

# Stage 1 Habitats Regulations Assessment

## Environment Agency record of screening for likely significant effects

This is a record of the screening for likely significant effects required by Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended), undertaken by the Environment Agency in respect of the permission, plan or project (PPP) detailed in Section 1, for the following relevant site(s):

Chesil and the Fleet SAC (UK0017076)^~

Crookhill Brick Pit SAC (UK0030349)^

Isle of Portland to Studland Cliffs SAC (UK0019861)^

Studland to Portland SAC (UK0030382)~

Chesil Beach and The Fleet SPA (UK9010091)^~

Chesil Beach and The Fleet Ramsar (UK11012)^

Version: Final – 11/08/2023

This record was sent to Natural England for consultation.

An additional component charge for habitats assessment was levied for this application.

A glossary of acronyms used in this assessment is included in Appendix A.

## 1. Permission, plan or project (PPP) details

**Type of PPP:** Environmental Permit (PPC Installations)

**Environment Agency reference:** EPR/AP3304SZ/A001

**National grid reference:** SY6960774248

**Site/project name or reference:** Portland Energy Recovery Facility (ERF)  
EPR/AP3304SZ/A001

## 2. Description of proposal

Construction and operation of a new Energy from Waste (EfW) plant, with one incineration line and a maximum capacity of 202,000 tonnes of waste per annum (more typically expected to be ~183,000 tonnes per annum), generating approximately 15.2MWe electricity for export to the grid. If permitted, would be under EPR Section 5.1 Part A(1)(b) – incineration of >3t/h of non-hazardous waste, and would operate under IED/ BREF incineration limits.

The Applicant proposes use of air-cooled condensers, so there is no need for water abstraction or discharge of cooling water. Surface water run-off from vehicle

movement areas, roadways and building roofs will be collected in a surface water drainage system. The surface water drainage system will be fitted with a retention interceptor and swales, prior to the discharge point, to prevent discharge of oils and sediment collected from vehicle movement areas and roadways being released off-site. All such uncontaminated surface water run-off will be discharged, via separate discharge points, to Balaclava Bay (east) and/or Portland Harbour. Process wastewaters from the installation will normally be re-used/ recycled within the process, for example in the ash quench system. If excess wastewaters are produced, for example during boiler draining, this will be discharged to foul sewer in accordance with a Trade Effluent Consent secured from the local sewerage undertaker prior to commencement of operations. There would be a flue gas treatment plant to clean the waste gases prior to their release into the atmosphere. Cleaned waste gases from combustion would be emitted and dispersed via an 80m stack.

The proposed facility will be located at National Grid Reference SY 69607 74248 on the north-eastern coast of the Isle of Portland, Dorset. The main stack is located approximately 0.07km from the Isle of Portland to Studland Cliffs SAC (designation overlaps with the Isle of Portland SSSI). It is approximately 1.46km from Chesil and the Fleet SAC, SPA and Ramsar. The Crookhill Brick Pit SAC is located approximately 7.48km from the main stack.

The proposed site does not overlap with or require access to any of the designated sites. Therefore, direct impacts are considered screened out as having no likely significant effect. This is because there is no pathway from the source to the receptor. However, the effect of emissions of waste gases to atmosphere from the process and subsequent impact on the protected sites, do require consideration.

The plant, and its waste gas abatement plant have been designed to meet the IED/ BREF incineration emission limits, which are primarily intended to safeguard human health and air quality. Therefore, the assessment considers emissions at these limit levels (which is a conservative approach), as compliance with these limits is integral to the PPP operation. In the BREF, BAT is regarded as installing Selective Non Catalytic Reduction (SNCR), to control oxides of nitrogen (NO<sub>x</sub>) emissions, with the corresponding ELV for ammonia as 10 mg/m<sup>3</sup>. However, due to the efficiency of the applicant's unit, a limit lower than the BREF is achievable. The applicant has proposed a limit for ammonia which is tighter than the BREF incineration emission limit (8 mg/m<sup>3</sup> rather than 10 mg/m<sup>3</sup>) and this has been used in the assessment, and permit conditions would reflect this tighter emission limit.

The Energy from Waste plant will also include an Emergency Diesel Generator (EDG). This will be required to safely shutdown the main plant in the event of a loss of grid connection to maintain operation of the abatement control systems. This event would typically occur for no more than 4 hours. In this operating scenario, the EDG would need to operate at 100% load following the initial loss of grid connection. However, as the shutdown sequence progressed the abatement and control systems would be reduced in operation so that the EDG could operate at a reduced load. Power for the start-up being provided by the grid connection, once restored, not the EDG.

The applicant has not considered the impact of the EDG operation in relation to the annual mean assessment levels. They conclude that the contribution to annual mean impacts would not be significant due to the limited period of operation. Based on the operating conditions (testing up to 26 hours per year, up to 30 minutes every time, between 8am and 5pm and emergency operation being infrequent), we agree that annual impacts are not likely to be significant.

The modelling has shown that impacts from the EDG occur close to the site. Its impact has therefore been considered on the designated sites closest to the proposed plant (Isle of Portland to Studland Cliffs SAC (and Isle of Portland SSSI)) The contribution from the main stack in this area is minimal as the taller stack height means that the emissions travel further and avoid significant building downwash effects. As a result, the emissions from the EDG and main stack have been considered separately by the applicant. We have followed this approach in our assessment below. Testing of the EDG would occur at the same time as the operation of the EfW plant. However, it is highly unlikely that a significant contribution from the EfW plant would coincide with the operation of the EDG, or that the conditions which result in the greatest ground level contributions would occur in the same hour due to the significantly different stack heights.

Dispersion of these emissions have been modelled by the Applicant and audited by the Environment Agency. Refer to Section 8 for further details on our assessment of the air dispersion model provided by the applicant.

The following atmospheric pollutants are identified as relevant to possible impact on the protected sites:

- Oxides of Nitrogen (NO<sub>x</sub>), expressed as NO<sub>2</sub>. Possible impacts are effects of raised ambient NO<sub>x</sub> concentration (both annual and daily limits), contribution to nutrient nitrogen deposition, and contribution to acid deposition.
- Sulphur Dioxide (SO<sub>2</sub>). Possible impacts are effects of raised ambient SO<sub>2</sub> concentration (annual limit), and contribution to acid deposition.
- Ammonia (NH<sub>3</sub>). Possible impacts are effects of raised ambient NH<sub>3</sub> concentration (annual limit) and contribution to nutrient nitrogen and acid deposition.
- Hydrogen Fluoride (HF). Possible impacts are effects of raised ambient HF concentration (both weekly and daily limits)

The assessment level for the protection of ecosystems considered in this assessment is the maximum 24-hour Critical Level for oxides of nitrogen of 75 µg/m<sup>3</sup> which is applicable at ecological sites. The applicant also considered the higher Critical Level of 200 µg/m<sup>3</sup>, which can be used where background concentrations of ozone and sulphur dioxide are below Critical Levels. However, they concluded that there is not sufficient evidence to justify that a critical level of 200 µg/m<sup>3</sup> is appropriate for this area. The assessment is therefore based on the more conservative value of 75 µg/m<sup>3</sup>.

### 3. Maps showing PPP location and European sites and SSSIs

The PPP is wholly outside of the SAC, SPA and Ramsar boundaries. The closest designations to the PPP are the Isle of Portland to Studland Cliffs SAC and the Isle of Portland SSSI.

