are predicted to be negligible at all receptors except visitors to Dorman’s Pool during the operation when impacts are predicted to be minor.

The impacts due to the normal operation of the facility will give rise to minor noise impacts at Dorman’s Pool in the daytime and moderate noise impacts during night-time hours.

Noise impacts due to the normal operation of the facility at all residential and other non-residential noise sensitive receptors will be negligible.

Some significant noise impacts are predicted during the short term infrequent operation of the flare at the facility.

Ecology

The ecology assessment considered the impacts of the scheme on sensitive ecological features including designated sites (SSSIs, SPAs and Ramsar sites) associated with the River Tees and the Teesmouth Estuary.

The facility is located adjacent to Dorman’s Pool, which forms part of the Teesmouth and Cleveland Coast SPA. The SPA is designated under the EU Birds Directive (1979) due to its importance in protecting and conserving certain European wild bird populations and their habitats. Although not part of the SPA, the water body within the Reclamation Pond site is an important site for birds, and regularly supports significant populations of water birds associated with the SPA.

The key potential impacts of the facility on birds would arise from noise and visual disturbance, but these are not expected to be significant.

The assessment concluded that the land take for the construction of the facility would cause no loss of habitats of nature conservation value and it is unlikely that habitats outside of the facility would be affected by either air quality or water pollution effects.

Landscape and Visual Assessment

The effect of the proposals on the landscape character and visual amenity of the study area has been assessed.

The existing site is located adjacent to an area of intensive industrial activity. The proposed facility will introduce a minor addition to the industrial area of Teesmouth and result in a slight adverse effect upon Saltholme and Cowpen Marshes Landscape Character Area.

The proposed facility is expected to result in a neutral effect upon the Middlesbrough, Tees
Corridor and Teesport and Seal Sands Industrial Townscape Character Areas.

The facility will form a minor addition to the intensive industrial built form of Teesmouth for a number of visual receptors to the south and west, and the distant views of the proposed scheme within an existing industrial landscape or adjacent to an industrial landscape will result in a neutral effect.

The proposed facility will result in a slight adverse effect upon close, sensitive visual receptors at Saltholme RSPB Nature Reserve. The proposed facility will cause a visible new, but not major element within the existing conditions, and will result in bringing industrial development physically and visually closer to the reserve.

A number of mitigation measures will be in place during operation of the facility including; the use of a cladding material for the proposed facility that is sympathetic in colour to the surrounding landscape/townscape character, use of non-intrusive perimeter fencing.

A flood risk assessment has been undertaken and has confirmed that the site is located in an area that has a low risk of flooding. As well as flood risks, the water assessment has considered the potential impacts on local groundwater and surface water, including the effects of the facility and its construction on water flow and water quality.

The key surface water features in the area are the surrounding drains, ponds and marshes that discharge to the River Tees. The key groundwater receptor at the site is the shallow groundwater in the underlying sands and gravels.

The risk of contamination of the surface water and groundwater during construction will be managed by adopting best working practices in accordance with regulatory requirements and the EA’s Pollution Prevention Guidance.

Surface water drainage and overland water runoff from the facility will be managed through water management systems incorporated into the scheme’s design.

The assessment concludes the scheme should have a neutral impact on the water environment.

Socio-Economics

The assessment of the scheme’s impact on socio-economics determined that there would be mostly positive socio-economic impacts at both the local and regional levels. It is expected that the facility will not only provide temporary jobs, but will also create a number of permanent jobs.

Summary and Conclusions

The scheme has been developed through an iterative process such that many of the environmental mitigation measures are inherent in the scheme design. A Construction Environmental Management Plan will be produced to manage construction impacts, and further measures will be delivered through detailed design, construction and operational controls.

Once the mitigation measures set out in the ES are implemented, it is expected that the significant impacts of construction of the scheme will be limited to temporary traffic impacts to Huntsman Drive and short term construction noise impacts on visitors to Dorman’s Pool.

For normal operation of the facility, significant noise impacts are expected to visitors at Dorman’s Pool at night. Additional significant impacts are also expected due to noise generated by sporadic operation of the flare during start-up periods and emergencies, when the flare is operating at its maximum capacity.

Water

View of surrounding industrial landscape including North Tees Works oil refinery.