

## Permitting Decisions- Substantial Variation

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We have decided to grant the variation for Grimsby A & B Peaking Plant operated by RWE Generation UK PLC.

The variation number is EPR/WP3036QH/V003.

The variation is to authorise additional medium combustion plant (MCP) as follows:

4 x 9.9 MWth and 1 x 6.1 MWth natural gas fired reciprocating engines (i.e., a total additional net thermal input of 45.7 MWth). This new plant is referred to as 'Grimsby B'. Grimsby A & Grimsby B will form a single installation but will be able to operate completely independently of one another as peaking plant. Grimsby A & B can operate for up to 1,500 hours per year as a rolling average over a period of five years and with operation in any individual year limited to a maximum of 2,250 hours. The 1,500 hours applies to the entire installation.

Grimsby B will be located on land to the east of the existing Grimsby A plant.

The existing permit allows Grimsby A (10 x 4.8 MWth) to operate for up to 1,500 hours per year. As a combustion plant having a gross thermal input of < 50 MWth, the Grimsby A peaking plant was permitted as MCP/sector generator (SG) under Schedules 25A and 25B of the EPR.

The addition of the new Grimsby B natural gas fired reciprocating engines results in the overall net thermal input for the Grimsby A & B peaking plant increasing from 48 MWth to 93.7 MWth. As a result of this increase in net thermal input to > 50 MWth, the peaking plant is an activity listed in Schedule 1 of the EPR:

Section 1.1 Part A(1)(a): Burning of any fuel in an appliance with a rated thermal input of 50 or more megawatts (MW).

The gas fired engines are classed as MCPs as part of an Industrial Emissions Directive (IED) Chapter II installation.

The variation also reduces the oxides of nitrogen (NO<sub>x</sub>) emission limits for Grimsby A peaking plant from 190 mg/Nm<sup>3</sup> to 100 mg/Nm<sup>3</sup>.

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
- shows how we have considered the consultation responses

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

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

## Key issues of the decision

### AIR QUALITY

The applicant submitted detailed air dispersion modelling and impact assessment to assess the predicted impacts from emissions of oxides of nitrogen (NO<sub>x</sub>) on human receptors and ecological sites, as appropriate. This was detailed in document 'Air Quality Impact Assessment, reference ENV702/2022, dated June 2022 (Issue 1.0)'.

A methodology for risk assessment of point source emissions to air is set out in our guidance at [Air emissions risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](http://www.gov.uk).

The assessment assumes maximum impacts at locations of relevant exposure that will occur in a scenario where all 15 engines (i.e. the five proposed Grimsby B gas engines and the 10 existing Grimsby A gas engines) are assumed to be running simultaneously at full load for 1,500 hours/year.

The impacts are based on NO<sub>x</sub> limits of:

- 190 mg/Nm<sup>3</sup> for Grimsby A gas engines; and
- 95 mg/Nm<sup>3</sup> for Grimsby B gas engines.

Note that the applicant has since proposed to lower the limits for Grimsby A gas engines from the current MCPD limit of 190 mg/Nm<sup>3</sup>, to 100 mg/Nm<sup>3</sup>, refer to 'Westfield LWS – Environment Agency additional assessment' and 'MCPD and setting limits for emissions to air' sections of this document. The conclusions below are based on the higher 190 mg/Nm<sup>3</sup> limit and are therefore conservative.

The applicant's assessment includes:

**Process contribution (PC)** - The impact from the PC of the Grimsby B gas engines only

**Combined contribution (CC)** – The combined impact of the Grimsby A and Grimsby B gas engines

**Predicted environmental concentration (PEC)** – The impacts combining background concentrations and CC (Grimsby A and Grimsby B gas engines). There will be a degree of double counting of the existing operational Grimsby A gas engines in the background concentrations. The PEC figures are therefore very conservative.

The PC and PEC were assessed against the relevant Environmental Standards (ESs).

### **Human receptors**

We agree with the applicant's conclusions that the impact of the emissions at human receptors is not significant.

### **Humber Estuary: Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar and Site of Special Scientific Interest (SSSI)**

The applicant's modelling predicts impacts at the closest point in the Humber Estuary, **R4** (525600, 411700), which is approximately 400 m from the Grimsby B gas engines.

Impacts are also predicted at **X3** (525821, 411971), which is located 350 m out from the coast to assess the decrease in NO<sub>x</sub> impacts with distance from the estuary coastline.