Figure 2

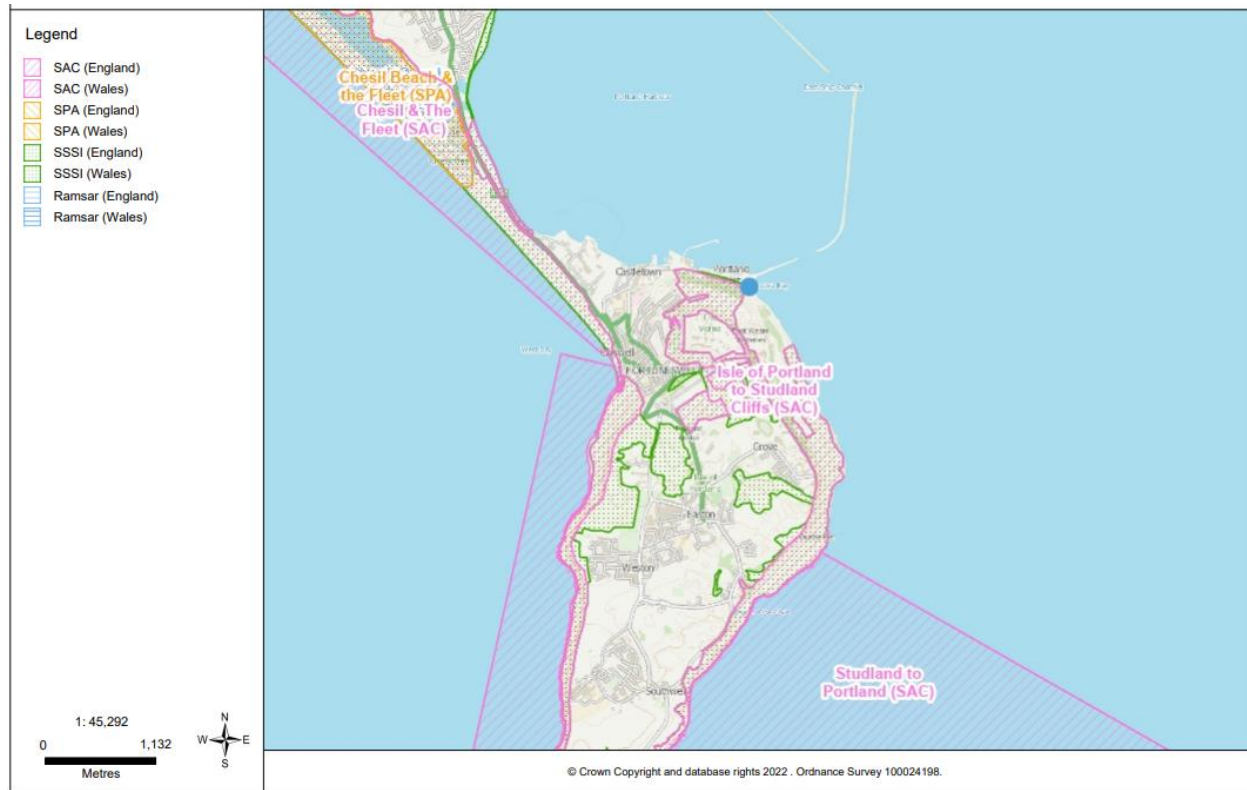
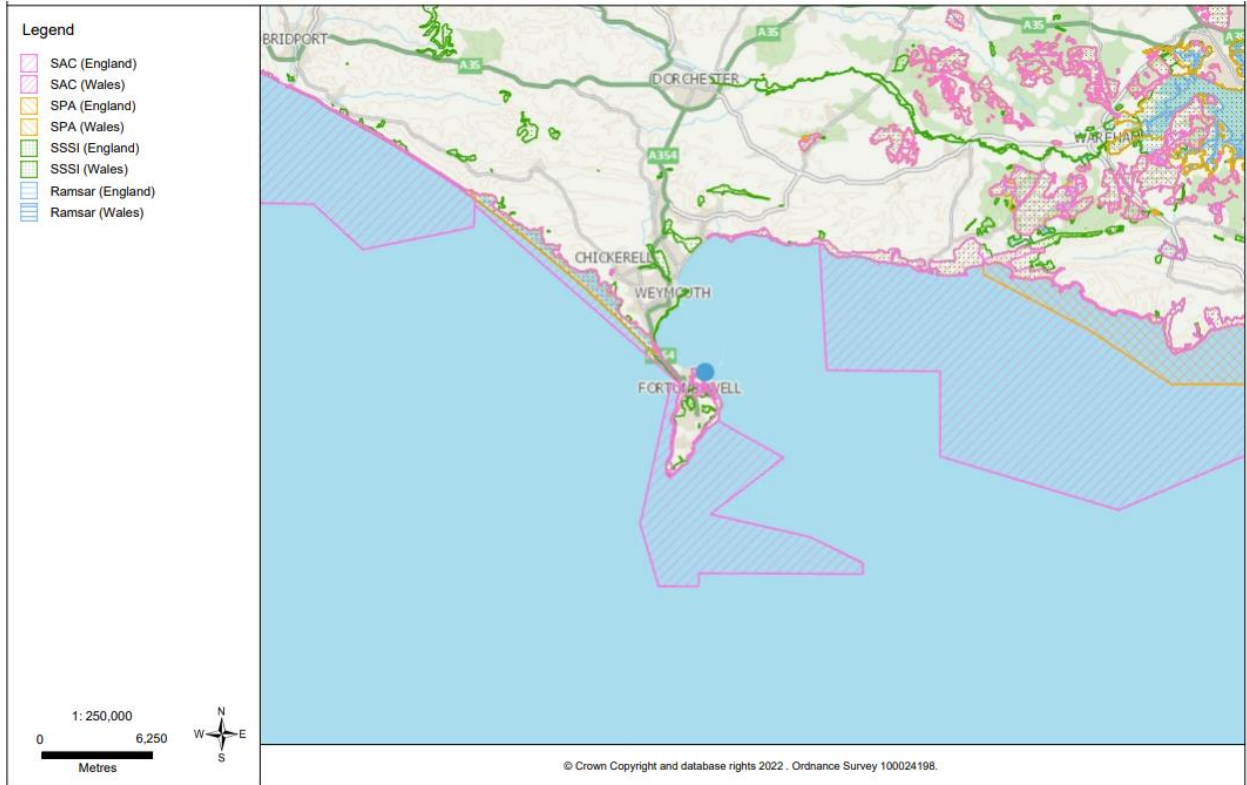


Scale bar: 0 \_\_\_\_\_ 100 km

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- PPP location

Figures 3 & 4



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- PPP location

## 4. European sites requiring assessment<sup>1</sup>

### **Chesil and the Fleet SAC (UK0017076)<sup>^~</sup>**

Annual vegetation of drift lines; Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); Coastal lagoons\*; Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*); Perennial vegetation of stony banks

### **Crookhill Brick Pit SAC (UK0030349)<sup>^</sup>**

Great crested newt

### **Isle of Portland to Studland Cliffs SAC (UK0019861)<sup>^</sup>**

Annual vegetation of drift lines; Dry grasslands and scrubland facies: on calcareous substrates; Early gentian; Vegetated sea cliffs of the Atlantic and Baltic coasts

### **Studland to Portland SAC (UK0030382)<sup>~</sup>**

Reefs

### **Chesil Beach and The Fleet SPA (UK9010091)<sup>^~</sup>**

Little tern (breeding); Wigeon (non-breeding)

### **Chesil Beach and The Fleet Ramsar (UK11012)<sup>^</sup>**

Bass; Coastal lagoons\*; Dark-bellied Brent goose (wintering); Perennial vegetation of stony banks

## 5. European sites conservation objectives

The screening for likely significant effects (and appropriate assessment, if required) will consider the implications of the proposal in view of the site's conservation objectives.

Chesil and the Fleet SAC (UK0017076)<sup>^~</sup>:

<https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK0017076> and

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<sup>1</sup> This is based on screening criteria the Environment Agency consider appropriate to identify possible significant risk.

<sup>^</sup> Protected area under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

\* Priority natural habitat/priority species

~ Marine Protected Area

Feature information sourced from Natural England

<https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK0017076>

Crookhill Brick Pit SAC (UK0030349)^:

<http://publications.naturalengland.org.uk/publication/5649075949010944?category=5374002071601152>

Isle of Portland to Studland Cliffs SAC (UK0019861)^:

<http://publications.naturalengland.org.uk/publication/5124023511941120?category=5374002071601152>

Studland to Portland SAC (UK0030382)~:

<https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK0030382> and  
<https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK0030382>

Chesil Beach and The Fleet SPA (UK9010091)^~:

<https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK9010091> and  
<https://designatedsites.naturalengland.org.uk/Marine/SupAdvice.aspx?SiteCode=UK9010091>

Chesil Beach and The Fleet Ramsar (UK11012)^: There are currently no conservation objectives for Ramsar sites. The SAC/SPA conservation objectives will be used when the qualifying features are the same, and advice sought from Natural England in other cases if necessary.

## **6. Risks (pressures) relevant to the type of PPP being assessed**

These are the reasonably foreseeable risks for this type of PPP. Some of these risks may not be relevant to the particular activity being assessed and this is explained here. The risks which are not relevant do not require further assessment.

- Acidification
- Change in nutrients
- Change in salinity regime
- Change in thermal regime
- Disturbance
- Entrainment/impingement
- Habitat loss
- Physical damage
- Siltation
- Smothering
- Toxic contamination

Turbidity

**Risks screened out as not relevant:**

The following risks are identified as reasonably foreseeable for generic PPP's affecting the designated sites. They are, however, judged not relevant to this specific PPP, as explained below, and so are excluded from further consideration:

**Change in salinity regime:** No source or pathway. There is no pathway linking the discharge point to the European sites requiring assessment. In any case, the only discharge from the proposed site to surface water is limited to uncontaminated surface runoff. No process effluent would be discharged to water.

**Changes in thermal regime:** No source or pathway. No pathway linking the discharge point to the European sites requiring assessment. In any case, the only discharge from the proposed site to surface water is limited to uncontaminated surface runoff. No process effluent would be discharged to water

**Disturbance:** No human or vehicular access to European sites is required by this PPP. The only relevant potential mechanism for disturbance is noise, which is considered in section 7.

**Entrapment/impingement:** There are no abstractions or activities associated with this PPP which could result in entrapment/impingement.

**Physical damage:** No source. The site does not overlap any European site. Access to the protected sites is not required for this PPP. There is no pathway for any effects that could lead to physical damage.

**Siltation:** No source of suspended solids in the uncontaminated surface runoff, which could potentially settle and cause siltation.

**Smothering;** There are no relevant emissions (e.g. coarse dust), therefore no source-pathway-receptor linkage.

**Turbidity:** No source of suspended solids in the uncontaminated surface runoff, which could potentially cause turbidity.

**Relevant Risks for screening**

The following risks are deemed as reasonably foreseeable on the basis of emissions from the PPP and are considered further in sections 7 and 8 below.

- Acidification
- Change in nutrients
- Disturbance (noise only)
- Habitat loss
- Toxic contamination



## 7. HRA Stage 1 screening<sup>2</sup>

This section is a record of the screening for each risk (pressure) and the qualifying features that could be sensitive to that risk. The features may be grouped if they will be affected in the same way and the screening is the same for each feature. If appropriate, the assessment may be considered at a site level, rather than feature by feature.

Refer to section 8 for further details on our assessment of the air dispersion model provided by the applicant.

Process contributions (PC) calculated by detailed air dispersion modelling, can be considered insignificant if:

- the long-term process contribution is less than 1% of the relevant ES or critical level; and
- the short-term process contribution is less than 10% of the relevant ES.

Where the PC is greater than the thresholds, the assessment must continue to determine the impact by considering the Predicted Environmental Concentration (PEC). The PEC is the combination of the PC substance to air and the background concentration of the substance which is already present in the environment.

We can conclude 'no likely significant effect' (alone and in-combination) where the PEC is <70% of the environmental standard. Where the PEC is greater than the 70% threshold, we must undertake a more detailed assessment. For short-term emissions, a detailed assessment is required if the PC is greater than 10% of the critical level.

### **Background levels:**

On the 18 January 2023 APIS confirmed that there had been a mapping error in the ammonia data, also translating to an error in the total nitrogen deposition. Once background levels had been corrected, some sites (including ammonia at the Isle of Portland to Studland Cliffs SAC) now show as exceeding the relevant environmental standards.

