

Non-Technical Summary

This non-technical summary has been produced in order to support Coal Products Limited (CPL) with a variation application to their current Environmental Permit (EP) (reference: DP3134LK) at the Immingham Briquetting Works. The requirement to vary the existing EP has been prompted for the following reasons:

- The request to amend the operational profile of the existing Hydrothermal Carbonisation (HTC) plant, so that is transferred from a pilot plant (that only operates on 30 days in a year) to a fully-operational, 24-hour unit.
- Request to implement and operate a new Caustic Wash and Impregnation Unit, used for reprocessing spent carbon using caustic solution.
- The request to amend related activities, comprising the addition of one new waste code to for carbon regeneration.
- The request to increase the water discharge limit for emission point W1, in order to incorporate additional surface water run-off.

The site address is:

Coal Products Limited (trading as CPL Products)

Immingham Briquetting Works

Western Access Road

Immingham Docks

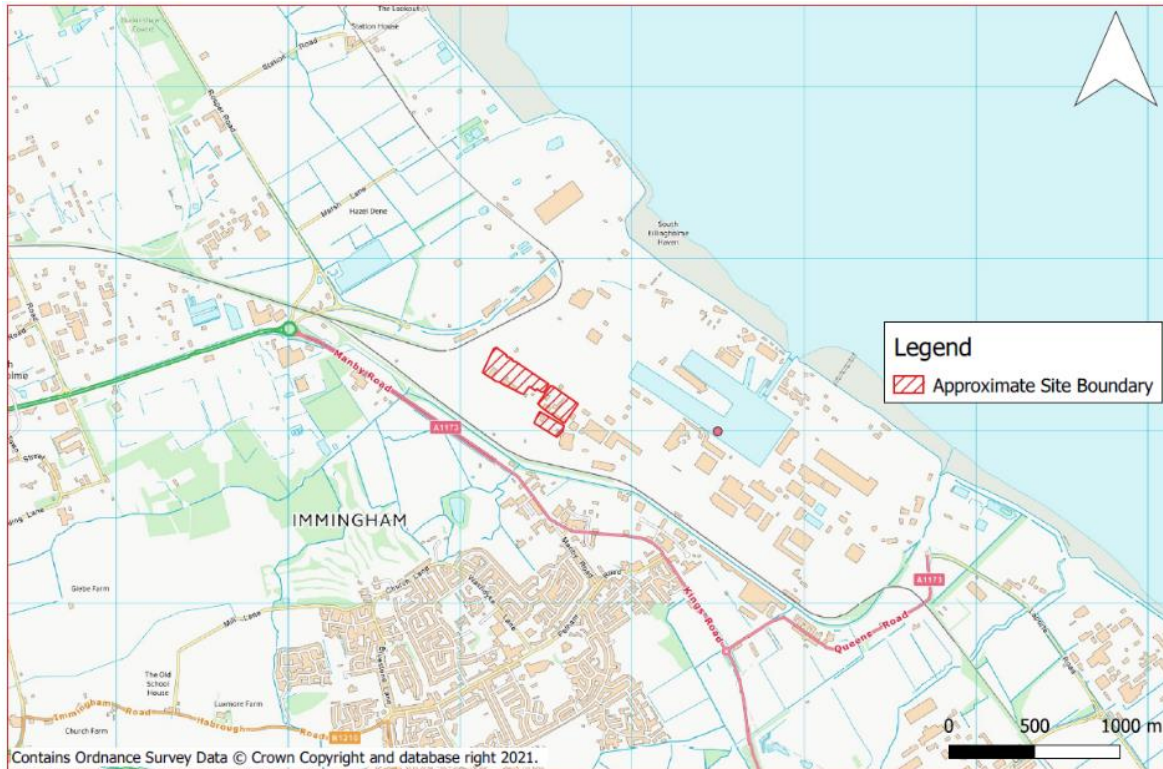
Immingham

Northeast Lincolnshire

DN40 2QR

The map in Figure i1 shows the site location and its surrounds.

Figure i1 – Site Location



The Coal Products Limited (CPL) Immingham Briquetting Works is currently permitted (Environment Agency ref DP3134LK) for “Coal Briquetting”, “Carbon Regeneration” and “Receipt, storage and size reduction of coal”, with the Directly Associated Activities comprising “Fines recovery and wastewater Treatment”, “Operation of acid washing plant” and “Operation of pilot plant”.

The Immingham Works currently has eight emission points to air and one emission point to water. The proposed changes introduced within this variation application consider three emission points to air (existing point A8 and new points A9 and A10), as well as the existing emission point to water (W1). The outstanding emission points to air remain unchanged as a result of this variation.