For short-term impacts, we have not presented the applicant's results from the 98.40<sup>th</sup> percentile in the tables below. Refer to our audit of the assessment below.

R4 receptor

(approximately 400 m from the Grimsby B gas engines)

ES (critical levels and loads)	Back- ground	PC	CC	PC as % of ES	CC as % of ES	PEC	PEC as % ES
Direct impacts <sup>Note 1</sup>							
30 (annual)	16.2	0.9  Note 2	3.2	3  Note 2	10.67	19.4 Note 4	64.67 <sup>Note 4</sup>
75 (daily)	32.4	30.5	108	40.67	144	140.4	187.2
200 Note 3 (daily)		30.5	108	15.25	54	140.4	70.2
Nitrogen deposition impacts <sup>Note 1</sup>							
20	17.7	0.13 Note 2	0.46	0.65 Notes 2 & 5	2.3	18.16 Note 4	90.8 <sup>Notes 4 &amp; 5</sup>
<p>Note 1: Direct impact units are µg/m<sup>3</sup> and deposition impact units are kg N/ha/yr.</p> <p>Note 2: For long-term impacts, we agree with the applicant that this can be represented by impacts from Grimsby B only (see results from our audit below).</p> <p>Note 3: Our audit confirmed that the higher daily ES is relevant at this receptor.</p> <p>Note 4: This PEC includes background concentrations and CC (Grimsby A and Grimsby B gas engines).</p> <p>Note 5: Our audit predicts an exceedance (see results from our audit below).</p>							

### Long-term impacts

Direct impacts - Based on the PC from Grimsby B only, the PC is 3% of the ES, so does not screen out as insignificant (i.e. >1%). The PEC is 64.67% of the ES, however if we just include the PC from Grimsby B only and add this to the background in accordance with Note 2 of the table above, the PEC reduces to 57%.

Deposition - Based on the PC from Grimsby B only, nitrogen deposition impacts are screened out as insignificant.

### Short-term impacts

Direct impacts - Based on the higher ES, the CC is 54% of the ES. This is above the 10% screening threshold, and we have carried out an appropriate assessment, see below.

The applicant did not assess against the higher ES. They justified the exceedance of the lower ES (187.2%) due to the exceedance only covering a small area of the site and the assessment considering worst-case scenarios unlikely to correspond to the actual operating scenario.

They state that the small area predominantly consists of tidal mudflats and the risk of impact on this small area would be expected to be very low as they will contain little vegetation and the inter-tidal nature of the estuary will limit exposure of the tidal mudflats to atmospheric NO<sub>x</sub>.

### X3 receptor

(350 m out from the coast to assess the decrease in NOx impacts)

ES (critical levels and loads)	Back-ground	PC	CC	PC as % of ES	CC as % of ES	PEC	PEC as % ES
Direct Impacts <sup>Note 1</sup>							
30 (annual)	16.2	0.4 <sup>Note 2</sup>	1.3	1.33 <sup>Note 2</sup>	4.43	17.5 <sup>Note 4</sup>	58.33 <sup>Note 4</sup>
75 (daily)	32.4	14.6	50.6	19.47	67.47	83	110.67
200 <sup>Note 3</sup> (daily)		14.6	50.6	7.3	25.3	83	41.5
Nitrogen deposition Impacts <sup>Note 1</sup>							
20	-	0.05 <sup>Note 2</sup>	0.19	0.25 <sup>Note 2</sup>	0.95	-	-
<p>Note 1: Direct impact units are µg/m<sup>3</sup> and deposition impact units are kg N/ha/yr.</p> <p>Note 2: For long-term impacts, we agree with the applicant that this can be represented by impacts from Grimsby B only (see results from our audit below).</p> <p>Note 3: Our audit confirmed that the higher daily ES is relevant at this receptor.</p> <p>Note 4: This PEC includes background concentrations and CC (Grimsby A and Grimsby B gas engines).</p>							

### Long-term impacts

Direct impacts - Based on the PC from Grimsby B only, the PC is 1.33% of the ES, so does not screen out as insignificant (i.e. >1%). The PEC is 58.33% of the ES, however if we just include the PC from Grimsby B only and add this to the background in accordance with Note 2 of the table above, the PEC reduces to 55.33%.

Deposition - Nitrogen deposition impacts are screened out as insignificant.

Short-term impacts

Direct impacts - Based on the higher ES, the CC is 25.3% of the ES. This is above the 10% screening threshold, and we have carried out an appropriate assessment, see below.