Where the background levels of pollutants are relevant to our assessment (i.e., where the process contribution (PC) is greater than the thresholds) we have used the most up-to-date background values as found on the APIS website (2019 data). For consistency, we have taken this approach for all pollutants, including those not affected by the APIS mapping error. Therefore, predicted environmental

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<sup>2</sup> Only features the Environment Agency consider likely to be sensitive to the type of PPP being assessed are included, see [Habitats Regulations Assessment: Risk definitions and matrices](#)

<sup>^</sup> Protected area under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

\* Priority natural habitat/priority species

~ Marine Protected Area

concentration (PEC) figures may vary from those presented in the applicant's assessment.

## **Chesil and the Fleet SAC (UK0017076)^~**

### **Change in nutrients**

Summary of likely significant effect alone:

No likely significant effect alone.

The critical load range as found on the APIS website for Perennial vegetation of stony banks (the most sensitive feature) is 8-15 kg N/ha/yr. The lowest end of the range has been selected for screening. For this European site, the maximum annual mean process contribution of nitrogen oxides, as nutrient nitrogen, predicted by the applicant is 0.073 kg N/ha/yr (grassland). This is below the significance screening threshold of 1% of the nutrient-nitrogen critical load (0.91%).

Further to the above, the APIS website clarifies that where the critical load for stable dune grasslands is relevant, assessments should use the 8-10 kg N/ha/yr range for acid substrate and the 10-15 kg N/ha/yr range for calcareous substrate. Natural England confirmed that the 10-15 kg N/ha/yr range is likely to be the most appropriate for this site. Therefore, the above assessment against the lower Critical Load is considered to be conservative.

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when predicted process contributions are below the significance screening thresholds.

The assessment of likely significant effect from this risk for the following features is:

Annual vegetation of drift lines - no effect. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) - no effect. Coastal lagoons\* - no effect. Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) - no effect. Perennial vegetation of stony banks - no effect.

## Habitat loss

Summary of likely significant effect alone:

No likely significant effect alone. As impacts from acidification, change in nutrients and toxic contamination have all been screened out, with process contributions below the significance screening thresholds, none of these emissions are likely to cause a significant effect alone through indirect habitat loss.

Also, there is no mechanism for direct habitat loss as the site does not overlap the European site and access to the protected site is not required for this PPP.

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when impacts have been screened out as not likely to cause a significant effect alone.

The assessment of likely significant effect from this risk for the following features is:

Annual vegetation of drift lines - no effect. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) - no effect. Coastal lagoons\* - no effect. Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*) - no effect. Perennial vegetation of stony banks - no effect.

## Toxic contamination

Summary of likely significant effect alone:

No likely significant effect alone.

Emissions of atmospheric gases from the PPP linked to potential toxic contamination (oxides of nitrogen (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), ammonia (NH<sub>3</sub>) and hydrogen fluoride (HF)) are all below the relevant significance screening thresholds for long and short term critical levels (<1% of the long term and <10% of the short term).

In particular, for this receptor, the maximum process contributions predicted by the applicant are:

- 0.53% of the annual NO<sub>x</sub> critical level of 30 µg/m<sup>3</sup> and 5.36% of the daily NO<sub>x</sub> critical level of 75 µg/m<sup>3</sup>
- 0.45% of the SO<sub>2</sub> critical level of 20 µg/m<sup>3</sup> [\*\*]
- 0.33% of the NH<sub>3</sub> critical level of 3 µg/m<sup>3</sup> [\*\*]

- 4% of the weekly HF critical level of 0.5 µg/m<sup>3</sup> and 0.6% of the daily HF critical level of 5 µg/m<sup>3</sup>

*\*\*The lichen and bryophyte sensitivity standards for ammonia and sulphur dioxide have not been assigned for this assessment as the presence of these features has not been recorded (ref: [APIS website](#)).*

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when predicted process contributions are below the significance screening thresholds.

The assessment of likely significant effect from this risk for the following features is:

Annual vegetation of drift lines - no effect. Atlantic salt meadows (Glauco-Puccinellietalia maritimae) - no effect. Coastal lagoons\* - no effect. Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi) - no effect. Perennial vegetation of stony banks - no effect.

## **Chesil Beach and The Fleet Ramsar (UK11012)^**

There are currently no conservation objectives for Ramsar sites. The SAC/SPA conservation objectives will be used when the qualifying features are the same, and advice sought from Natural England in other cases if necessary.

### **Acidification**

Summary of likely significant effect alone:

No likely significant effect alone.

There are currently no conservation objectives for Ramsar sites. We have based the assessment on the most sensitive features listed for this site under the overlapping SAC and SPA designations (Perennial vegetation of stony banks and *Sterna albifrons* - Little Tern).

The acid critical load parameters found on the APIS website are: CLminN = 0.223 kg eq/ha/yr; CLmaxN = 2.018 kg eq/ha/yr; CLmaxS = 1.58 kg eq/ha/y. For this European site, the maximum annual mean process contribution of pollutants responsible for acidification predicted by the applicant is 0.026 keq/ha/yr, which is above the significance screening threshold of 1% of the acid critical load function (1.29%).

Highest acidity background (moorland) for this site (SAC): 1.036 Keq/ha/yr (*source APIS*)

The PEC is 1.062 Keq/ha/yr, which is 52.63% of the acid critical load function for acidic grassland. The PEC is less than 70% of critical load therefore the PEC can be considered 'not significant' alone.

Further to the above, we have selected the acidity background figure for moorland vegetation. Natural England confirmed that the vegetation found at this site is low to the ground, meaning the grid average background value (0.625 Keq/ha/yr) may be more representative. Therefore, the above assessment against the higher moorland background is considered to be conservative.

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when assessment of predicted process contributions has concluded no likely significant effect. When taking the background into account there is sufficient headroom to conclude that an exceedance of the environmental standard is unlikely.

The assessment of likely significant effect from this risk for the following features is:

Dark-bellied Brent goose (wintering) - no effect.

## **Chesil Beach and The Fleet SPA (UK9010091)^~**

### **Acidification**

Summary of likely significant effect alone:

No likely significant effect alone.

We have based the assessment on the most sensitive features listed for this site (*Sterna albifrons* - Little Tern, acidic grassland).

The acid critical load parameters found on the APIS website are: CLminN = 0.223 kg eq/ha/yr; CLmaxN = 2.018 kg eq/ha/yr; CLmaxS = 1.58 kg eq/ha/y. For this European site, the maximum annual mean process contribution of pollutants responsible for acidification predicted by the applicant is 0.026 keq/ha/yr, which is above the significance screening threshold of 1% of the acid critical load function (1.29%).

Highest acidity background (moorland) for this site: 0.998 Keq/ha/yr (*source APIS*)

The PEC is 1.024 Keq/ha/yr, which is 50.74% of the acid critical load function. The PEC is less than 70% of critical load therefore the PEC can be considered 'not significant' alone.

Further to the above, we have selected the acidity background figure for moorland vegetation. Natural England confirmed that the vegetation found at this site is low to the ground, meaning the 'grid average' background value (0.625 Keq/ha/yr) may be more representative. Therefore, the above assessment against the higher background is considered to be conservative.

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when assessment of predicted process contributions has concluded no likely significant effect. When taking the background into account there is sufficient headroom to conclude that an exceedance of the environmental standard is unlikely.

The assessment of likely significant effect from this risk for the following features is:

Little tern (breeding) - no effect. Wigeon (non-breeding) - no effect.

### **Change in nutrients**

Summary of likely significant effect alone:

No likely significant effect alone.

The critical load range as found on the APIS website for *Sterna albifrons* - Little tern, coastal stable dune grasslands - acid type (the most sensitive feature) is 8-10 kg N/ha/yr. The lowest end of the range has been selected for screening. For this European site, the maximum annual mean process contribution of nitrogen oxides, as nutrient nitrogen, predicted by the applicant is 0.073 kg N/ha/yr. This is below the significance screening threshold of 1% of the nutrient-nitrogen critical load (0.91%).

Further to the above, the APIS website clarifies that assessments should use the 8-10 kg N/ha/yr range for acidic dunes and 10-15 kg N/ha/yr range for calcareous dunes. Natural England confirmed that the 10-15 kg N/ha/yr range may be the most appropriate for this site. Therefore, the above assessment against the lower Critical Load is considered to be conservative.

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when impacts have been screened out is not likely to cause a significant effect alone.

The assessment of likely significant effect from this risk for the following features is:

Little tern (breeding) - no effect. Wigeon (non-breeding) - no effect.

## **Disturbance**

Summary of likely significant effect alone:

The only relevant issue for disturbance from the site is noise. There is no potential route for human or vehicular access to the European Site from the proposal.

The PPP is located a considerable distance from the SPA (approximately 1.46 km). Other sources of noise exist between the location of the PPP and the SPA, including the A354.

Therefore, we consider that disturbance due to noise associated with the operation of the PPP will not have a significant impact alone or in combination.

Summary of likely significant effect in combination:

We consider that disturbance due to noise associated with the operation of the PPP will not have a significant impact alone or in combination.

The assessment of likely significant effect from this risk for the following features is:

Little tern (breeding) - no effect. Wigeon (non-breeding) - no effect.

## **Habitat loss**

Summary of likely significant effect alone:

No likely significant effect alone. As impacts from acidification, change in nutrients and toxic contamination have all been screened out, with annual mean process contributions below the significance screening thresholds (PC and/or PEC), none of these emissions are likely to cause a significant effect alone through indirect habitat loss.

Also, there is no mechanism for direct habitat loss as the site does not overlap the European site and access to the protected site is not required for this PPP.

Summary of likely significant effect in combination:

Not applicable.

The assessment of likely significant effect from this risk for the following features is:

Little tern (breeding) - no effect. Wigeon (non-breeding) - no effect.

### **Toxic contamination**

Summary of likely significant effect alone:

No likely significant effect alone.

