Permitting Decisions- Variation

We have decided to grant the variation for Saltend Power Station operated by Saltend Cogeneration Company Limited.

The variation number is EPR/QP3539LE/V012.

The permit was issued on 14/05/2026.

The variation is for the following:

- Additon of a Secondary (SEC) boiler Large Combustion Plant (LCP) (which was removed in permit variation EPR/QP3539LE/V010).

- Increase in cooling system water discharge temperature from 28°C to 32°C and removal of ambient temperature +8°C condition.

This variation also includes an administrative change to the site name and address as requested by the Operator:

- Change of site name and address from Saltend Cogeneration Plant, Saltend Power Station, Hedon Road, Hull, HU12 8GA to Saltend Power Station, Saltend Chemicals Park, Hedon Road, Hull, HU12 8GA.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision-making process. It

- highlights key issues in the determination

- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account

- explains why we have also made an Environment Agency initiated variation

- shows how we have considered the consultation responses

Unless the decision document specifies otherwise, we have accepted the Operator's proposals.

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

Key issues of the decision

In reaching our decision to grant the permit we took into consideration the following matters:

Nature of the site

Saltend Cogeneration Company Limited operates a power station at Saltend Power Station, Saltend Chemicals Park, Hedon Road, Hull, HU12 8GA.

A recent variation of Permit EPR/QP3539LE/V010, issued in February 2024, removed gas boiler LCP299, which had been out of operation. As a result, the Installation was left with a single start-up gas boiler (LCP298) to provide steam to the combined cycle gas turbine (CCGT) units.

The current variation proposes reintroducing a replacement SEC boiler to bring LCP299 back into operation. As part of the variation, the new replacement boiler will have an updated LCP number in accordance with the most recent DEFRA LCP reference numbers. The new boiler will be known as LCP693.

LCP693 is a new natural gas boiler with a thermal input of 166.4 MWth.

The total thermal input of the plant at the Installation will now be 2452.6 MWth.

The Installation also proposes to increase the permitted cooling system water discharge temperature from 28°C to 32°C, and to remove the existing condition that limits discharge to ambient temperature +8°C. This change is requested because, in recent years, warmer ambient conditions have resulted in higher incoming water temperatures, bringing the discharge temperature close to the existing limit despite no changes to site processes. Increasing the allowable discharge temperature is therefore proposed to prevent unintentional exceedances under these warmer conditions.

Best Available Techniques (BAT)

We have reviewed the permit variation against the BAT Conclusions (BATc) for the Large Combustion Plant (LCP) sector published on 17th August 2017.

BAT conclusions 1 – 17 applicable to all sites and 40 – 45 applicable to plant combustion gaseous fuels (but excluding those relating to iron and steel and chemical industries) have been considered.

The Operator has considered BAT in terms of Environment Management Systems, monitoring of process parameters, monitoring of emissions to air and water, noise emissions, environmental performance, and energy efficiency.

Environment Management Systems (EMS)

The Operator confirms that the Installation operates in accordance with a written EMS which is accredited to ISO 14001.

The Operator confirms that the existing EMS Management of Change procedure will be applied following the variation to ensure the changes are fully reflected. The Operator also states that, as part of this process, the monitoring procedure, site and equipment maintenance arrangements, and the contingency plan will be updated accordingly.

We are satisfied that this constitutes BAT.

Emissions to Air

The new LCP will operate on natural gas.

The new LCP has been engineered to comply with the emission limits set out in the LCP BAT Reference Document (BREF), specifically Table 25 (BATc). Its design also takes account of the government's consultation on updates to the 2009 Carbon Capture Readiness requirements, available at: https://www.gov.uk/government/consultations/decarbonisation-readiness-updates-to-the-2009-carbon-capture-readiness-requirements

As a result, the plant has been designed to be capable of operating on hydrogen (H_2) in the future and, when doing so, would be able to meet the relevant Industrial Emissions Directive (IED) emission limits. At present, however, there is no hydrogen supply available and no current plan to operate the LCP on hydrogen.

Should hydrogen firing be adopted in the future, the LCP has been designed to incorporate Selective Catalytic Reduction (SCR) and an oxidation catalyst, enabling ammonia (NH_3) emissions to be controlled to ≤ 5 mg/Nm³. The SCR system will not be used during natural gas firing due to the combustion tuning and boiler design. Any transition to hydrogen firing would require a permit variation before the LCP could operate on both hydrogen and natural gas.

In order to prevent or reduce emissions to air during normal operating conditions the new natural gas boiler LCP will be designed and operated with the following:

- Low excess air controlled by Distributed Control System (DCS)
- Reduction in combustion air temperature - ambient air used
- Advanced control system - new DCS used
- Low oxides of nitrogen (NOx) burners - fuel/air staging
- Flue gas recirculation

In order to prevent or reduce emissions to air during other than normal operating conditions (OTNOC) the new natural gas boiler LCP will be designed and operated with the following:

- Environmental impacts reviewed annually to take into account emissions from OTNOC.
- CEMs continually in service – NOx, carbon monoxide (CO), sulphur dioxide (SO_2) and dust emissions monitored.

The key process parameters for emissions to air from the stack of oxygen, temperature, pressure and flow will be monitored using CEMS. The monitoring of water vapour content is not required as the sample of flue-gas will be dry.

The key emissions to air of NOx and CO will be monitored using CEMS. The emissions of SO_2 and dust will require concentration by calculation of emission factors every 6 months instead of CEMS. The Operator has not included the monitoring of dust in their application; we will include this in the permit as it is required by Annex V of IED Chapter III.

In order to improve and ensure the environmental performance of the new LCP and to reduce emissions to air, the Operator confirms that optimised combustion is ensured by using a combination of good design, advanced control system, regular planned maintenance of the LCP and upgrades when needed in line with BAT. The LCP will also have regular analysis of fuel as part of fuel gas metering system validation, continual monitoring of fuel composition by chromatograph and will be operated to design.

The BAT Associated Emission Levels (BAT-AELs) or IED Emission Limit Values (ELVs) for emissions of NOx, CO, SO_2 and dust have been included in table S3.1 of the permit.

We are satisfied that the changes represent BAT.

Energy Efficiency

The Operator confirms that the new LCP is energy efficient and uses the following techniques:

- Combustion optimisation
- Optimisation of the working medium conditions
- Minimisation of energy consumption
- Preheating of combustion air
- Fuel preheating
- Advanced control system
- Heat recovery by cogeneration (combined heat and power ((CHP))

We have assessed the applicability of BAT-Associated Energy Efficiency Levels (BAT-AEELs) as set out in Commission Implementing Decision (EU) 2021/2326 establishing BAT Conclusions for Large Combustion Plants, in accordance with Directive 2010/75/EU (IED).

The Installation comprises natural gas fired boilers and gas turbines, operating as a CHP plant, with no combustion of solid or liquid fuels. The permit variation relates to the reinstatement of a previously removed gas fired boiler and does not constitute the introduction of a new combustion technology or a change to fuel type.