Hydrothermal Carbonisation (HTC) Plant

CPL has an ongoing commitment to the replacement of coal-based fuels and activated carbons with biomass-based materials. Controlled under the existing EP, the site has a directly authorised activity associated with pilot scale equipment to thermally treat biomasses from various sources to progress the development of renewable replacements.

The previous EP variation introduced the HTC plant as a new pilot plant to be built in order to increase the scale of the pilot programme on site. The unit was purchased and installed by Nottingham University with government funding through the Energy Research Acceleration funding process. CPL provided the land and services for the project and has overseen operation during University trials. In the pilot plant stage, the unit has operated in 4 to 6 hour slots and only for 30 days per year, with a maximum of 150 kg per hour input. This variation covers the request to increase the operational hours of the HTC plant to a fully-operational, 24-hour unit.

A new emission point to air will be introduced to the permit (this is currently referenced in existing permit but not regulated), serving emissions from the existing drier and boiler associated with the HTC plant. HTC process liquor will be treated and then sent to the current effluent system; there will be no new emission points to water.

Caustic Wash and Impregnation Unit

The Immingham Works currently operates two spent carbon regeneration plants and an acid wash unit. The acid wash unit is associated with the regeneration that reprocesses 'green' carbon from the potable water and food industries. The unit prepares the carbon prior to thermal regeneration to improve the quality of the final product.

As part of an ongoing development programme, this variation includes a request to carry out a similar wash process for the 'amber' carbon which comes from industrial uses. The washing process is very similar to current acid wash but utilises caustic solution rather than acid. In addition, the variation covers the request to operate an impregnation unit, which takes regenerated and/or washed carbon and adds a small amount of caustic solution to produce a product that has enhanced absorbency for specific contaminants.

The development work, which is confidential company intellectual property, indicates that for certain spent carbons, the caustic wash and impregnation is possible without further thermal processing. There are, therefore, significant benefits to be had with regards to reduced energy and caustic usage (i.e., a reduction in carbon footprint), whilst keeping the quality of the end product the same. In addition, currently the only other method for dealing with high-sulphur spent carbon is by sending to landfill; the caustic wash and impregnation unit process avoids this.

Of the incoming spent carbon, it is proposed that 25% of this is diverted to the new caustic wash and impregnation unit (i.e., throughput will remain the same as current). There will be no new emissions to water, but the new Caustic Wash and Impregnation Unit includes two new emission points to air.

Waste and Raw Materials

This variation application also covers the request to include an additional waste code for the use of pharmaceutical wastes. As a hazardous waste, this variation application also covers the measures that will be in place to ensure safe storage, handling and use of these wastes. There are no further changes proposed with regards to waste and raw materials.

Water Discharge

As a result of wastewater derived from the HTC plant, as well as an increased catchment area for the site (due to the leasing of additional land) accompanied with increasing rainfall quantities recorded at the site, this variation application covers the request to increase the water discharge limit from 500 m³/day to 1,200 m³/day as a seven-day rolling average. There is no request in this application to change any of the characteristics of the discharge water that are currently in place (e.g., pH, temperature or visible oil). All current characteristics are expected to remain well within the current parameters. The purpose of this variation application covers the increase in rainfall and catchment area that has taken place with the increase in land leased. Emissions to water will continue to be treated through the existing water effluent treatment plant, which is capable of handling the increased volume proposed.

Environmental Assessments

Emissions from the proposed installation have been assessed using the Environment Agency's guidance on 'Risk assessments for your environmental permit' pertaining to air and water. These assessments have demonstrated that:

- For emissions to air, under the anticipated operating profile of the plant, all concentrations in air at human receptors are projected to be below the relevant assessment level and no exceedances are predicted. For concentrations in air at ecological receptors, although exceedances have been predicted, these are due to the existing background levels and the process contribution from the site can be described as not significant. For deposition results at ecological receptors, there are two receptors for which further consideration has been required, as process contribution (PC) results are above the 1% significance threshold. However, it has been noted that as an estuarine environment, the tide is washing these areas twice a day, preventing the accumulation of deposited pollutants. In addition, as these



receptors are within the boundary of the port, it is unlikely that the critical loads for acid would apply in these areas due to the habitats present in that specific location.

- For emissions to water, the addition of the effluent associated with the fully operational HTC process results in minimal increases in pollutant loading and the HTC process effluent does not push any additional parameters over the reporting limit.

The changes requested within this variation will be managed in accordance with the site's existing environmental management system, which is maintained in accordance with the installation's current EP.