Emissions of atmospheric gases from the PPP linked to potential toxic contamination (oxides of nitrogen (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), ammonia (NH<sub>3</sub>) and hydrogen fluoride (HF)) are all below the relevant significance screening thresholds for long and short term critical levels (<1% of the long term and <10% of the short term).

In particular, for this receptor, the maximum process contributions predicted by the applicant are:

- 0.53% of the annual NO<sub>x</sub> critical level of 30 µg/m<sup>3</sup> and 5.36% of the daily NO<sub>x</sub> critical level of 75 µg/m<sup>3</sup>
- 0.45% of the SO<sub>2</sub> critical level of 20 µg/m<sup>3</sup> [\*\*]
- 0.33% of the NH<sub>3</sub> critical level of 3 µg/m<sup>3</sup> [\*\*]
- 4% of the weekly HF critical level of 0.5 µg/m<sup>3</sup> and 0.6% of the daily HF critical level of 5 µg/m<sup>3</sup>

*\*\*The lichen and bryophyte sensitivity standards for ammonia and sulphur dioxide have not been assigned for this assessment as the presence of these features has not been recorded (ref: [APIS website](#)).*

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when impacts have been screened out is not likely to cause a significant effect alone.

The assessment of likely significant effect from this risk for the following features is:

Little tern (breeding) - no effect. Wigeon (non-breeding) - no effect.



## **Crookhill Brick Pit SAC (UK0030349)^**

The Crookhill Brick Pit SAC is located approximately 7.5km from the PPP. It has been identified as a site for great crested newts. The listed broad habitat type is described as 'standing open water and canals'. Critical levels/loads are applicable to habitats and flora only, and the direct effect on fauna is not relevant. However, if damage to supporting habitats could not be ruled out there could be a consequential effect on dependent fauna.

### **Acidification**

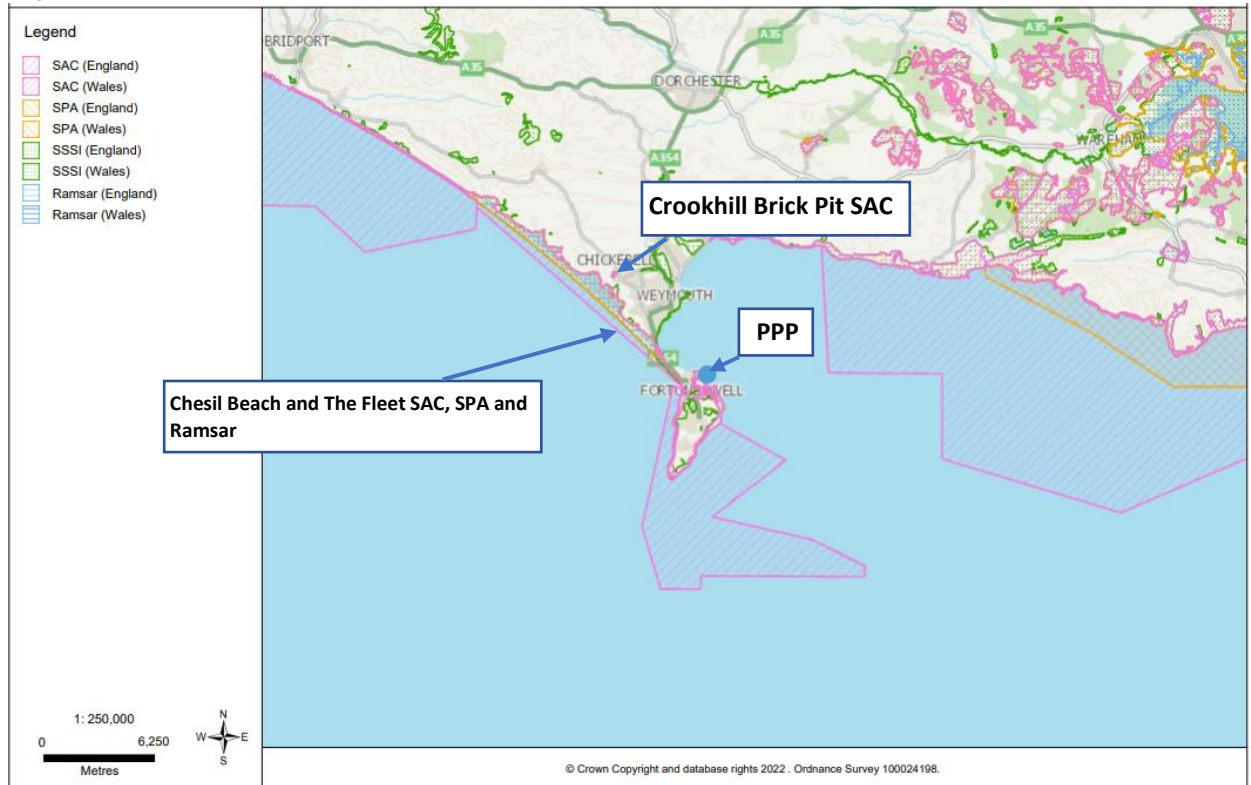
Summary of likely significant effect alone:

No likely significant effect.

There are no discharges to water, so there is no "source" other than via atmospheric acid deposition. Acid deposition from air emissions is relevant only to supporting habitats (on which receptors graze) and does not have an established direct effect mechanism on fauna. No Critical Load has been set for acidity (APIS website).

The closest designated site, which has been included in the modelled domain, is the Chesil and The Fleet SAC, SPA and Ramsar. For these sites, when taking the background into account there is sufficient headroom to conclude that an exceedance of the environmental standard is unlikely. The predicted process contribution, plus the background concentration (i.e. PEC) is less than 70% of the environmental standard. Due to the increased distance and subsequent increased dispersion, we would expect process contributions at the Crookhill Brick Pit SAC to be lower than the maximum process contributions considered for the Chesil Beach and the Fleet sites. Therefore we conclude 'no likely significant effect'.

Figure 5



Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when impacts have been screened out is not likely to cause a significant effect alone.

The assessment of likely significant effect from this risk for the following features is:

Great crested newt - no effect.

### Change in nutrients

Summary of likely significant effect alone:

There are no discharges to water, so there is no “source” other than via atmospheric deposition. No Critical Load has been set for nutrient nitrogen (APIS website), however APIS confirms that the broad habitat is sensitive to nitrogen.

The applicant has not included Crookhill Brick Pit SAC in their modelling domain. The closest designated site, which has been included in the modelled domain, is the Chesil and The Fleet SAC, SPA and Ramsar (see Figure 5). For that site, the maximum annual mean process contribution of nitrogen oxides, as nutrient nitrogen,

predicted by the applicant is 0.073 kg N/ha/yr. This is below the significance screening threshold of 1% of the nutrient-nitrogen critical load (0.91%). Therefore, we can conclude no likely significant effect alone.

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when impacts have been screened out is not likely to cause a significant effect alone.

The assessment of likely significant effect from this risk for the following features is:

Great crested newt - no effect.

### **Habitat loss**

Summary of likely significant effect alone:

No likely significant effect alone. See section on acidification, change in nutrients and toxic contamination for why there is unlikely to be any indirect habitat loss resulting from the emissions from this PPP. We have assessed the direct effects on the habitat 'standing open water and canals.' As 'no likely significant effect' has been concluded for the habitat, consequential effects on great crested newts (dependent on habitat) can also be ruled out.

Also, there is no mechanism for direct habitat loss as the site does not overlap the European site and access to the protected site is not required for this PPP.

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when impacts have been screened out is not likely to cause a significant effect alone.

The assessment of likely significant effect from this risk for the following features is:

Great crested newt - no effect.

## **Toxic contamination**

Summary of likely significant effect alone:

The applicant has not included Crookhill Brick Pit SAC in their modelling domain. But has confirmed that impacts due to toxic contamination which are greater than 1% of the long term or 10% of the short term Critical Level are contained within the modelling domain. Therefore, impacts at Crookhill Brick Pit SAC is less than 1% of the long term and less than 10% of the Critical Level.

The closest designated site, which has been included in the modelled domain, is the Chesil and The Fleet SAC, SPA and Ramsar (see Figure 5 above). For that site, emissions of atmospheric gases from the PPP linked to potential toxic contamination (oxides of nitrogen (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), ammonia (NH<sub>3</sub>) and hydrogen fluoride (HF)) are all below the relevant significance screening thresholds for long and short term critical levels. Due to the increased distance, and subsequent increased dispersion, we would expect process contributions at the Crookhill Brick Pit SAC to be lower than the maximum process contributions considered for the Chesil Beach and the Fleet sites. We have therefore concluded, no likely significant effect alone.

Summary of likely significant effect in combination:

Not applicable, no further (in combination) assessment required when impacts have been screened out is not likely to cause a significant effect alone.

The assessment of likely significant effect from this risk for the following features is:

Great crested newt - no effect.

## **Isle of Portland to Studland Cliffs SAC (UK0019861)^**

Due to the proximity of parts of this SAC and the PPP, we have considered the potential impacts of emissions from both the main stack and the emergency diesel generator (EDG). These emissions are considered separately in the assessment, refer to section 2 and section 8 for further details.

## Acidification

Summary of likely significant effect alone:

Main stack emissions:

No likely significant effect.

The acid critical load parameters found on the APIS website are: CLminN = 0.856 kg eq/ha/yr; CLmaxN = 4.856 kg eq/ha/yr; CLmaxS = 4.0 kg eq/ha/y. For this European site, the maximum annual mean process contribution of pollutants responsible for acidification predicted by the applicant is 0.061 keq/ha/yr, which is just above the significance screening threshold of 1% of the acid critical load function (1.26%).

Highest acidity background (moorland) for this site: 1.429 Keq/ha/yr  
(source APIS)

The PEC is 1.489 Keq/ha/yr, which is 30.66% of the acid critical load function. The PEC is less than 70% of the critical load therefore it can be concluded that there is no likely significant effect.

The highest background for this SAC does not overlap with the highest PC. The above assessment uses the maximum predicted PC and the highest background, it is therefore considered to be conservative.