The BAT Conclusions define BAT-AEELs only for specific fuel and plant configurations, primarily for solid fuel, liquid fuel and certain power-only installations. BAT-AEELs are not universally applicable across all LCP types and are not defined for natural gas fired CHP Installations where useful heat is recovered and exported.

For CHP plant, the BAT Conclusions require energy efficiency to be addressed through the implementation of energy efficiency techniques (BAT 12) rather than compliance with numerical BAT-AEEL ranges. The Installation already applies the relevant BAT techniques for CHP, and electrical only efficiency benchmarks are not appropriate due to the export of useful heat and the site-specific nature of heat demand.

On this basis, the Environment Agency is satisfied that:

- BAT-AEELs are not applicable to the Installation given its natural gas fuel type and CHP configuration.
- Energy efficiency is adequately addressed through compliance with BAT 12 techniques.
- No derogation under Article 15(4) of the IED is required, as BAT-AEELs are out of scope rather than not achieved.

We are satisfied that the changes represent BAT.

Noise

The new LCP will be constructed at the same location that the old LCP was constructed.

In order to reduce emissions of noise the Operator confirms the use of the following techniques:

- Operational measures
- Low noise equipment
- Noise attenuation
- Noise control equipment

We have reviewed the requirement for a Noise Impact Assessment using our Noise Advisory Tool. Based on the nature of the Installation, its location, and the proposed noise mitigation measures, we anticipate that the risk of noise impacts as a result of the variation will not be significant.

Consequently, the assessment confirmed that a Noise Impact Assessment and Noise Management Plan are not required. If a Noise Impact Assessment was required, then the Operator would need to submit a Noise Impact Assessment based on The Environmental Permitting (England and Wales) Regulations 2016. We have also included our standard noise condition in the permit, which allows us to ask for a Noise Management Plan if we become aware of noise-related problems on site.

We are satisfied that the changes represent BAT.

Emissions to Water

The only change to the emissions to water at the site via emission point W1 is the increase in temperature.

Temperature, along with other key process parameters for emissions to water including flow and pH will be monitored using MCERTS equipment as specified by the Installation's environmental permit.

We are satisfied that this constitutes BAT.

Change in Operations

Emissions to Air

The Operator proposes to add a SEC boiler LCP (which was removed in permit variation EPR/QP3539LE/V010).

The new boiler (LCP693) is fuelled by natural gas and has a thermal input of 166.4 MWth.

The total thermal input of the plant at the Installation will increase to 2452.6 MWth as a result of the new LCP.

The purpose of the boiler is to supply steam under a contract to the adjacent Saltend Chemicals Park and their COMAH facilities. It is a replacement for a boiler that had been on site since the site was operationally commissioned in 2000.

When the site was first permitted, the Combined Cycle Gas Turbines (CCGTs) operated for the majority of the time and supplied steam to the adjacent Saltend Chemicals Park. This arrangement made the overall operation of both the chemicals park and the power station highly efficient. However, changes in grid conditions, particularly periods of high renewable generation, now mean that the

CCGTs operate far less frequently. As a result, the chemicals park often struggles to secure a reliable steam supply.

Replacing the boiler will provide a dependable source of steam without the need to run a CCGT. In terms of air emissions, this means the boiler will frequently be the sole emitting source at the Installation, as the CCGTs will not typically be required to operate.

The Operator has submitted an Air Quality Assessment and associated dispersion modelling to support the application. As outlined above, the modelling represents a worst-case scenario. In practice, the site is expected to operate with the proposed boiler running continuously, with only intermittent operation of one or more CCGTs.

Air Quality

In line with the Environment Agency's guidance (Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk)) and the relevant parts of the guidance applicable to the assessment of air dispersion modelling of emissions from LCP's the Operator submitted detailed air dispersion modelling and impact assessment to assess the predicted impacts on human receptors and ecological sites.

The methodology for risk assessment of point source emissions to air, and the associated definitions, are set out in our guidance Air emissions risk assessment for your environmental permit - GOV.UK (www.gov.uk).

Operator's Assessment of Potential Impact on Air Quality

The Operator has submitted an Air Quality Assessment (AQA) to support the permit application variation to operate a natural gas 166.4 MWth input thermal capacity boiler (associated with the emission point A5) at the Saltend Cogeneration Plant in Hedon Road, Hull. The new boiler is an addition to an existing site that operates three 727.7 MWth natural gas turbines (emission points A1-A3) and a 73.1 MWth natural gas start-up boiler (A4). This represents scenario 2 (proposed) in their AQA report.

We reviewed the following air quality assessments and documentation with associated modelling files submitted by the Operator, completed by Bureau Veritas UK Limited (the Consultant):

- Bureau Veritas, Triton Power, Saltend Permit Variation, Air Quality Assessment, dated November 2025, reference AIR24373271, revision 2.1.

- Bureau Veritas, Saltend Power Station – Ecological Air Quality Assessment (Reassessment July Update), dated 17th July 2025, reference 24889, version 1.

- Triton Power, Saltend Cogen Fired Boiler Performance Data Sheet.

The Consultant has modelled and assessed the impacts of nitrogen oxides (NOx), sulphur dioxide (SO_2) and carbon monoxide (CO) emissions to represent the operation of the facility. A dust emission limit is to be included within the permit; however, emissions of dust were not included in the Consultant's assessment. We have evaluated the potential impacts of dust in our audit.

The Consultant carried out the air quality assessment based on the following:

- Emission points A1-A3 were modelled for a combined annual total of 17,790 hours, A4 for 600 hours and A5 was modelled for a full year of operation, 8,760 hours.

- A derogation is in place which permits units A1-A3 to operate at an increased NOx concentration. The associated hourly restriction applies only for the duration of the derogation, which expires on 1st January 2027 for A1, 2028 for A3 and 2029 for A2.

- The process contributions (PCs) from A4 have been factored based on 600 operational hours per annum, whereas the unit is currently permitted for full year operation.

Human Receptors

The Consultant modelled 6 discrete human receptor locations to represent relevant public exposure.

The Installation is not situated in an Air Quality Management Area (AQMA).

The Consultant concluded the following for human health:

- Maximum long-term and short-term PCs are insignificant, with exception of the long-term NO_2. However, the predicted environmental concentration (PECs) do not exceed the relevant environment standard at the identified locations of exposure for human health.

- Air quality impacts for human health can be considered as not significant.

Ecological Receptors

The Consultant considered the following protected European sites:

- Humber Estuary Special Area of Conservation (SAC)
- Humber Estuary Special Protection Area (SPA)
- Humber Estuary Ramsar

They also considered 3 Sites of Special Scientific Interest (SSSI) and 2 Local Nature Reserves (LNR) as receptor points.

The Consultant concluded the following for ecological receptors:

- Long term NOx emissions either screen out as insignificant, or the PECs are found to be well under the critical level (CLe).