The applicant did not assess against the higher ES. They justified the exceedance of the lower ES (110.67%) due to the exceedance only covering a small area of the site, refer to the full justification above for the R4 receptor.

Westfield local wildlife site (LWS) R5

ES (critical levels and loads)	Back-ground	PC	CC	PC as % of ES	CC as % of ES	PEC	PEC as % ES
Direct Impacts <sup>Note 1</sup>							
30 (annual)	16.2	2.9 <sup>Note 2</sup>	10.9	9.67 <sup>Note 2</sup>	36.33	27.1 <sup>Note 4</sup>	90.33 <sup>Note 4</sup>
75 (daily)	32.4	94.8	319.7	126.4	426.27	352.1	469.47
200 <sup>Note 3</sup> (daily)		94.8	319.7	47.4	159.85	352.1	176.05
<p>Note 1: Direct impact units are µg/m<sup>3</sup>.</p> <p>Note 2: For long-term impacts, we agree with the applicant that this can be represented by impacts from Grimsby B only (see results from our audit below).</p> <p>Note 3: Our audit confirmed that the higher daily ES is relevant at this receptor.</p> <p>Note 4: This PEC includes background concentrations and CC (Grimsby A and Grimsby B gas engines).</p>							

Long-term impacts

Direct impacts - Based on the PC from Grimsby B only, the PC is 9.67% of the ES, so does not screen out as insignificant (i.e. >1%). The PEC is 90.33% of the ES, however if we just include the PC from Grimsby B only and add this to the background in accordance with Note 2 of the table above, the PEC reduces to 63.67%.

Deposition – Not applicable.

### Short-term impacts

Direct impacts - Based on the higher ES, the CC is 159.85% of the ES, i.e. it is exceeding the ES.

### **Environment Agency habitats assessment/audit**

We do not fully agree with the applicant's assessment of impact at ecological receptors.

### Ecological receptors - short-term NOx

98.40<sup>th</sup> percentile - They estimated the ecological PC impact of short-term NOx concentrations by modelling the 100.00<sup>th</sup> and 98.40<sup>th</sup> percentile of daily mean NOx impacts for continuous operation of the proposed Grimsby B gas engines at full load. They propose that the 98.40<sup>th</sup> percentile is a more realistic prediction of impacts. We do not consider this approach appropriate.

Grimsby B only – We do not consider this approach appropriate. Combined PCs from both existing and proposed engines should be considered when assessing short-term impacts.

Background concentrations - Applying long-term averaged background concentrations to short-term PCs will not capture short-term peaks in pollutant concentrations from the site caused by weather events and may potentially lead to under-predictions.

### Ecological receptors - short-term NOx critical level

We have identified that the higher short-term daily NOx critical level of 200 µg/m<sup>3</sup> is appropriate for the Humber Estuary SAC, SPA, Ramsar and SSSI and the Westfield LWS.

### Ecological receptors - long-term NOx

The applicant has based their assessment against the long-term NOx from the proposed Grimsby B only, an approach we agree with. We agree with the applicant's assumptions that the existing site PCs will likely be contained in the background pollutant concentrations.

### Other LWS

We identified three additional LWSs within 2 km of the site (Sweedale Croft Drain, River Freshney Grimsby and Freshney Parkway (North)) and modelled for both annual and daily predicted NOx PCs. We predicted no exceedances of the relevant ESs.



## Exceedances of ESs

Our modelling indicated the following exceedances of ESs:

<b>Ecological site</b>	<b>ES exceedance</b>
Humber Estuary (R4)	Nitrogen deposition <sup>Note 1</sup>
Westfield LWS	Short-term NO <sub>x</sub> <sup>Note 2</sup>
Note 1: Our sensitivity analysis indicated a potential exceedance of the 1% threshold for nitrogen deposition, however the potential exceedance is considered marginal and within modelling uncertainties.	
Note 2: This even applies with the higher ES.	

Humber Estuary (R4) –We have carried out a Habitats Regulations Assessment (Stage 1 & 2) and a SSSI assessment and consulted with Natural England, see below.

Westfield LWS - We did not agree with the applicant's conclusions, see assessment below.

### **SAC, SPA Ramsar - Environment Agency Habitats Regulations Assessment (Stage 1 & 2)**

We carried out screening for likely significant effects at the Humber Estuary SAC, SPA and Ramsar, required by Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended). This was initially sent to Natural England for consultation 19 September 2023. This was updated to address comments, with the final assessment dated 28 November 2023, sent 30 November 2023.