Emergency diesel generator (EDG) emissions:

The Applicant has not considered the impact of testing and emergency operation for the EDG in relation to the annual mean assessment levels. They conclude that the contribution to annual mean impacts would not be significant due to the limited period of operation. Based on the operating conditions (testing up to 26 hours per year, up to 30 minutes every time, from 8am to 5pm and emergency operation remains infrequent), we agree that annual impacts are not likely to be significant.

Summary of likely significant effect in combination:

Main stack emissions: Not applicable, no further (in combination) assessment required when assessment of predicted process contributions has concluded no likely significant effect.

EDG emissions: Not applicable, no further (in combination) assessment required. Annual impacts are not likely to be significant due to the limited operating hours of the generator.

The assessment of likely significant effect from this risk for the following features is:

Early gentian - no effect.

### **Change in nutrients**

Summary of likely significant effect alone:

Main stack emissions:

Likely significant effect alone.

The critical load range as found on the APIS website for Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) is 15-25 kg N/ha/yr. The lowest end of the range has been selected for screening. For this European site, the maximum annual mean process contribution of nitrogen oxides, as nutrient nitrogen, predicted by the applicant is 0.168 kgN/ha/yr. This is just above the significance screening threshold of 1% of the nutrient-nitrogen critical load (1.12%).

Highest nitrogen deposition background (moorland) for this site is 20.18 KgN/ha/yr (*source APIS*). This value is recorded approximately 9.8km from the PPP on the south Dorset coast, in the Ringstead Bay area. It is therefore not appropriate for this assessment. In any case, the predicted PCs in the areas with the highest background are below the screening thresholds. Based on the values given on the APIS website a background of 11 kgN/ha/yr is more appropriate when considering the area with the highest predicted PC as shown in figures 6 and 7 below.

Using a background figure of 11 kgN/ha/yr, the PEC is 11.168 kgN/ha/yr, which is 74.45% of the nutrient-nitrogen critical load. The PEC is more than 70% of the critical load therefore it cannot be considered 'not significant' alone.

Figure 6 – Nutrient nitrogen deposition

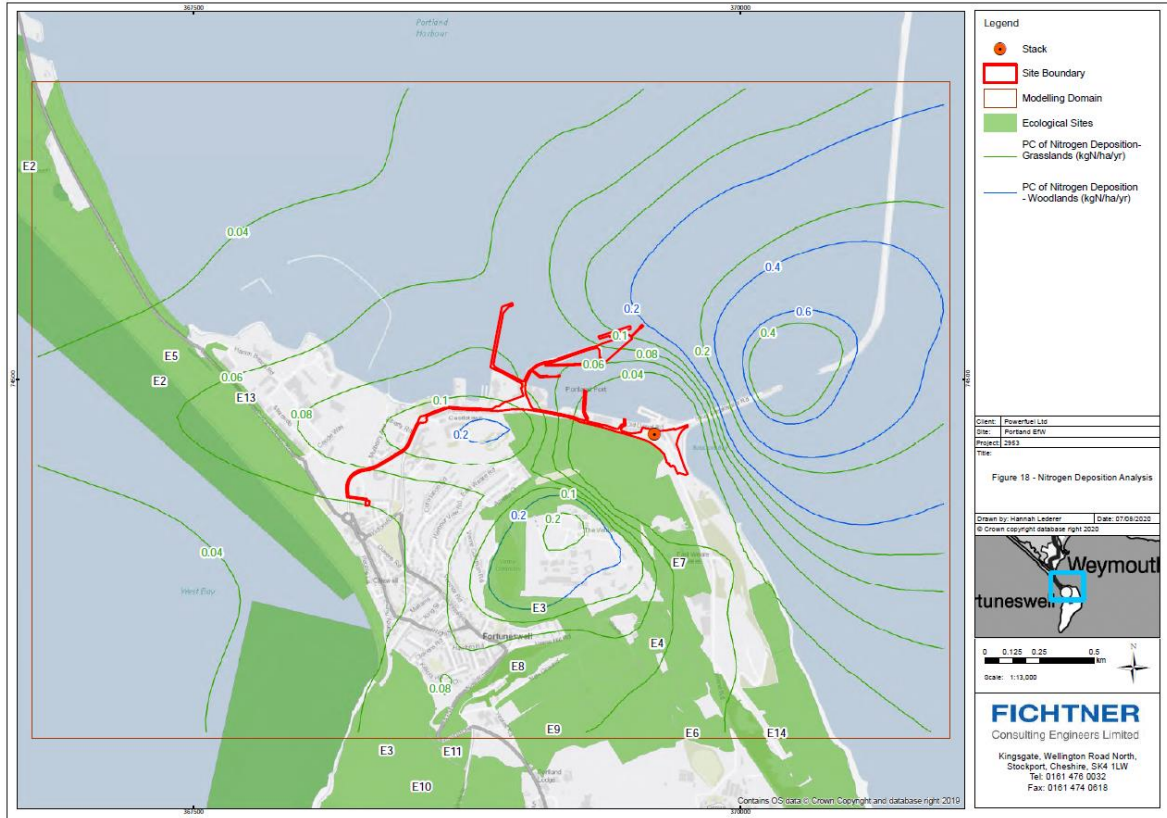
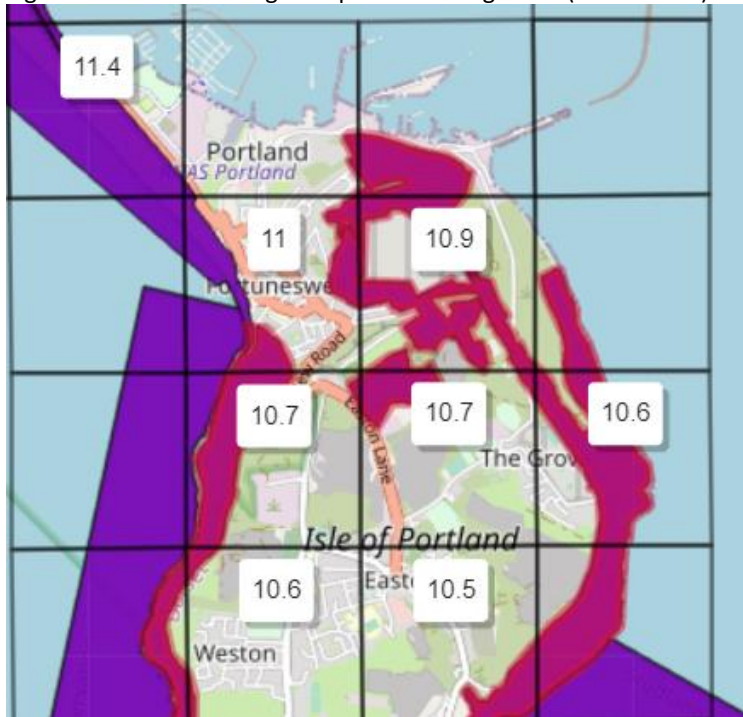


Figure 7 – nutrient nitrogen deposition background (source APIS)



Emergency diesel generator (EDG) emissions:

The Applicant has not considered the impact of testing and emergency operation for the EDG in relation to the annual mean assessment levels. They conclude that the contribution to annual mean impacts would not be significant due to the limited period of operation. Based on the operating conditions (testing up to 26 hours per year, up to 30 minutes every time, from 8am to 5pm and emergency operation remains infrequent), we agree that annual impacts are not likely to be significant.

Summary of likely significant effect in combination:

Main stack emissions: Predicted total nitrogen oxides, as nutrient nitrogen, is less than the critical load, but above the screening threshold of 70% at 74.46%. Therefore, it is considered as having a "likely significant effect" alone. We are going to progress to Stage 2 appropriate assessment.

EDG emissions: Not applicable, no further (in combination) assessment required. Annual impacts are not likely to be significant due to the limited operating hours of the generator.

The assessment of likely significant effect from this risk for the following features is:

Annual vegetation of drift lines - alone. Dry grasslands and scrubland facies: on calcareous substrates - alone. Early gentian - alone. Vegetated sea cliffs of the Atlantic and Baltic coasts - alone.

## **Habitat loss**

Summary of likely significant effect alone:

Main stack emissions:

Likely significant effect alone for impacts from change in nutrients and toxic contamination (ammonia). These cannot be screened out, as the PECs are above 70% of the relevant environmental standards. There is also a likely significant effect from short term NOx emissions, as the PC is above 10% of the critical level.

No likely significant effect alone for impacts from acidification, long term oxides of nitrogen (NOx), sulphur dioxide (SO<sub>2</sub>) and hydrogen fluoride (HF). Process contributions for these pollutants are below the significance screening thresholds (PC and/or PEC). Therefore, none



of these emissions are likely to cause a significant effect alone through indirect habitat loss.

EDG: The potential impacts from toxic contamination could not be screened out for short term emissions. Refer to the toxic contamination assessment below and section 8 for further details of our assessment.

Also, there is no mechanism for direct habitat loss as the site does not overlap the European site and access to the protected site is not required for this PPP.

Summary of likely significant effect in combination:

Acidification, SO<sub>2</sub>, long term NO<sub>x</sub>, and HF screen out as having no likely significant effect in combination. Either because the process contribution is below the screening threshold or because the 70% screening threshold for PEC (a simple in combination test) is not exceeded.

The remaining pollutants (nitrogen oxides (as nutrient nitrogen), short term NO<sub>x</sub> and ammonia) exceed the screening thresholds. Therefore, the Stage 1 screening assessment concludes a “likely significant effect” for these pollutants, and a more detailed assessment is required. We are going to progress to a Stage 2 appropriate assessment.

The assessment of likely significant effect from this risk for the following features is:

Annual vegetation of drift lines - alone. Dry grasslands and scrubland facies: on calcareous substrates - alone. Early gentian - alone. Vegetated sea cliffs of the Atlantic and Baltic coasts - alone.