- Short term NOx emissions screen out as insignificant at some receptors, however of note is receptor E3 (a location in Humber Estuary SSSI/SAC/SPA/Ramsar) where they do not screen out and the PEC is found to be 98.6%.

- SO_2 emissions screen out as insignificant at all receptors except for E3, where the PEC is then found to be well below the CLe.

- Acid deposition screens out at as insignificant at all receptor locations with the PEC being well below the critical load (CLo).

- Nitrogen deposition screens out as insignificant at all receptor locations except E3, where the PC is >1% and the PEC is then found to be above the CLo at 151.3%.

Despite the PEC representing 151.3% of the CLo for nitrogen deposition at E3, the Consultant concludes that the resulting air quality impacts on ecological receptors are not significant. This conclusion is supported within the Ecological Assessment on the basis that exceedances of the lower critical load are primarily attributable to elevated background nitrogen deposition levels rather than the proposed development alone.

The Assessment identifies that approximately 1.25% of the total mudflat area within the Humber Estuary SAC and SPA would experience an increase in nitrogen deposition exceeding 0.1 kg N/ha/yr as a result of the proposed permit. Given the small area and taking into account the dynamic environmental conditions of the Humber Estuary, which limit the potential for long-term accumulation of atmospheric nitrogen, no likely significant effect is anticipated.

For all other sensitive habitats within the Humber Estuary SAC and SPA, less than 1% of the total habitat area would be subject to increased nitrogen deposition. Although background deposition levels across the site already exceed lower critical loads, the Assessment demonstrates that only a very small proportion of each habitat type would be affected by attributable increases. On this basis, these impacts are considered to be localised and not ecologically significant at the site level.

Environment Agency Review of Operator Assessment of Potential Impact on Air Quality

We have audited the Consultant's assessments and have made observations relating to their methods and assumptions. We have conducted our own modelling checks and have analysed model sensitivities. As a result, we agree with the Consultant's conclusions for human health, but we do not agree with the Consultant's conclusions for ecological receptors where nutrient nitrogen deposition PCs are not insignificant at locations of the Humber Estuary SSSI/SAC/SPA/Ramsar, where the PEC exceeds the minimum critical load (i.e. 10kgN).

As a result of our modelling audit and sensitivity analysis, we observe the following:

- The technical specifications provided by the Operator indicate they are consistent with the boiler (A5) operating at full load at a reduced thermal input of 161.8 MWth. However, we identified inconsistencies in the source term parameters and were unable to replicate the Consultant's emission rates at the NOx ELV of 50 mg/Nm^3 – the ELV should be 60 mg/Nm^3.

- We undertook check modelling for the higher NOx emission rate, and the potential impacts of dust using the PM10 and PM2.5 environmental standards (ES) for A5. Sensitivity testing of parameters in the datasheet indicates that, given these inconsistencies and the permit NOx ELV of 60 mg/m^3, the emission rate could be higher than modelled.

- The Consultant has modelled scenario 1 (existing) and scenario 2 (proposed). However, they have not considered the operation of the site post-derogation in their assessment. We have completed check modelling for this scenario 2 (post-derogation).

Human Health Observations

As a result of our modelling audit and sensitivity analysis, we observe the following:

- Although we do not necessarily agree with Consultant's numerical predictions, we agree that contributions from the proposed facility are unlikely to cause exceedances of environmental standards at any relevant location of exposure for human health.

Ecological Observations

As a result of our modelling audit and sensitivity analysis, we observe the following:

- The Consultant's receptor locations do not appear to represent the worst-case locations for nutrient nitrogen deposition, and we therefore do not agree with their conclusions for the proposal.

- The maximum nutrient nitrogen deposition values in the contours presented in their ecological assessment are more conservative (0.5 kgN/ha-y) than those derived from our modelling and those presented in their AQA (0.15 kgN/ha-y) for the proposal.

- A full habitats assessment to assess the significance of the emissions to air on ecological receptors is required (see Habitat Regulations Assessment (HRA) section).

Emission Limits Applied to the Plant

The boiler is new plant and therefore the Emission Limit Values (ELVs) are based on the Industrial Emissions Directive (IED) (Annex V Part 2) and LCP BREF. A number of general principles were applied while setting ELVs to the new plant. These included:

- The upper value of the BAT-AELs ranges specified were used unless use of the tighter limit was justified.

- Where a limit was specified in both IED Annex V and the BAT Conclusions for a particular reference period, the tighter limit was applied and in the majority of cases this was from the BAT Conclusions.

- Where AELs are indicative in the BAT Conclusions, these were applied unless adequate justification was provided by the Operator to demonstrate that an alternative limit was more appropriate.

The ELVs and AELs are based on unlimited hours operation.

The limits will apply between minimum start-up load (MSUL)/ minimum shut-down load (MSDL) to baseload.

The following tables outline the limits that have been incorporated into the permit for LCP693 where these were derived from and the reference periods at which they apply. The emission limits refer to concentrations, expressed as mass of emitted substance per volume of flue-gas under the following standard conditions: dry gas at a temperature of 273,15 K, pressure of 101,3 kPa and 15% volume reference oxygen concentration if flue gases.

The emission limits and monitoring requirements have been incorporated into Schedule 3 of the permit.

NOx limits (mg/Nm^3)						
Averaging	**IED (Annex V Part 2)**	**BREF (Table 25 BAT-c)**	**Expected permit limits**	**Basis**	**Limits apply**	**Monitoring**
Annual	None	60	60	BREF	MSUL/MSDL to baseload	Continuous
Monthly	100	None	85 (Note 1)	Note 1	MSUL/MSDL to baseload	
Daily	110	85	85	BREF	MSUL/MSDL to baseload	
95th %ile of hr means	200	None	200	IED	MSUL/MSDL to baseload	

Note 1 - The monthly expected permit limit for NOx is tighter than the IED annex V limit (100mg/Nm^3). The monthly limit cannot be higher than the daily limit, therefore we have set a monthly limit which matches the daily limit given in the BREF.

CO limits (mg/Nm^3) - indicative in italics						
Averaging	**IED (Annex V Part 2)**	**BREF**	**Expected permit limits**	**Basis**	**Limits apply**	**Monitoring**
Annual	None	*15*	*15*	BREF	MSUL/MSDL to baseload	Continuous
Monthly	100	None	100	IED	MSUL/MSDL to baseload	
Daily	110	None	110	IED	MSUL/MSDL to baseload	
95th %ile of hr means	200	None	200	IED	MSUL/MSDL to baseload	

The below look-up tables were used to establish emission limits for SO_2 and dust and are derived from the IED.