The full detail of our assessment is available on our Public Register.

Emissions that screen out as insignificant at stage 1, do not require an in-combination assessment in line with our guidance. Those that did not screen out have been taken to the appropriate assessment, stage 2.

Note that this assessment was based on the higher NO<sub>x</sub> limit for the Grimsby A gas engines of 190 mg/Nm<sup>3</sup>. The applicant has since proposed to lower the limits for these engines from the current MCPD limit of 190 mg/Nm<sup>3</sup>, to 100 mg/Nm<sup>3</sup>, refer to 'Westfield LWS – Environment Agency additional assessment' and 'MCPD and setting limits for emissions to air' sections of this document.

### Long-term NOx (effect alone)

Long term NOx did not screen out as insignificant. The PEC is below 70%, the point at which we would carry out an in-combination assessment as indicated in our AQTAG 21 document. As it is below this threshold and the PC is relatively low, there is enough headroom at the designated site to ensure the critical level is not exceeded.

We conclude no likely significant effect.

### Acid deposition (effect alone)

Impacts screened out as insignificant. We do not carry out in-combination assessments for emissions to air which screen out under the conservative significance criteria.

We conclude no likely significant effect.

### Short-term NOx (includes stage 2 assessment)

As part of our audit (see above), we have confirmed that a critical level of 200 µg/m<sup>3</sup> is suitable for this location, The combined effects of both Grimsby A and B are above the 10% screening criteria, we have therefore taken this through to appropriate assessment, stage 2 (note that we do not combine short-term effects with the background at stage 1).

For stage 2 we conclude no adverse effect on the integrity of the sites. This conclusion is not dependent any mitigation measures or conditions.

### Nutrient nitrogen deposition (includes stage 2 assessment)

Nitrogen deposition was modelled by the applicant as screening out under the significance criteria. During our audit we found that sensitivity checks indicated actual effects may exceed the 1% significance criteria.

We conclude likely significant affect alone.

As the background for nutrient nitrogen deposition already exceeds the ES, we have taken this risk to the appropriate assessment, stage 2.

For stage 2 we conclude no adverse effect on the integrity of the sites. This conclusion is not dependent any mitigation measures or conditions.

### **SSSI - Environment Agency assessment**

We carried out an assessment for activities likely to damage the Humber Estuary SSSI, required under Section 28I of the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act (CRoW) 2000). This was initially sent to Natural England for consultation 19 September 2023.

The full detail of our assessment is available on our Public Register.

We conclude there will be no damage to the SSSI from emissions of NO<sub>x</sub>, nitrogen deposition and acid deposition.

Note, as with the habitat's regulation assessment above, this assessment was based on the higher NO<sub>x</sub> limit for the Grimsby A gas engines of 190 mg/Nm<sup>3</sup> and not the lower limit of 100 mg/Nm<sup>3</sup>.