### **Toxic contamination**

Summary of likely significant effect alone:

*Main stack:*

Emissions of atmospheric gases from the PPP linked to potential toxic contamination are oxides of nitrogen (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), ammonia (NH<sub>3</sub>) and hydrogen fluoride (HF).

Apart from ammonia and short-term NO<sub>x</sub>, no likely significant effect alone.

For this receptor, the maximum process contributions predicted by the applicant and, where relevant, predicted environmental concentrations are:

- NO<sub>x</sub> PCs are 1.27% of the annual NO<sub>x</sub> critical level of 30 µg/m<sup>3</sup> and 15.29% of the daily NO<sub>x</sub> critical level of 75 µg/m<sup>3</sup>
- NO<sub>x</sub> PECs are 34.93% of the annual NO<sub>x</sub> critical level. Further consideration of the NO<sub>x</sub> background is given in Section 8.
- SO<sub>2</sub> PCs are 0.9% of the SO<sub>2</sub> critical level of 10 µg/m<sup>3</sup> [\*\*]
- NH<sub>3</sub> PCs are 3% of the NH<sub>3</sub> critical level of 1 µg/m<sup>3</sup> [\*\*]
- NH<sub>3</sub> PECs are 118.3% of the NH<sub>3</sub> critical level
- PCs are 4% of the weekly HF critical level of 0.5 µg/m<sup>3</sup> and 2% of the daily HF critical level of 5 µg/m<sup>3</sup>

*\*\*The lichen and bryophyte sensitivity standards for ammonia and sulphur dioxide have been assigned for this assessment as the presence of these features has been recorded in the Site Management Plan for at least one of the sections of the site*

For short-term emissions, a detailed assessment is required if the PC is greater than 10% of the critical level. We have therefore concluded a likely significant effect for short term NO<sub>x</sub> emissions and will consider this pollutant further in our Stage 2 assessment.

The PC for ammonia is greater than 1% of the critical level. As the PEC across parts of the site exceeds the environmental standard for some interest features, the emissions cannot be screened out and our Stage 1 assessment must conclude 'likely significant effect. Therefore, we have taken ammonia on to a Stage 2 HRA.

#### Further consideration of background NO<sub>x</sub>:

In the absence of monitoring, background concentrations have been obtained using mapped data available via the APIS website. The 1km<sup>2</sup> tile which covers the PPP, port and part of the Isle of Portland to Studland Cliffs SAC (and Isle of Portland SSSI) already exceeds the environmental criterion (i.e. at 31.3 µg/m<sup>3</sup>, according to 2019 APIS data). The applicant's contour plots can be used to estimate NO<sub>x</sub> process contributions in this area and the areas of maximum impact. The modelling shows that in the area with the highest background (i.e. the area already exceeding the environmental criterion) predicted annual process contributions from the main stack are below the relevant significance screening threshold for critical levels. Areas where process contributions exceed the threshold are likely to be located in the 1 km<sup>2</sup> tiles where NO<sub>x</sub> backgrounds indicate sufficient

headroom. Therefore, exceedances due to process contributions are unlikely.

Based on Figures 8 and 9 below, we have used a background figure of  $10.1 \mu\text{g}/\text{m}^3$  in our assessment.

Figure 8 – Background NOx, 2019 APIS data

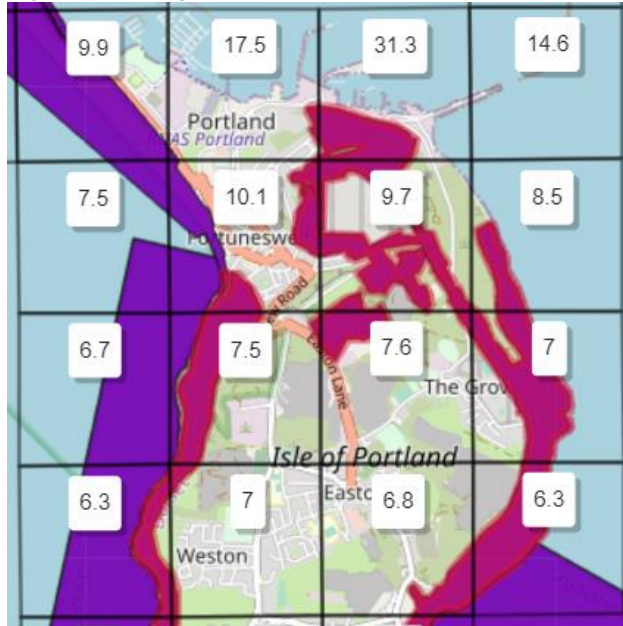
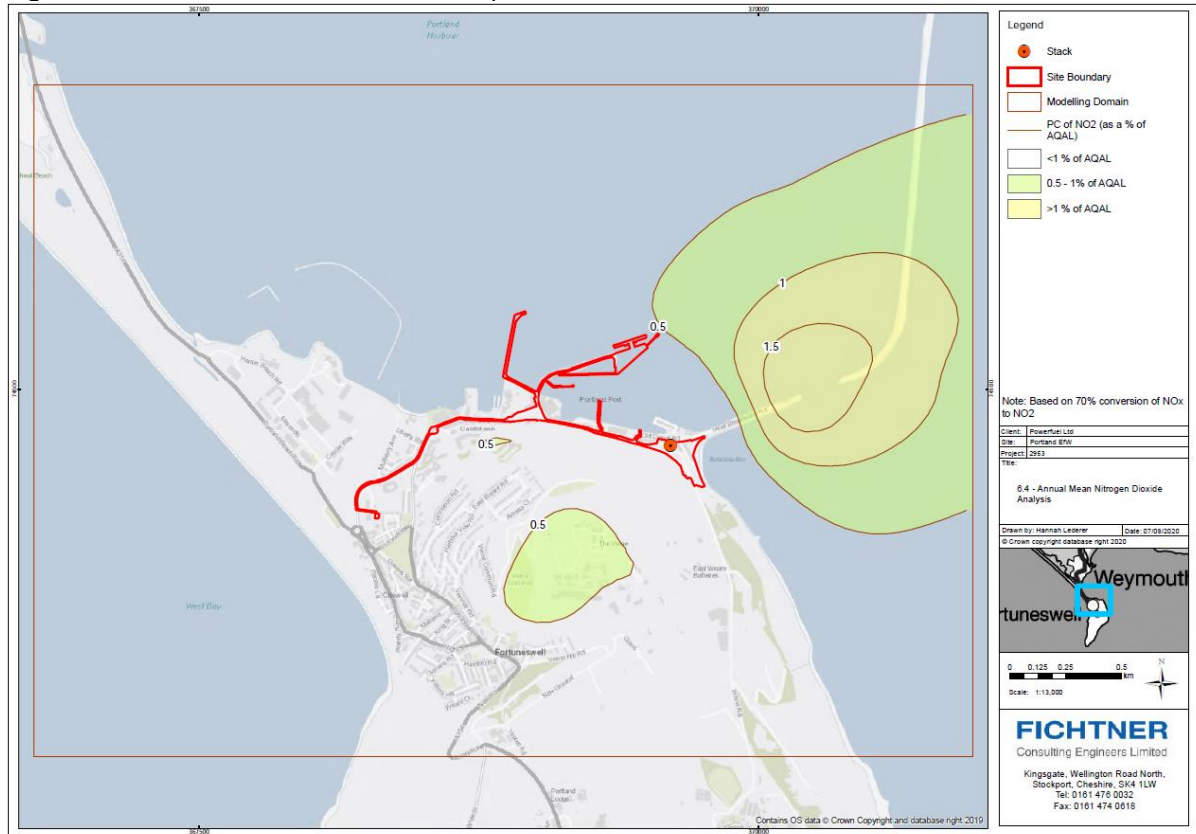


Figure 9 – Annual mean NOx contour map



Emergency Diesel Generator (EDG):

The applicant has undertaken detailed air dispersion modelling. The results of this modelling show that the short term NOx PC is more than 10% of the critical load therefore it cannot be considered 'not significant' alone. See section 8 and the subsequent Stage 2 assessment for further details.

Summary of likely significant effect in combination:

Main stack emissions: PECs of ammonia above the critical level. Therefore, it is considered as having a "likely significant effect" alone. We are going to progress to Stage 2 appropriate assessment for this pollutant.

The PC for short term NOx emissions is greater than 10% of the critical level. We have therefore concluded a "likely significant effect" alone and will consider this pollutant further in our Stage 2 assessment.

For other pollutants this is not applicable, no further (in combination) assessment required when assessment of predicted process contributions has concluded no likely significant effect.

EDG: Significant effects could not be screened out for short-term NOx emissions. See section 8 and the subsequent Stage 2 assessment for further details.

The assessment of likely significant effect from this risk for the following features is:

Annual vegetation of drift lines - alone. Dry grasslands and scrubland facies: on calcareous substrates - alone. Early gentian - alone. Vegetated sea cliffs of the Atlantic and Baltic coasts - alone.

## **Studland to Portland SAC (UK0030382)~**

### **Change in nutrients and toxic contamination**

Summary of likely significant effect alone:

No likely significant effect alone.

The SAC lies off the south coast of England, entirely in UK territorial waters. The site is designated to protect reef habitat. It is not anticipated that emissions to air from the PPP will significantly impact the marine ecosystem.

Any pollutants from emissions of atmospheric gases from the PPP will be regularly removed by tidal action and it is considered unlikely that there would be an adverse impact from nitrogen deposition or toxic contamination.

In addition, APIS does not provide critical levels or loads for marine habitats. Specifically for this site, APIS confirms that the designated feature is not sensitive to NO<sub>x</sub>, ammonia (NH<sub>3</sub>), SO<sub>2</sub>, eutrophication (from nutrient deposition), or acidification.

We have therefore concluded that it is not sensitive to air pollution from the PPP and have not considered it further in our assessment.

Summary of likely significant effect in combination:

Not applicable.

The assessment of likely significant effect from this risk for the following features is:

Reefs - no effect.