SO_2 limits (mg/Nm^3)						
Averaging	**IED (Annex V Part 2)**	**BREF**	**Expected permit limits**	**Basis**	**Limits apply**	**Monitoring**
Monthly	35	None	35	IED	MSUL/MSDL to baseload	Continuous
Daily	38.5	None	38.5	IED	MSUL/MSDL to baseload	
95th %ile of hr means	70	None	70	IED	MSUL/MSDL to baseload	

Dust limits (mg/Nm^3)						
Averaging	**IED (Annex V Part 2)**	**BREF**	**Expected permit limits**	**Basis**	**Limits apply**	**Monitoring**
Monthly	5	None	5	IED	MSUL/MSDL to baseload	Continuous
Daily	5.5	None	5.5	IED	MSUL/MSDL to baseload	
95th %ile of hr means	10	None	10	IED	MSUL/MSDL to baseload	

In line with IED Annex V, Part 3, paragraph 2: The competent authority may decide not to require the continuous measurements for SO_2 and dust from combustion plants firing natural gas.

Therefore, we have decided that continuous measurements for SO_2 and dust are not required for the new LCP boiler and as agreed with JEP, we will require concentration by calculation of emission factors every 6 months instead of CEMS even though the new boiler is >100MWth.

Therefore, the ELVs for SO_2 are:

IED (Annex V Part 2)	**BREF**	**Expected permit limits**	**Basis**	**Limits apply**	**Monitoring**
35	None	35	IED	MSUL/MSDL to baseload	At least every 6 months. Concentration by calculation, as agreed in writing with the Environment Agency

The ELVs for dust are:

IED (Annex V Part 2)	**BREF**	**Expected permit limits**	**Basis**	**Limits apply**	**Monitoring**
5	None	5	IED	MSUL/MSDL to baseload	At least every 6 months. Concentration by calculation, as agreed in writing with the Environment Agency

<u>Minimum start up load (MSUL)/minimum shut-down load (MSDL)</u>

The Operator has defined the “minimum start up load (MSUL)” and “minimum shut-down load (MSDL)” for the new LCP boiler in terms of steam flow rate in tonnes/hour.

They have defined the MSUL as >35 tonnes/hour steam export and the following 3 criteria:

1. Steam transferred from startup vent to the steam outlet valve system at the correct temperature and pressure to be able to export to customer.

2. All Burners (x4) start up curves completed and at minimum fire.

3. SCR activation temperature will be achieved when the boiler flow is at least 35 tonnes/hour.

They have defined the MSDL as <35 tonnes/hour steam export and the following 3 criteria:

1. Steam transferred from steam outlet valve system to startup vent at the minimum temperature and pressure.

2. Standby burners on minimum fire or shutdown curve.

3. SCR activation temperature below minimum setpoint.

We agree with all of these definitions and have incorporated the above criteria into table S1.2 and the steam flow rate thresholds into table S1.4 of the permit accordingly.

Emissions to Water

The Operator proposes to increase the permitted cooling system water discharge temperature from 28°C to 32°C, and to remove the existing condition that limits discharge to ambient temperature +8°C. This change is requested because, in recent years, warmer ambient conditions have resulted in higher incoming water temperatures, bringing the discharge temperature close to the existing limit despite no changes to site processes. Increasing the allowable discharge temperature is therefore proposed to prevent unintentional exceedances under these warmer conditions.

Operator's Technical Basis for Removing the Ambient +8°C Rule

The existing requirement for discharge temperature in the permit states that the discharge temperature must not exceed ambient +8°C (max 28°C). The Operator states that this condition is not practical, technically justified, or environmentally necessary for several reasons:

The abstraction and discharge points are geographically separate therefore:

- Temperature is measured at the site near the abstraction point, which is not the same physical location as the discharge at Queen Elizabeth Dock.

- Although both are within the same water body, natural thermal variability means ambient measurements at the abstraction point do not accurately reflect the temperature at the discharge location.

- The Operator has no safe or practical means of measuring true ambient temperature at the point of discharge.

- This makes the +8°C condition unworkable, unverifiable, and inconsistent with what the site can reliably monitor.

We agree that a fixed upper temperature limit provides clear, unambiguous compliance criteria and avoids uncertainty associated with fluctuating ambient measurements.

Operator's Assessment of Potential Impact on Water Quality

The Operator submitted a Thermal Discharge Report and Hydraulic Modelling note prepared by APEM Ltd (the Consultant), which considered the potential ecological impacts of increasing the discharge temperature of the point source emission into Queen Elizabeth Dock/ King George Dock and subsequently the Humber Estuary. The Consultant has included the ecological impacts of discharge up to 40°C in order to future-proof any permit variations, the modelling therefore, represents a worst-case scenario.

There are no explicit Water Framework Directive (WFD) standards for temperature in transitional and coastal (TraC) waters, in the same way that WFD temperature standards are set for rivers (WFD Directions, 2015). An Environment Agency guidance note (Jonas 2015) indicates appropriate regulatory targets for TraC waters and sets out the regulatory drivers that have informed these targets. The Consultant has used this Environment Agency guidance note as the basis for the assessment of compliance of the Installation's cooling water discharge against water temperature targets.

Ecological Receptors

Protected sites include:

- Humber Estuary Special Area of Conservation (SAC)
- Humber Estuary Special Protection Area (SPA)
- Humber Estuary Ramsar
- Humber Estuary Site of Special Scientific Interest (SSSI)

Protected habitats include:

- Coastal Saltmarsh
- Mudflats

Protected species include:

- Atlantic Salmon
- Allis Shad
- European Eel
- River Lamprey
- Sea Lamprey
- Smelt
- Twaite Shad

The Installation's cooling water discharge to Queen Elizabeth Dock/ King George Dock is located within the HUMBER LOWER transitional WFD water body. The dock is approximately 3 km downstream from the boundary of the HUMBER MIDDLE transitional WFD water body, and the adjacent estuary (connected via lock) is designated as the Humber Estuary SAC, SPA, Ramsar and SSSI. The Humber Estuary does not receive any direct discharges from the prescribed processes at the Installation, however, due to its hydraulic connectivity, the Humber Estuary SAC, SPA, Ramsar and SSSI were taken into account.

The Consultant carried out a water quality survey of in-situ parameters (water temperature, salinity, pH and dissolved oxygen) from within Queen Elizabeth Dock/ King George Dock. The Consultant sampled 6 sites and plotted profile graphs of water depth versus the different water quality in-situ parameters.

The results of the sampling showed that the Queen Elizabeth Dock/ King George Dock is well mixed, both vertically and horizontally. The Consultant added that there may be a greater potential for vertical stratification during peak summer months (not sampled) however this is deemed relatively unlikely given the mixing that will be afforded by regular locking, ship movements and relatively large wind fetch length.

The Consultant found that all in-situ parameter measurements were within the range of the wider (Environment Agency) Humber data for the time of year sampled. Temperature data was very similar across all sites and depths with no thermocline evident. Dissolved Oxygen (DO) data (concentrations and %saturation) were all very similar (across sites) and at healthy concentrations/levels.

The Consultant found that the very bottom samples showed some decline in DO, which is normal and likely indicative of sediment oxygen demand in the very bottom water that is directly influenced by sediments; notably this does not show at all above -10 m water depth. A similar change in pH is evident in the very bottom waters, however again the scale of change is very slight and all in the range of 'healthy' water quality conditions. Salinity increases slightly with depth as to be expected.