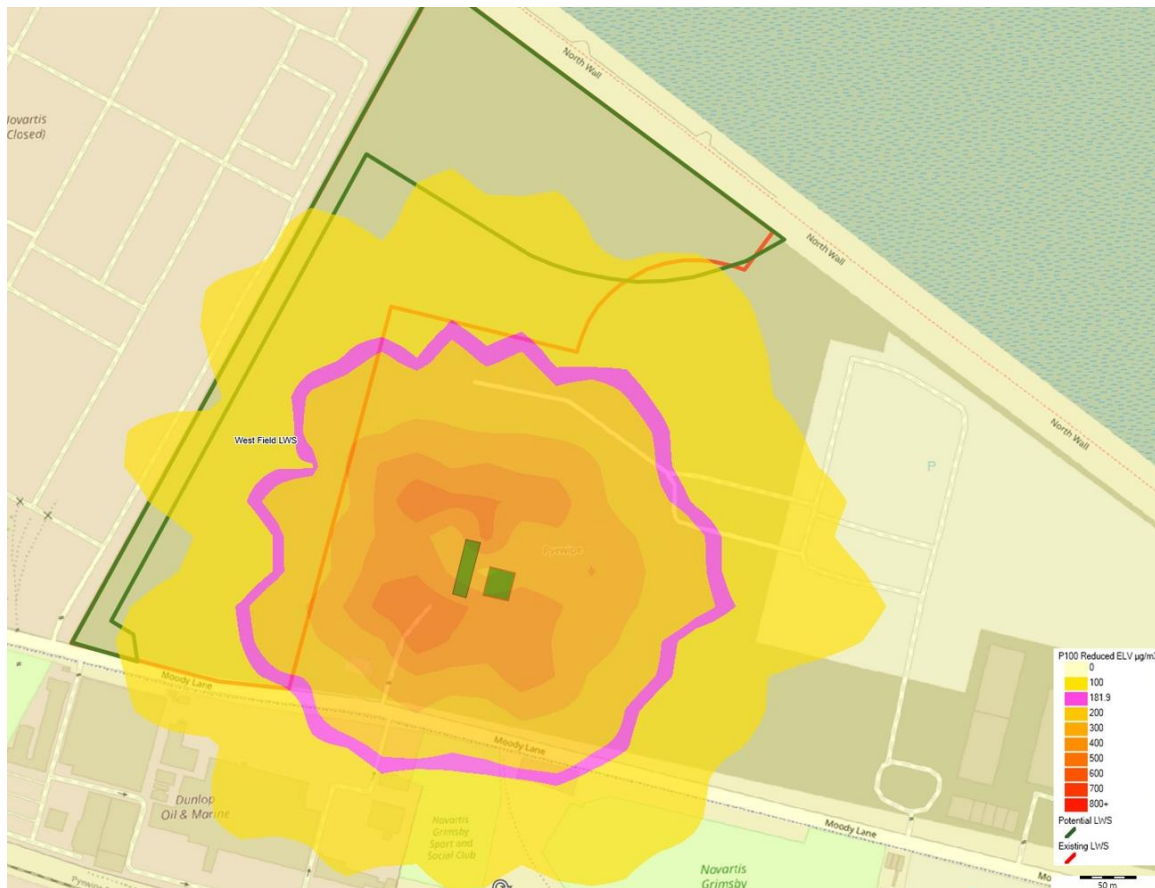
### **Westfield LWS - Environment Agency additional assessment**

The applicant has proposed to lower the limits for Grimsby A gas engines from the current MCPD limit of 190 mg/Nm<sup>3</sup> to 100 mg/Nm<sup>3</sup>. This was confirmed in their submission 'Assessment of Impacts at Westfield Local Wildlife Site', reference ENV/731/2023, dated December 2023.

We remodelled impacts from short-term NO<sub>x</sub> based on limits of:

- 100 mg/Nm<sup>3</sup> for Grimsby A gas engines (previously impacts were based on 190 mg/Nm<sup>3</sup>); and
- 95 mg/Nm<sup>3</sup> for Grimsby B gas engines.

There are no predicted exceedances of the ES for the changed LWS boundary highlighted in green, see further detail below. The existing LWS boundary is highlighted in red.



The applicant confirmed that planning permission was granted to ABP in 2017 to develop part of the LWS into a lorry park. We contacted North East Lincolnshire Council (Greater Lincolnshire Nature Partnership) to determine future plans for designation of the LWS. They confirmed that they would be looking to de-designate the LWS. They also confirmed that the smaller ecological mitigation area (green boundary on the plan above) is owned by ABP and has not been successful, so it is unsuitable for LWS designation.

The Council concluded that emissions will not have an impact on the LWS due to its expected de-designation.

The smaller ecological mitigation area marked in green was a planning requirement to mitigate for the partial loss of the LWS.

Based on the lower NOx emissions of 100 mg/Nm<sup>3</sup> from the Grimsby A gas engines, we conclude that whether the decision is to:

- alter the LWS boundary (which seems unlikely); or
- to de-designate the LWS (most likely);

in either scenario there should be no damage to the remaining LWS. This is in accordance with our guidance on risk assessing emissions to air: [Air emissions risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit).

### **Installation listed activity**

The addition of the new Grimsby B natural gas fired engines will result in the overall net thermal input for the Grimsby A & B peaking plant increasing from:

48 MWth to 93.7 MWth.

As a result of this increase in net thermal input to > 50 MWth, the peaking plant will change from a Schedule 25B specified generator to an installation activity listed in Schedule 1 of the Environmental Permitting Regulations 2018 (EPR):

Section 1.1 Part A(1)(a): Burning of any fuel in an appliance with a rated thermal input of 50 or more megawatts (MW).

The gas fired engines are also classed as medium combustion plant (MCP) as part of an Industrial Emissions Directive (IED) Chapter II installation.