## **8. Alone assessment (further details)**

Emissions to air from the installation activities include hydrogen fluoride (HF), nitrogen dioxide (NO<sub>2</sub>), ammonia (NH<sub>3</sub>) and sulphur dioxide (SO<sub>2</sub>).

The applicant has assessed emissions to air against the relevant environmental standards and the potential impact upon ecological receptors by undertaking a detailed air modelling assessment. This assessment predicts the potential effects on local air quality from the PPP stack emissions using the ADMS-5.2 dispersion model, which is a commonly used computer model for dispersion modelling.

We have audited the applicant's air dispersion model and reviewed its selection of input data, use of background data and the assumptions made to inform the assessment. We have also carried out a screening exercise using an air dispersion screening tool developed by the Environment Agency and based on the US EPA AERMOD air dispersion model to confirm the quality of the applicant's model predictions.

The model used five years of meteorological data (2014 – 2018) collected from the Portland Meteorological Recording Station, situated approximately 5km from the PPP. The impact of the terrain surrounding the site upon plume dispersion and the surrounding buildings were considered in the dispersion modelling.

The level of risk from the pollutants identified is dependent on the magnitude of the emission, its dispersion, existing and predicted pollutant concentrations (PC), and the concentration at which the pollutants have the potential to affect the environment. Air dispersion modelling enables the PC to be predicted at any environmental receptor that might be impacted by the emissions from a plant. Once short-term and long-term PCs have been calculated in this way, they are compared with Environmental Standards (ES), also referred to as critical loads and levels.

Critical levels and critical loads are dependent on the receptors present, which may be affected by atmospheric pollution. Below these levels an adverse effect is not expected.

- Critical levels are defined as gaseous concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to current knowledge.
- The critical load relates to the quantity of pollutant deposited from air to the ground. It is defined as a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on sensitive elements of the environment do not occur according to current knowledge.

PCs calculated by detailed air dispersion modelling, can be considered insignificant if:

- the long-term process contribution is less than 1% of the relevant ES or critical level; and
- the short-term process contribution is less than 10% of the relevant ES.

The long term 1% process contribution insignificance threshold is based on the judgements that:

- It is unlikely that an emission at this level will make a significant contribution to air quality; and
- The threshold provides a substantial safety margin to protect the environment.

The short term 10% process contribution insignificance threshold is based on the judgements that:

- spatial and temporal conditions mean that short term process contributions are transient and limited in comparison with long term process contributions; and
- the threshold provides a substantial safety margin to protect the environment

Where an emission is screened out in this way, we would normally consider that the applicant's proposals for the prevention and control of the emission to be acceptable. Where the long-term PC is greater than the threshold, the assessment must continue to determine the impact by considering the predicted environmental concentration (PEC). The PEC is the combination of the PC substance to air and

the background concentration of the substance which is already present in the environment. We can conclude 'no likely significant effect' (alone and in-combination) for long term emissions where the PEC is <70% of the environmental standard. For short-term emissions, a detailed assessment is required if the PC is greater than 10% of the critical level.

***Emissions from the main stack:***

When considering emissions from the main stack, short term NO<sub>x</sub>, ammonia and nitrogen oxides (as nutrient nitrogen) at the Isle of Portland to Studland Cliffs SAC could not be screened out. We have therefore taken these emissions on to a Stage 2 assessment.

All other emissions screened out as predicted process contributions are either below the significance screening thresholds for long and short term critical levels and critical loads (<1% of the long term and <10% of the short term) or, where relevant, below 70% of the environmental standard when the background is taken into account (PEC).

***Emissions from the emergency Diesel Generator (EDG):***

The air quality impact of the operation of the EDG has been quantified using the ADMS dispersion model. This is the same model used to carry out the dispersion modelling of the emissions from the main stack.

The EDG would operate under the following scenarios:

- For testing and maintenance purposes – expected to be tested every two weeks for less than 30 minutes; and
- In the event of loss of grid connection to maintain operation of the abatement and control systems to enable a safe shutdown the ERF – assumed to be typically no more than 4 hours for any one event.

The tables below present the maximum predicted impact at any grid point within the Isle of Portland to Studland Cliffs SAC and Isle of Portland SSSI (worst case from the 5 years of meteorological data considered). These are primarily overlapping designations; however, impacts have been presented for each site individually because the extents of the designations are slightly different where the greatest impacts from the EDG occur, with the SSSI being slightly closer to the PPP than the SAC.

The PEC has also been calculated. The background tile where the PPP is located already exceeds the NO<sub>x</sub> annual critical level. The APIS background data for 2019 gives a background value of 31.3 µg/m<sup>3</sup> for the 1 km grid square containing the PPP and highest impacts. The applicant notes a value of 34 µg/m<sup>3</sup> based on Defra average background maps (based on the 2018 Defra mapped background dataset). As a conservative approach we will consider the higher background PEC value in our assessment. The applicant's assessment calculates daily NO<sub>x</sub> PECs assuming

backgrounds of 34 and 23  $\mu\text{g}/\text{m}^3$ . There is no monitoring data available therefore we cannot verify whether a lower background NO<sub>x</sub> concentration would be appropriate in this case. Only the higher background level is considered below. However, we accept that there may be a high geographical variability of background NO<sub>x</sub> within this tile as it covers the docks, PPP location, and parts of the SAC and SSSI. Therefore, the use of the higher background value to assess the potential impact on the SAC/SSSI may be considered conservative as the highest background levels may be expected in the vicinity of the port.

The reference period used is daily, we consider that the annual background level is both representative and conservative and therefore appropriate for use in the assessment.

### Testing

The results are based on the assumptions that:

- The EDG operates at full load for the entire 30 minutes of testing
- For the remaining 30 minutes of the 1-hour period the engine is off – i.e. no emissions
- The emissions of NO<sub>x</sub> are at a higher-level during start-up (first 10 minutes); and
- Testing could start at any time between the hours of 08:00 and 17:00.

Table 1 – Predicted PC from testing of the EDG

Site	Approx. distance from PPP at closest point (m)	Pollutant	Reference period	Critical Level (CL <sub>e</sub> ) ( $\mu\text{g}/\text{m}^3$ )	PC ( $\mu\text{g}/\text{m}^3$ )	PC as % CL <sub>e</sub>	Back-ground ( $\mu\text{g}/\text{m}^3$ ) Note 1	PEC ( $\mu\text{g}/\text{m}^3$ )	PEC as % CL <sub>e</sub>
Isle of Portland to Studland Cliffs SAC	45	NO <sub>x</sub>	Daily	75	32.6	43.5	34	66.6	88.9
Isle of Portland SSSI	12	NO <sub>x</sub>	Daily	75	38.4	51.2	34	72.40	96.5

For short-term emissions, a detailed assessment is required if the PC is greater than 10% of the critical level. We have therefore concluded a likely significant effect for short term NO<sub>x</sub> emissions and will consider this pollutant further in our Stage 2 assessment.

### Emergency operations

This assumes that:

- The event would last for 4 hours and could occur at any time of the day or night;



- The EDG operates at full load for the first hour, followed by 70% loading for the second hour, and 50% loading for the remaining 2 hours of emergency operation; and
- The emissions of NO<sub>x</sub> are at a higher-level during start-up (first 10 minutes)

Table 2 – Predicted PC from emergency operation of the EDG

Site	Approx. distance from PPP at closest point (m)	Pollutant	Reference period	Critical Level (CL <sub>e</sub> ) (µg/m <sup>3</sup> )	PC (µg/m <sup>3</sup> )	PC as % CL <sub>e</sub>	Back-ground (µg/m <sup>3</sup> ) Note 1	PEC (µg/m <sup>3</sup> )	PEC as % CL <sub>e</sub>
Isle of Portland to Studland Cliffs SAC	45	NO <sub>x</sub>	Daily	75	78.1	<b>104.1</b>	34	112	<b>149.4</b>
Isle of Portland SSSI	12	NO <sub>x</sub>	Daily	75	113.9	<b>151.9</b>	34	147.9	<b>197.2</b>

As shown in Table 2 the maximum 24-hour impact is predicted to exceed the Critical Level of 75 µg/m<sup>3</sup>. However, this conservatively assumes that the EDG is required for emergency usage during the worst-case weather conditions. The probability of this occurring has been calculated as follows:

1. The dispersion model has been used to determine how many times the contribution from the operation of the EDG during an emergency event is more than the headroom – i.e. more than the critical level of 75 µg/m<sup>3</sup> minus the background concentration.
2. There are 8757 hours in each year in which an event could have started and lasted for four hours during the year.
3. The chance of an event occurring which could have led to an exceedance is calculated as (1) divided by (2), assuming that one event occurs per year.

The probability of the PEC exceeding the daily mean Critical Level in an emergency scenario in an average year is 1.41% in the SSSI and 0.21% in the SAC. This is based on the maximum number of PEC exceedances of the Critical Level at any point using 5 years of weather data. This is conservative, as there have only been three grid outages over the past six years. Therefore, an exceedance of the daily mean Critical Level is unlikely.

The Environment Agency’s “guidance for air quality assessments for specified generators” is designed to assess the situation where a generator only operates occasionally, but in every year, hence a 5% probability of an exceedance of the daily mean Critical Level in any one year leads to a likely exceedance over a 20 year period (5% x 20 years = 100%).

The average probability of the PEC exceeding the daily mean Critical Level in the SSSI is 1.4% meaning that the EDG would need to operate for approximately 70 years for the probability of the PEC exceeding the Critical Level in the SSSI to exceed 100% ( $100\% / 1.41\% = 70$  years), or approximately 470 years for the SAC. Under the Environment Agency guidance the probability of an exceedance at the SAC can be described as 'highly unlikely'.

As part of our assessment, we have also taken into account the likelihood of the source/pathway/receptor mechanism and screened out the environmental risk of operating scenarios that we consider highly unlikely. The emergency generator is designed and configured so that in the event of a mains failure, it will fire up to meet the load demand at the site. This scenario will not be permitted as a normal operation, it is an emergency operation allowed to happen only in the unlikely event of failure of electrical supply from the grid. Measures will be in place to prevent and manage/mitigate the occurrence of this emergency operation.