The Consultant carried out thermal modelling of:

- Annual 98th percentile absolute temperatures (at surface and bed) for both a current max temperature scenario (28°C) and the maximum proposed temperature scenario (40°C).
- Annual 98th percentile temperature rise (at surface and bed) relative to no discharge (i.e. change from an absolute baseline).

Results

The Consultant found that the modelled dispersion of temperature was rapid across both the dock bed and surface, as evidenced by the rapid decrease in temperature with distance from the outfall. At the maximum temperature scenario (40°C), the maximum temperature uplift observed within the docks at any location (relative to an absolute baseline of no discharge) was +1°C, with a maximum absolute temperature of 21.1°C.

The Consultant found that the elevated temperature plume was restricted only to the dock area, with temperatures across both the bed and surface reducing to broadly ambient / background levels upon reaching the estuary. Under the maximum temperature scenario (40°C), there was only a negligible temperature uplift of 0.2°C observed within the estuary itself with a maximum absolute temperature of 19.1°C.

The Consultant states that the results of all thermal–hydrodynamic simulations consistently demonstrate that the proposed discharge has a negligible influence on water temperatures within Queen Elizabeth Dock/ King George Dock or the wider Humber Estuary. Across all scenarios, including the maximum 40°C discharge case, temperature patterns within the dock and estuary are overwhelmingly governed by ambient seasonal conditions, tidal mixing, and estuarine circulation rather than by the discharge itself. The plume remains highly localised, rapidly diluted, and does not materially alter the background thermal regime under any modelled condition.

The Consultant states that given the consistency of these outcomes across baseline, elevated temperature, and no discharge scenarios, the model results are considered conclusive. The assessment has been undertaken using conservative assumptions for discharge volume, discharge temperature, ambient conditions, and operational behaviour, and the negligible thermal response observed under these upper-bound conditions demonstrates that the system is overwhelmingly controlled by natural tidal and seasonal processes. As such, there is no technical or regulatory justification for further refinement of the model inputs, boundary conditions, or scenario design, as any additional modelling would not alter the conclusion that the discharge produces no material thermal impact within Queen Elizabeth Dock/ King George Dock or the Humber Estuary.

Conclusions

The Consultant concludes the following:

- Across all scenarios, including the highest-temperature discharge case (40°C), model results show that the thermal plume remains highly localised within the dock with negligible impact to the estuary. Ambient seasonal temperature variations and tidal mixing dominate the thermal regime, with the discharge contributing only a very small increase in water temperature in the immediate vicinity of the outfall.

- Key ecological thresholds, including absolute temperature limits, uplift limits above ambient, and percentile-based compliance metrics for Water Framework Directive (WFD) TraC waters, SPA and SAC designations, and thermal barrier considerations, are met comfortably for all simulated scenarios. No scenario results in exceedance of the 23°C, 28°C, or 21.5°C absolute temperature thresholds at the edge of the mixing zone, nor any exceedance of the 2-3°C uplift criteria.

- Thermal responses within the Humber Estuary are overwhelmingly governed by tidal state, meteorological conditions and natural estuarine circulation rather than the temperature of the Installation discharge. Spatial patterns, plume extents and percentile statistics remain consistent across all tests, indicating that variations in discharge temperature between 28°C and 40°C do not materially influence the estuary-scale thermal environment.

- Based on the modelling undertaken, it is concluded that increasing the discharge limit to 32°C (and assessing up to 40°C for future-proofing) would have a negligible effect on water temperatures in Queen Elizabeth Dock/ King George Dock or the Humber Estuary. The proposed permit variation is therefore unlikely to result in measurable ecological impacts within the assessed waterbodies.

Environment Agency Review of Operator Assessment of Potential Impact on Water Quality

We have carried out our own audit by means of detailed check modelling and sensitivity analysis on the Thermal Discharge Report and Hydraulic Modelling note presented by the Consultant.

We are satisfied that the modelling accurately represents the Installation’s likely discharge characteristics and the resulting temperature changes. The required modelling has been carried out correctly, and the underlying assumptions are both conservative and well-reasoned. We also consider the marine modelling submitted by the Consultant in support of the application to be realistic and robust.

We have viewed and analysed the Consultant's isotherms (figures 9 to 16 in the Thermal Discharge Report submitted by the Consultant) and note the following:

As shown in Table 1 the modelled dispersion of temperature is rapid across the dock, lock and estuary bed and surface, as evidenced by the rapid decrease in temperature compared to the discharge temperature. At the maximum temperature scenario (40°C), the maximum absolute temperature observed at any location is 21.1°C (within the dock) an increase of only 0.1°C. The greatest temperature change occurs within the lock, with an increase of 0.8°C, however, this water environment is dynamic due to the opening and closing of the lock gates.

The change in discharge temperature does not affect temperatures within the designated ecological sites of the Humber Estuary SAC, SPA, Ramsar and SSSI.

	Water Temperature	
	28°C (Existing Discharge Temp)	**40°C (Max Proposed Temp)**
Dock Temperature (Surface)	20.9-21°C	21-21.1°C
Dock Temperature (Bed)	20.9-21°C	20.9-21.1°C
Lock Temperature (Surface)	19.9-20.2°C	19.9-21°C
Lock Temperature (Bed)	19.4-19.9°C	19.4-19.9°C
Estuary Temperature (Surface)	19.1°C	19.1°C
Estuary Temperature (Bed)	19.2°C	19.2°C

Table 1. 98th percentile temperature change across dock, lock and estuary.

As shown in Table 2 at the maximum temperature scenario (40°C), the maximum temperature uplift observed at any location (relative to an absolute baseline of no discharge) is +0.9°C (within the lock).

	Water Temperature Change	
	28°C (Existing) vs No Discharge	**40°C (Max proposed) vs No Discharge**
Dock Temperature (Surface)	0.2-0.4°C	0.3-0.7°C
Dock Temperature (Bed)	0.2-0.5°C	0.3-0.7°C
Lock Temperature (Surface)	0.6-0.8°C	0.6-0.9°C
Lock Temperature (Bed)	0.3-0.8°C	0.4-0.8°C
Estuary Temperature (Surface)	0.1-0.2°C	0.1-0.2°C
Estuary Temperature (Bed)	0.1°C	0.1°C

Table 2. 98th percentile temperature change across dock, lock and estuary.

The elevated temperature plume is restricted only to the dock and lock area, with temperatures across both the bed and surface reducing to broadly ambient / background levels upon reaching the estuary. Under the maximum temperature scenario (40°C), there is only a negligible temperature uplift of 0.2°C observed within the estuary itself (Table 2) with a maximum absolute temperature of 19.2°C (Table 1).

There is no difference in temperature uplift of the water within the designated ecological sites of the Humber Estuary SAC, SPA, Ramsar and SSSI when compared to the existing discharge temperature and the proposed discharge temperature.