### **Best available technique (BAT)**

Although generators operating within installation permits are excluded from the scope of Schedule 25B of EPR 2018 – Specified Generators, these generators will be subject to the same requirements of specified generators as minimum BAT and, where applicable, to Medium Combustion Plant Directive (MCPD) requirements.

Regulation includes requirements arising from the EPR and the MCPD, see below. These requirements mean that the gas engines will also need to comply with obligations arising from BAT considerations.

As part of the permit determination, we need to ensure compliance with Article 11 of the IED which states that BAT are applied. BAT requires the use of the most effective and advanced techniques to prevent or minimise emissions and impacts on the environment.

Combustion plant which are subject to Chapter II of the IED are not specifically referred to within the scope of the Large Combustion Plant (LCP) BAT Conclusions. IED Annex III stipulates the criteria for determining BAT, where there are no BAT conclusions, as using comparable processes, facilities or methods of operation. Therefore, although these operations do not fall under Chapter III, as they are not LCP, they are a comparable process and analogies can be drawn to help form our decision for what is considered appropriate BAT.

Relevant guidance that we have drawn on, for BAT, includes the Department of Energy and Climate Change 'Developing best available techniques (BAT) for combustion plants operating in the balancing market', Chapter III of IED and the LCP BAT conclusions; all of which specifically identify two categories of combustion plant operating in the balancing market as peaking plant:

- those that operate <500 hours/year; and
- those that operate from 500 hours up to 1,500 hours/year.

Within these documents no other categories of operational regimes are recognised other than base load operation.

The existing Grimsby A gas engines are limited to a maximum of 1,500 hours of operation per year. Grimsby A & B can operate independently to one another or could be called upon to operate concurrently as required by the National Grid.

This 1,500 hour limit will now apply to the entire installation, i.e. Grimsby A & Grimsby B gas engines

Due to the limited hours of availability and, given that the facility is to operate as a peaking plant, the actual number of hours operated will vary year to year dependant on grid requirements, and cannot be predicted. It is therefore not considered appropriate for cogeneration (combined heat and power (CHP)) or district heating use under Article 14 of the Energy Efficiency Directive. We agree with this conclusion.

Natural gas reciprocating engines operating as peaking plant are classed as fast start, lower efficiency and would generally have higher emissions of NO<sub>x</sub> per megawatt hour of energy produced than would be expected for natural gas fired base load plant. Therefore, reciprocating engines are better suited to fast reserve running for short periods of time in comparison to base load plants which are more appropriate for steady state running operations.

The National Emissions Ceiling Directive (NECD) sets national targets for reductions in pollutants including NO<sub>x</sub>. Restrictions on plants with higher NO<sub>x</sub> intensity directly contributes to achieving the NECD targets.

For this reason, the permit restricts the hours of operation of the installation as a whole (not per engine) to no more than 1,500 hours per year as a rolling average over a five-year period and with operation in any individual year limited to a maximum of 2,250 hours.

### Combustion technology

The applicant has considered reciprocating engines as the most suitable technology and BAT for their proposal. They have stated that, for peaking plant, reciprocating engines are well suited to fast reserve as they are capable of quick start-up and shut-down times and that small individual engines can be run at optimum loading and hence optimum efficiency. Furthermore, they provide the necessary flexibility required for the peaking plant.

We agree that the use of reciprocating engines can be considered BAT for peaking plant that are limited to no more than 1,500 hours per year as set out in the section above.

### Fuel type

The applicant has chosen to operate their proposal using mains supply natural gas. Natural gas represents the most reliable and least polluting fuel available. The use of natural gas means that there will be negligible emissions of sulphur dioxide and particulates. Furthermore, they propose to use lean burn engines that will emit quantities of NO<sub>x</sub> that comply with the MCPD.

The choice of mains gas also minimises the requirement to store significant quantities of fuel on site. We are satisfied that mains supply natural gas represents BAT in terms of fuel choice for this installation.

### Primary emissions controls

The engines operate using the principle of lean burn combustion to offer a high rate of efficiency and a primary method of minimising exhaust emissions to air. We are satisfied that this is BAT for the installation.

### Cooling system

The applicant has chosen the use of air-cooled condensers to be the most appropriate, consistent with Grimsby A. Air cooling can be considered BAT for the proposed peaking plant due to low operational periods, lower visual impacts due to negligible plume generation and preventing effluent releases.

We agree with the applicant, that the use of air-cooled condensers can be considered BAT for this installation.