Overall, we agree with the Consultant's results and conclusions and are satisfied that the elevated temperature plume is restricted only to the dock and lock area, with temperatures across both the bed and surface reducing to broadly ambient / background levels upon reaching the estuary. We are satisfied that there is no difference in temperature uplift of the water within the designated ecological sites of the Humber Estuary SAC, SPA, Ramsar and SSSI when compared to the existing discharge temperature and the proposed discharge temperature.

We also agree that the evidence shows that the ambient +8°C condition is technically unworkable and offers no additional environmental protection. Thermal modelling confirms that even highly conservative scenarios produce only minimal temperature uplifts, all far below regulatory thresholds. Furthermore, Saltend Cogeneration Company Limited has a strong compliance record and rising ambient water temperatures increasingly restrict operations despite no environmental risk.

Habitat Regulations Assessment (HRA)

HRA Stage 1

A Stage 1 HRA was carried out on Humber Estuary SAC/ SPA/ Ramsar and River Derwent SAC.

The River Derwent SAC has been included in the assessment because despite it being located 50km+ upstream from the proposed permission, the water discharge flows into the Humber which is a designated migratory route for Sea and River Lamprey populations in the River Derwent. For this reason, the HRA will only consider these migratory features in the assessment. It is also appropriate to consider only the risks that could affect the migratory route and as emissions to air (particularly of the nature discharged in this proposed permission) are considered generally to play little role in the attributes of water quality (in comparison to effluent discharges) we consider assessment of air emissions in association with the Humber Estuary Designated sites only to be sufficiently protective of any impacts on this SAC, therefore risks associated with air emissions only have been removed from the assessment for the River Derwent SAC.

Alone Assessment

Emissions to Water (thermal impacts)

Table 1: Lethal/preferred temperature for potentially affected designated fish species (from application assessment)

Species	Lethal temperature (°C)	Temperature preference (°C)
Sea lamprey	31	17.8 – 21.8
Salmon	27.8	9 – 17
Sea/Brown trout	25-27.2	8 - 17

Even with a 40°C discharge the Humber Estuary or dock area is not modelled to exceed 21.1°C, the proposed permitted limit has since been revised to 32°C, the temperature of the Humber is likely to be unaffected by the thermal plume which is isolated to the King George's dock area. In terms of its effect on dissolved oxygen in the water, even in the worst-case scenario in the most affected areas the dissolved oxygen threshold for high status is met. Un-ionised ammonia is also modelled to be subject to a negligible change. Therefore, we conclude no likely significant effect on River lamprey and Sea lamprey.

Emissions to Air

The Consultant modelled predicted annual and (where relevant) 24-hour emission concentrations at various receptor locations. The modelling was based on 24/7 operation of all plant to simulate a worst-case scenario, then the results were post-processed according to individual operating hours for each plant (A1-A3: 5723hrs; A4: 600hrs; A5: 8763hrs). The PCs, meaning the impact from the proposed activity taken in isolation, were then compared against the environmental standards outlined in our guidance to ascertain if the emissions were significant.

The Consultant found that long term NOx emissions either screen out as insignificant, or the PECs are found to be well under the critical level (CLe). Short term NOx results screen out as insignificant at some receptors however of note is receptor E3 (a location in Humber Estuary SSSI/SAC/SPA/Ramsar) where they do not screen out and the PEC is found to be 98.6%. As this is very close to the CLe we have firstly considered if the 200ug/m^3 environmental standard was appropriate at this location (which it was i.e. SO_2 and Ozone backgrounds are below their respective CLe) and then we have doubled the background and added the PC to see if this standard was threatened. There was still significant headroom left over even with this extreme scenario, therefore, we conclude that the impacts from short term NOx emissions will pose no likely significant effect on the designated features.

The Consultant found that SO_2 results screen out as insignificant at all receptors except for E3, where the PEC is then found to be well below the CLe. We therefore conclude no likely significant effect.

The Consultant found that acid deposition screens out at all receptor locations, however, our checks did not agree with this. Nevertheless, our checks showed that the resulting PEC would still be well below the critical load (CLo) and therefore we conclude no likely significant effect.

The Consultant found that nitrogen deposition screened out as insignificant at all receptor locations except E3, where the PC is >1% and the PEC is then found to be above the CLo. An appropriate assessment is required to determine the potential impacts (see HRA Stage 2 below).

Summary Conclusion Stage 1 Alone Assessment

We have concluded no likely significant effect for the River Derwent SAC as it has only screened in for migratory features and the impacts on water quality are materially contained within King George's Dock. We have concluded likely significant effect at all other designated sites but only for the risk of 'change in nutrients' due to potential exceedance of the nutrient nitrogen deposition environmental standard.

In Combination Assessment

Emissions to Air

A search of our work queue, our existing permitting stock and the local planning portal for applications that may serve to act in combination with this proposal was conducted. Whilst several applications and existing Installations (combustion/manufacturing/intensive farming) with similar emissions not yet contained in the background pollution data were identified, those emissions mostly screened out as insignificant or involved alterations to the permit which did not constitute any additional risk to the designated sites. Therefore, in line with our guidance, these sites were excluded from consideration.

North Killingholme Power Project, Killingholme, North Lincolnshire (EPR/FP3838EB/V004) however does have the potential to have a discrete impact upon saltmarsh habitats across the estuary. North Killingholme Power Project, much like this proposed permission, had potential nutrient nitrogen deposition impacts on saltmarsh (different geographical extent) which did not screen out. As for all other emissions from the North Killingholme Power Project, we conclude no likely significant effect in combination in line with the following reasoning:

- Long Term NOx was a maximum of 3.3% on the Humber designations but the significant impacts did not overlap with this proposed permission therefore there are no significant emissions to combine only the potential

for discrete impacts, as these impacts screened out under the environmental standards when combined with the background (PEC) we therefore conclude no likely significant effect in-combination.

- Short term NOx was a maximum of 24.8% of the 75 µg/m^3 standard however, the 200 µg/m^3 standard is relevant at this location and even if the effect of this permission was added to the calculation above (double the background + the PC from Saltend + the PC from North Killingholme Power Project) it still would not breach or threaten the 200 µg/m^3 standard. This is very conservative as the significant effects from both Installations are unlikely to overlap at any one given time due to their locations on opposing sides of the Humber and the prevailing wind direction. Therefore, we conclude no likely significant effect in-combination.

- SO_2 emissions were anticipated to be negligible for North Killingholme Power Project and were not assessed. Therefore, we conclude no effect in-combination.

- Acid deposition impacts from North Killingholme Power Project were modelled as insignificant (<1% of the standard) and therefore in line with our process on assessing air emissions we conclude that there is no likely significant effect in combination.

We have decided to carry out an appropriate assessment because significant effects alone could not be screened out in the HRA Stage 1 Assessment.