### Stack height

The applicant assessed the effect of varying the stack height for the Grimsby B gas engines. They concluded that the proposed stack height of 12.5 m for the Grimsby B gas engines provides a suitable compromise between reducing air quality impacts and reducing visual impacts and was therefore judged to be BAT compliant.

We agree with the applicant, that the proposed stack height can be considered BAT for this installation.

### **MCPD and settling limits for emissions to air**

The MCPD requirements are implemented via the EPR; these apply to 1-50 MWth combustion plant. There are different requirements for plant put into operation before 20th December 2018 (classed as 'existing' plant) and after that date (classed as 'new' plant).

The Grimsby A gas engines were put into operation before 20th December 2018, so are classed as 'existing'.

The proposed Grimsby B gas engines would be expected to start operation in 2024, so are classed as 'new'.

Based on the potential impacts at the LWS (see above) the applicant has proposed to lower the limits for Grimsby A gas engines from the current MCPD limit of 190 mg/Nm<sup>3</sup>, to 100 mg/Nm<sup>3</sup>. Monitoring data demonstrates that the engines can comply with this lower limit. The permit implements these requirements.

The permit implements the NOx MCPD limit for the Grimsby B gas engines.

<b>Gas engines</b>	<b>NOx emission limit (mg/Nm<sup>3</sup>, dry, 15% oxygen)</b>
<b>Grimsby A 'existing' (current limit)</b>	190
<b>Grimsby A 'existing' (proposed limit)</b>	100
<b>Grimsby B 'new' (MCPD limit)</b>	95

## **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 Health and Planning Departments

Food Standards Agency (FSA)

Health and Safety Executive (HSE)

UK Health Security Agency (UK HSA) (Previously Public Health England (PHE)) and the relevant Director of Public Health



National Grid

Natural England (consulted on our assessments for the SAC, SPA, Ramsar and SSSI, see above)

The comments and our responses are summarised in the 'Consultation responses' section.

## **The regulated facility**

We considered the extent and nature of the facility at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN2 'Defining the scope of the installation' and Appendix 1 of RGN 2 'Interpretation of Schedule 1'.

The addition of the new Grimsby B natural gas fired engines will result in the overall net thermal input for the Grimsby A & B peaking plant increasing to 93.7 MWth. As a result of this increase in net thermal input to > 50MWth, the peaking plant will be an activity listed in Schedule 1 of the EPR, refer to 'Installation listed activity' section of this document.

The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

## **The site**

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

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

The plan is included in the permit.

## **Site condition report**

The applicant has provided a description of the condition of the site, which we consider is not satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the IED.

The applicant has confirmed that baseline data is required and suggested that this is provided via an improvement condition. We agree that baseline data is required. Given the low-risk nature of the operations and the overriding requirement for energy security, we have set improvement conditions to address this deficiency. Refer to 'Improvement programme' section of this document.

## **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:

Humber Estuary: SAC, SPA, Ramsar and SSSI.

LWSs: West Field, Freshney Parkway (North), River Freshney Grimsby and Sweedale Croft Drain.

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.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified, refer to 'Key issues' section of this document.

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

## **Environmental risk**

For emissions to air, refer to 'Air quality' section of this document.

An assessment of the potential noise impacts associated with the operation of Grimsby A & B peaking plant was provided in Appendix E of the application (Noise impact assessment (NIA)).

The NIA assessment concludes that the operational sound from the overall installation would present a negligible adverse impact on the closest residential, commercial and ecological receptor.

Regarding impacts from noise, we consider the proposal to be of a low noise risk for the following reasons:

- Site/receptors located within large industrial area in port town of Grimsby.
- Receptors located near dual carriageway A180.

- Large distance between site and receptors (510 m to Premier Inn hotel, around 900 m to the nearest residences).
- Proposed gas engines are fully enclosed.
- Our qualitative noise screening assessment tool screens out the requirement for a NIA or a noise management plan (NMP) when considering the combined existing and proposed operations.
- Low impacts predicted in the NIA and rating level well below background levels.

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

The applicant's risk assessment is satisfactory.

## **General operating techniques**

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

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

## **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.

## **Pre-operational conditions**

Based on the information in the application, we consider that we need to include a pre-operational condition requiring the applicant to provide details for lubricating oil storage including location and control measures in place. This detail was not known at the time of the application.

## **Improvement programme**

Based on the information in the application, we consider that we need to include an improvement programme.

### Methane slip and formaldehyde production

There is insufficient evidence regarding the effects of lean burn on methane slip and formaldehyde production by oxidation. Improvement Conditions IC1 and IC2 have been included to:

- establish these emission levels;
- compare them with the manufacturer's specifications and appropriate benchmark levels; and
- undertake an assessment of the impacts of formaldehyde in line with our H1 guidance or equivalent methodology.

These improvement conditions are applied to all new installations using gas engines to serve the balancing market on the electricity grid.

Establishing methane and formaldehyde emissions may be undertaken by making reference to / validating operation in line with - the manufacturers specification – or using any other approach which is underpinned by the application of technical guidance which is acknowledged by us as representing best practice.

Any ongoing permit requirements shall be evidence based and proportionate to the environmental risk.

### Site condition report (SCR)

We have set improvement conditions IC3 and IC4 to address deficiencies with the SCR which the applicant agreed to address following the issue of this variation. We consider this approach to be appropriate as the facility is low risk, with storage of small quantities of waste oil from maintenance activities.

The SCR does not provide detail of the condition of the soil and groundwater associated with the extended installation boundary. We have therefore included the improvement conditions requiring the applicant to provide their proposals for a baseline study (IC3). After approval, IC4 requires a baseline report to be provided presenting the results of the investigation. IC4 also requires proposals for future monitoring of soil and groundwater as required by permit condition 3.1.3, in order to meet the requirements of the IED.

## Monitoring location

We have set improvement condition IC5 to ensure the following:

- That the location provides provision for representative samples of the emissions to air;
- That the location takes into account our monitoring guidance at Monitoring stack emissions: measurement locations - GOV.UK (www.gov.uk) and EN 15259 at the design stage;
- Compliance with EN 15259 can only be fully assessed once the plant is permitted and operational.

## Performance of the plant

We have set improvement condition IC6 to ensure the performance of the plant as installed is consistent with the design parameters set out in the application.

## **Emission limits**

Emission limits have been set for NO<sub>x</sub>, refer to section 'MCPD and settling limits for emissions to air' in this document.

## **Monitoring**

We have specified monitoring of emissions of NO<sub>x</sub> and carbon monoxide from emission points A1 to A15 (Grimsby A & B) annually.

We have set an annual monitoring frequency, which is more frequent than once every three years required by the MCPD. We consider this approach to constitute BAT for the facility – with the legal justification for setting these monitoring requirements being provided by Article 14 (6) of the IED (2010).

Article 14 (6) states “where an activity or a type of production process carried out within an installation is not covered by any of the BAT conclusions or where those conclusions do not address all the potential environmental effects of the activity or process, the competent authority shall, after prior consultations with the operator, set the permit conditions on the basis of the best available techniques that it has determined for the activities or processes concerned, by giving special consideration to the criteria listed in Annex III”.

We consider it to be reasonable, justifiable and proportionate to set monitoring requirements which are more frequent than that specified by the MCPD, to prevent any future deterioration in environmental performance (known as “backsliding”).

For emission points A11 to A15 (Grimsby B) we have also specified monitoring once within four months of the issue date of this variation, or the date when the engines are first put into operation, whichever is later. This monitoring has been included in the permit in order to comply with the requirements of the MCPD.

We have retained the MCERTS monitoring requirement for emission points A1 to A10 and included MCERTS monitoring for A11 to A15.

## **Reporting**

We have specified annual reporting in the permit, consistent with the monitoring frequency.

Annual reporting is also required for power generated and performance parameters, which includes the engine operating hours to confirm compliance with permit condition 2.3.6.

## **Management system**

We are not aware of any reason to consider that the applicant will not have the management system to enable them 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.

## **Previous performance**

We have assessed operator competence. There is no known reason to consider the applicant will not comply with the permit conditions.

## **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 and 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 UK Health Security Agency (UK HSA)**

Environmental Public Health Scientist dated 15 September 2023

#### Brief summary of issues raised:

That there is a nearby receptor which has not been identified in the risk assessments. We recommend Orchard education, a nearby special educational needs school (1 Sargon Way, Great Coates, Grimsby DN37 9PH) is considered as a receptor in any site environmental risk assessments and management plans going forward.

#### Summary of actions taken:

We have forwarded the response to the applicant to inform any future assessments.

We carried out our own checks and this did not change any of our conclusions.

### **North East Lincolnshire Council**

Refer to 'Westfield LWS – Environment Agency additional assessment' section of this document for our advice from North East Lincolnshire Council (Greater Lincolnshire Nature Partnership) regarding the LWS.