HRA Stage 2 – Appropriate Assessment

A Stage 2 HRA was carried out on the Humber Estuary SAC/ SPA/ Ramsar.

At Stage 1 significant effects could not be screened out, those effects requiring appropriate assessment are summarised below:

Qualifying feature	Risk (Pressure)	Likely significant effect alone Yes or No	Likely significant effect in combination Yes or No
Humber Estuary SAC (UK0030170)			
Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Change in nutrients	Yes	N/A Likely significant effect alone.
Humber Estuary SPA (UK9006111)			
All features associated with Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Change in nutrients	Yes	N/A Likely significant effect alone.
Humber Estuary Ramsar (UK11031)			
All features associated with Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Change in nutrients	Yes	N/A Likely significant effect alone.

Appropriate Assessment: Assessing the Effects Alone

Significant effects alone could not be screened out at Stage 1. Further consideration of the 'alone' effects are presented here:

Nutrient Deposition

Predicted nutrient deposition at receptor location E3 exceeded the significance threshold, and the PEC was found to be in excess of the applicable critical load.

The Operator submitted an ecological air quality report with their application, which contained isopleth maps showing the spatial extent of predicted significant impacts. Our checks produced contour plots that did not exactly match the Operator's; however, it was noted that the Operator's inputs were based on individual plant operating hours as opposed to full-year operation which was used

by us. It is therefore determined that the Operator's contour map can be used for assessment.

The only habitat within the areas of exceedance which is considered sensitive to nutrient deposition is coastal saltmarsh. We found the Operator's contour map to be highly conservative and that our own predictions indicated a risk of significant impacts over a much smaller area. The Air Pollution Information System (APIS) lists ranges for the CLo for this habitat and gives modifying criteria to aid in selection of the most appropriate CLo to use, namely that upper saltmarsh should be subject to the more stringent CLo. Checks of our saltmarsh mapping show that upper saltmarsh is present in the surrounding area and so a CLo of 10kgN/ha/year should be applied in those locations. It was noted that the Consultant's receptor locations do not appear to represent the worst-case locations for nutrient nitrogen deposition. Using the contour map it can be determined that the maximum point of impact would be in between receptor locations E1 and E3. There is no upper saltmarsh identified within this area, and so a higher CLo of 20kgN/ha/year can be applied. This leads to the PC being <1% of the CLo and therefore considered insignificant.

The areas outside the maximum impact do contain upper saltmarsh and so the lower CLo of 10kgN/ha/yr is applied. The contour map shows a predicted PC of 1.1% to 1.4% of the CLo. APIS does not have background load data for parts of those areas however the adjacent areas have a background load of 15.0 - 15.4kgN/ha/year. This leads to PECs of between 150.1% and 154.4% CLo.

Although the mean high water mark does not cover a substantial part of the affected upper saltmarsh it is likely to be subject to inundation on a semi-regular basis (we seek Natural England (NE) confirmation of this), the Humber Estuary is large macro-tidal coastal plain estuary with regular and substantial flushing with brackish water, and atmospheric inputs of nitrogen are considered insignificant compared to inputs from other sources such as agricultural runoff and tidal movements. The context of background aerial pollutant concentrations is also important here as Nutrient Nitrogen deposition and NOx are both generally falling year on year in the Humber (APIS), the introduction of the emissions caused by this proposed permission will not prevent the continued reduction such that it will hinder the conservation objectives of any designated site subject to this assessment.

Conclusion

Due to relatively small (but not insignificant) process contributions of nutrient nitrogen deposition, the trajectory of background pollution concentrations, potential for semi-regular inundation of the saltmarsh (which would make annual deposition of nutrients from the air almost redundant) and the fact that the proposed permission is likely to be operated at a lower intensity than presented in the modelling we conclude there will be no adverse effect and seek Natural England agreement with this conclusion.

Therefore, we conclude no adverse effect on the integrity of the Humber Estuary SAC/ SPA/ Ramsar. This conclusion is not dependent on mitigation measures or any conditions.

Appropriate Assessment: Assessing the Effects in Combination

'Alone' effects were considered above. It was concluded that there was no effect alone, but effects were not completely avoided. Assessment of 'in combination effects' are presented here:

North Killingholme Power Project, Killingholme, North Lincolnshire - We have undertaken a HRA on this application and this will be consulted upon shortly/simultaneously, the conclusion of the HRA is that there is no adverse effect due to occasional inundation of the saltmarsh and NE data suggesting the habitat has been maintained for the features of the SPA. This essentially formulates the conclusion for the in-combination assessment. This is in the context of falling nutrient nitrogen deposition, SO_2 and NOx levels as indicated on APIS. As mentioned above the two impacts are discrete as the isopleths for the emissions do not show an overlap of impacts above the significance criteria for any pollutant.

Therefore, we conclude no adverse effect in combination and no adverse effect on the integrity of the Humber Estuary SAC/ SPA/ Ramsar. This conclusion is not dependent on mitigation measures or any conditions.

Appendix 4 – SSSI Assessment

An Appendix 4 SSSI Assessment was carried out on Humber Estuary SSSI.

The features at risk within the SSSI are all either designated under the relevant European designated sites or are conservatively covered by the Stage 1 and 2 HRA. The conclusions and reasoning in the HRA are the same for this SSSI i.e. ‘not likely to damage’.

Based on this information, we conclude that the proposed permission is not likely to damage any of the flora, fauna or geological or physiological features which are of special interest.

Natural England was formally consulted on this application for the purposes of the HRA and Appendix 4 assessments.

Consultation with Natural England

We consulted Natural England on 7th April 2026 with our assessments. On 14th April 2026 Natural England agreed with our conclusion of no adverse effect on the integrity of the Humber Estuary SAC/ SPA/ Ramsar. And that the proposed permission is not likely to damage any of the flora, fauna or geological or physiological features of the Humber Estuary SSSI.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has not been made.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- Local Authority - Environmental Protection Department
- Health and Safety Executive
- UK Health Security Agency (previously Public Health England)
- Fisheries and Aquaculture Sciences
- Inshore Fisheries and Conservation - Humber Region
- Marine Management Organisation (MMO) - Humber Region
- Harbour and Port Authorities - Hull Port - Associated British Ports (ABP)

The comments and our responses are summarised in the consultation responses section.

The site

The Operator has provided plans which we consider to be satisfactory.

These show the extent of the site of the facility including the discharge points.

The plan is included in the permit.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation,

landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

For all site designations considered in this assessment, we have concluded no adverse effect.

We have consulted Natural England on our Habitats Regulation and SSSI assessments and taken their comments into account in the permitting decision.

See key issues for more discussion on the Habitats Assessment.

The decision was taken in accordance with our guidance.

Environmental risk

We have reviewed the Operator's assessment of the environmental risk from the facility.

The Operator’s risk assessment is satisfactory.

General operating techniques

We have reviewed the techniques used by the Operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the Operator must use are specified in table S1.2 in the environmental permit.

Operating techniques for emissions that do not screen out as insignificant

Nutrient nitrogen deposition cannot be screened out as insignificant. We have assessed whether the proposed techniques are Best Available Techniques (BAT).

The proposed techniques/ emission levels for emissions that do not screen out as insignificant are in line with the techniques and benchmark levels contained in the technical guidance and we consider them to represent appropriate techniques for the facility. The permit conditions enable compliance with relevant BAT reference documents (BREFs), BAT Conclusions, Industrial Emissions

Directive (IED) and Emission Limit Values (ELVs deliver compliance with BAT-Associated Emission Levels (AELs)).

Operating techniques for emissions that screen out as insignificant

Emissions of Oxides of Nitrogen (NO and NO_2 expressed as NO_2), sulphur dioxide (SO_2), carbon monoxide and dust have been screened out as insignificant, and so we agree that the Operator's proposed techniques are Best Available Techniques (BAT) for the Installation.

We consider that the emission limits included in the Installation permit reflect the BAT for the sector.

National Air Pollution Control Programme

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.

Updating permit conditions during consolidation

We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permit.

Raw materials

We have specified limits and controls on the use of raw materials and fuels.

Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme. The following improvement conditions (ICs) have been included in the permit:

IC1 - Commissioning
The Operator shall submit a commissioning plan to the Environment Agency for approval. The plan shall provide a summary of the environmental performance of the new plant (LCP693) as installed against the design parameters set out in the application and will include a review of the performance of the facility against the conditions of the permit and details of procedures developed during

commissioning for achieving and demonstrating compliance with permit conditions.

IC2 - Monitoring locations
The Operator shall submit a report on the assessment of air emissions monitoring locations during commissioning of the new LCP boiler (LCP693) to ensure that they comply with the monitoring requirements of the permit.

Emission limits

The Installation has a large number of permitted point source emissions to air and water. Most are unaffected by this variation. Details of the Emission Limit Values (ELVs) introduced and/or amended under this variation are given below.

ELVs for emission point A5 have been added for the following substances:

- Oxides of nitrogen (NO and NO2 expressed as NO2)
- Carbon Monoxide
- Sulphur dioxide
- Dust

The ELVs are based on the IED and/or LCP BREF – see key issues section for further information.

ELVs for emission point W1 have been amended for the following parameter:

- Temperature limit

It is considered that the temperature limit will prevent significant deterioration of receiving waters. We have included these limits based on the Thermal Discharge Report and Hydraulic Modelling note prepared by APEM Ltd (the Consultant) and the Environment Agency guidance note (Jonas 2015) for appropriate regulatory targets for TraC waters.

Monitoring

We have decided that monitoring should be added for emission point A5 for the following parameters, using the methods detailed and to the frequencies specified:

- Oxides of nitrogen (NO and NO2 expressed as NO2)
- Carbon Monoxide
- Sulphur dioxide
- Dust
- Oxygen

- Water vapour
- Stack gas temperature
- Stack gas pressure
- Stack gas volume flow
- As required by the Method Implementation Document for BS EN 15259
- Net total fuel utilisation

These monitoring requirements have been included in order for the Operator to demonstrate compliance with the emission limits specified in the permit and with the IED and LCP BREF. The Operator will carry out monitoring in accordance with the relevant methods specified in the permit.

Based on the information in the application we are satisfied that the Operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.

All other monitoring requirements remain unchanged by this variation.

Reporting

We have added reporting in the permit for emission point A5 for the following parameters:

- Oxides of nitrogen (NO and NO2 expressed as NO2)
- Carbon Monoxide
- Sulphur dioxide
- Dust

We have specified the reporting requirements in the Permit either to meet the reporting requirements set out in the IED, or to ensure data is reported to enable timely review by the Environment Agency to ensure compliance with permit conditions.

We have also taken the opportunity to include reporting forms CEM2 and CEM3 for utility boilers and turbines. These forms require the submission of calibration data whenever a new QAL2 calibration function is applied or when an existing function is validated through an Annual Surveillance Test (AST). CEM2 and CEM3 were introduced into the standard LCP reporting suite in November 2025.

We have updated permit condition 2.3.2 so that it now references the current version of the 'Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines'. This does not introduce any new requirements because the condition already allowed the use of 'any later version unless otherwise agreed in writing by the Environment Agency'. The change simply

updates the reference so that it aligns with the most recent version of the protocol and matches the wording used in our Large Combustion Plant permit template.

All other reporting requirements remain unchanged by this variation.

Management system

We are not aware of any reason to consider that the Operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on Operator competence and how to develop a management system for environmental permits.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance, and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate Operators because the standards applied to the Operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from **Local Authority - East Riding of Yorkshire Council**

Brief summary of issues raised:

- Local Authority received noise complaints in early November 2025, reported as a loud sound similar to a pressure release valve operating at night over two consecutive nights. The noise was heard by residents in Hedon and Preston and was widely believed to originate from Saltend Chemicals Park, though the exact source could not be confirmed. It is therefore uncertain whether the noise came from the existing Saltend Cogeneration Plant.
- Aside from this incident, the Local Authority is not aware of any ongoing noise issues, amenity problems, or enforcement actions related to this site.

Summary of actions taken:

We are not aware of any noise complaints associated with Saltend Cogeneration Plant (now Saltend Power Station). However, we are aware that there are numerous pressure-release valves operating across Saltend Chemicals Park, which makes that site a more likely source of noise than the power station. There are also several other potential noise sources in the wider area.

We have included our standard noise condition in the permit, which allows us to ask for a Noise Management Plan if we become aware of noise-related problems on site.

Response received from **UK Health Security Agency (previously Public Health England)**

Brief summary of issues raised:

- The UK Health Security Agency has no significant concerns regarding the risk to the health of the local population from the Installation.

Summary of actions taken:

No additional action required.

Response received from **Marine Management Organisation (MMO)**

Brief summary of issues raised:

- Marine licences are required for any works below Mean High Water Springs (MHWS), including construction, dredging, and depositing or removing materials in tidal areas from the MMO.
- MMO manages consents for offshore generating stations, Harbour Orders, and wildlife licences affecting protected marine species.
- If planning permission is required Operators should reference Local planning authority, Planning officer and contact details and Planning application reference.
- Projects requiring a marine licence may also require an Environmental Impact Assessment (EIA) under the Marine Works (EIA) Regulations 2007.
- Some developments may fall under both marine and terrestrial EIA regimes; Operator should consult MMO directly.
- Marine Plans must be considered in decision-making and apply up to MHWS, overlapping with terrestrial planning boundaries.
- Planning documents with coastal influence should reference MMO licensing requirements and relevant Marine Plans.
- Minerals/waste plans and Local Aggregate Assessments should acknowledge the role of marine aggregates, as highlighted in the MPS, NPPF, MASS and national/regional supply guidelines.

Summary of actions taken:

No additional action required. The above response from the MMO is generic and does not cover the specifics of the variation application.