The primary prevention measure relied upon to avoid this emergency scenario is the highly reliable design of the electrical grid and of the site connections to it. Based on the information in the application, we agree that this feature of the installation is compliant with the best available techniques (BAT) and that the requirement to run the back-up generator in an emergency is therefore minimised as far as possible. These preventative, management and mitigation measures are not specifically implemented or specified to prevent and mitigate impacts at the conservation sites under assessment, instead they have been specified as part of the BAT compliance and structural set up of the installation.

The short-term NO<sub>x</sub> process contributions for the emergency operations of the site are above the insignificance threshold set in our guidance, however the structural preventative measures taken to avoid the occurrence of this emergency scenario make the source/pathway/receptor mechanism very unlikely. For the PPP, we consider that the reasonably likely source/pathway/receptor mechanism would consist of periodic testing operations of the diesel generator. We have taken short term NO<sub>x</sub> emissions from testing operations only on to a Stage 2 HRA.

## **9. In combination assessment (further details)**

Short term NO<sub>x</sub>, ammonia and nitrogen oxides (as nutrient nitrogen) at the Isle of Portland to Studland Cliffs SAC could not be screened out.

All other emissions screened out as having no likely significant effect in combination. This is either because the PC is below the screening thresholds or because the 70% screening threshold for PEC (a simple in combination test) is not exceeded. This means that although the pollutants from the PPP were of possible concern when considered by themselves, they are judged to have no likely significant effect in combination, because environmental critical levels/critical loads

are not predicted to be approached or exceeded when other existing sources are taken into account (through their contribution to the ambient background concentrations), in addition to the process contribution from the PPP under consideration.

The PEC for nutrient nitrogen deposition and ammonia exceeded 70% of the critical level at the Isle of Portland to Studland Cliffs SAC. Therefore, a more detailed Stage 2 assessment is required. We have also taken short term NOx emissions from the EDG (testing operations) and the main stack emissions on to a Stage 2 HRA as short-term emissions exceed 10% of the critical level.

## **10. Information / Advice**

This section summarises the information and or advice requested / received during the screening.

### **Environment Agency internal advice and consultation (if applicable)**

We consulted our Air Quality Assessment Unit (AQMAU) to audit the applicant's Air Quality assessment. With the exception of the 'cavity region' behind the proposed buildings (discussed in the Stage 2 assessment), they confirmed that although we could not reproduce the numerical predictions they agreed with the overall conclusions of the assessments.

### **Natural England information / advice (if applicable)**

We have completed the Stage 1 and 2 assessments taking into account comments received, these are detailed in sections 7 (HRA Stage 1) and 17 (HRA Stage 2).

### **Third party advice (if applicable)**

No consultation with third parties.

## **11. References**

- Powerfuel Portland Limited, Appendix D.2: Process Emissions Modelling, dated August 2020
- Portland Energy Recovery Facility, Environmental Statement, Chapters 4 and 10, dated September 2020
- Powerfuel Portland Ltd, Annex B to Schedule 5 Request – Air Quality Impact of Operation of Emergency Diesel Generators, dated November 2021
- Air Pollution Information System (APIS) Site Relevant Critical Loads and Source Attribution

- Environment Agency - Permitting instruction 66\_12 Simple air assessment on habitats
- Environment Agency - Environment Agency - 67\_12 Detailed air assessment on habitats.

## 12. Decision

### Isle of Portland to Studland Cliffs SAC:

The Environment Agency has decided to carry out an appropriate assessment because significant effects alone could not be screened out.

Significant effects could not be ruled out for short-term NOx, ammonia and nitrogen oxides (as nutrient nitrogen). These are the subject of further assessment (Stage 2). All other effects are ruled out at Stage 1.

### Chesil and the Fleet SAC, Crookhill Brick Pit SAC, Studland to Portland SAC, Chesil Beach and The Fleet SPA and Chesil Beach and The Fleet Ramsar:

The Environment Agency concludes there is no likely significant effect.

Name of Environment Agency officer: XXXXXXXXXXXXX

Job title: Principal Permitting officer

Date: 13 March 2023

## 13. Consultation (if applicable)

Date sent to Natural England for consultation: 14 March 2023

Date response received from Natural England: 10 July 2023

### **Natural England advice on the screening for likely significant effects (if applicable)**

Natural England response to consultation (combined HRA Stage 1 and 2) included in Appendix 2.

Do Natural England have concerns about the assessment? No

Do Natural England have concerns about the decision? No

Name of Natural England officer: XXXXXXXXXXXXX

Job title: Conservation and Planning Senior Advisor

Date: 10 July 2023

# Stage 2 Habitats Regulations Assessment

Environment Agency record of appropriate assessment

This is a record of the appropriate assessment required by Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended), undertaken by the Environment Agency in respect of the permission, plan or project (PPP) detailed in Section 14 for the following relevant sites:

Isle of Portland to Studland Cliffs SAC (UK0019861)^

This record starts at Section 14 because it follows on from the Stage 1 HRA which covers the screening for likely significant effects of this PPP (Sections 1-13).

Version: Draft for consultation, 13/03/2023

## 14. Permission, plan or project (PPP) details

See section 1 of the Stage 1 Habitats Regulations Assessment (above).

## 15. Summary of Stage 1 (likely significant effect) conclusion

Significant effects alone could not be screened out for the Isle of Portland to Studland Cliffs SAC at the Stage 1 Habitats Regulations Assessment for:

- **Toxic contamination** - short term NOx impacts
- **Nutrient Enrichment** – Nutrient nitrogen deposition from nitrogen-containing atmospheric contaminants
- **Toxic contamination** - ammonia

Further consideration of the effects of these pollutants are presented in section 17 below.

## 16. Further information about the proposal

The proposal is described in section 2 of the Stage 1 Habitats Regulations Assessment. There is no additional detail or new information that is relevant to the appropriate assessment.

## 17. 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:

### **Impacts alone from daily average nitrogen oxides concentration at the Isle of Portland to Studland Cliffs SAC**

#### *Emissions from the main stack:*

The short-term NO<sub>x</sub> PC is 11.47 µg/m<sup>3</sup>, which is 15.29% of the daily NO<sub>x</sub> critical level of 75 µg/m<sup>3</sup>. The PC is greater than 10% of the critical level. We have therefore concluded a likely significant effect in our Stage 1 Habitats Regulations Assessment.

Where the PC is greater than the screening thresholds, the assessment must continue to determine the impact by considering the predicted environmental concentration (PEC). The PEC is the combination of the PC substance to air and the background concentration of the substance which is already present in the environment.

The PECs can be considered as having 'no adverse effect' on the integrity of the site if the assessment has shown that both the following apply:

- proposed emissions comply with associated emission levels (AELs) or the equivalent requirements where there is no AEL; and
- the resulting PECs won't exceed 100% of the environmental standards.

In the absence of monitoring, background concentrations have been obtained using mapped data available via the APIS website. The 1km<sup>2</sup> tile which covers the PPP, port and part of the Isle of Portland to Studland Cliffs SAC (and Isle of Portland SSSI) already exceeds the environmental criterion (i.e. at 31.3 µg/m<sup>3</sup>, according to 2019 APIS data). The Applicant's contour plots can be used to estimate NO<sub>x</sub> process contributions in this area and the areas of maximum impact for use in the assessment. The modelling shows that in the area with the highest background (i.e. the area already exceeding the environmental criterion) predicted process contributions from the main stack are below the relevant significance screening thresholds for critical levels (<1% of the long term and <10% of the short term). Areas where process contributions exceed these thresholds are likely to be located in the 1 km<sup>2</sup> tiles where NO<sub>x</sub> backgrounds indicate sufficient headroom. Therefore, exceedances are unlikely.

Based on Figures 8 and 9 below, we have selected a background figure of 10.1 µg/m<sup>3</sup> to use in our assessment.

Figure 10 – Background NOx, 2019 APIS data

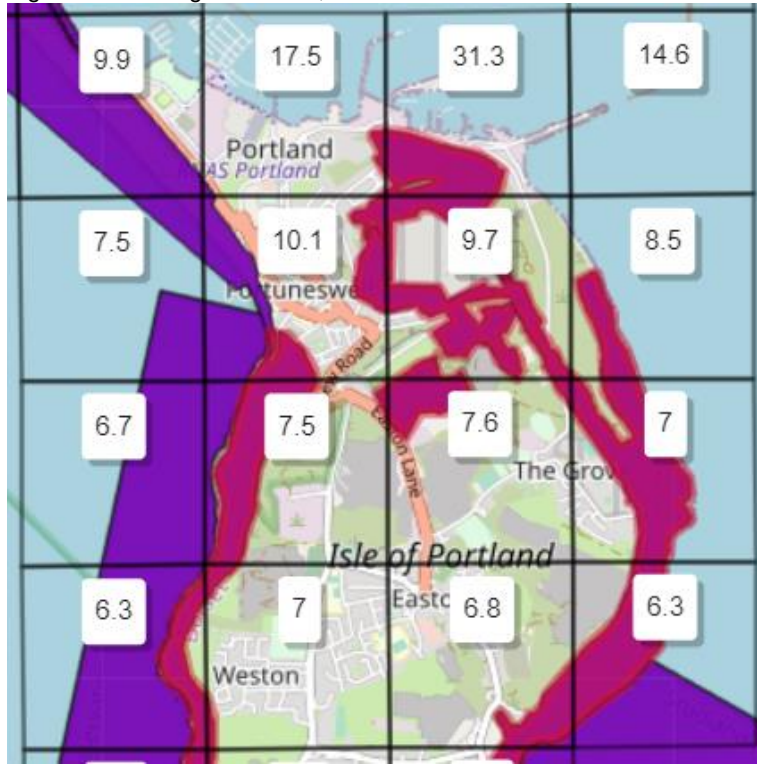
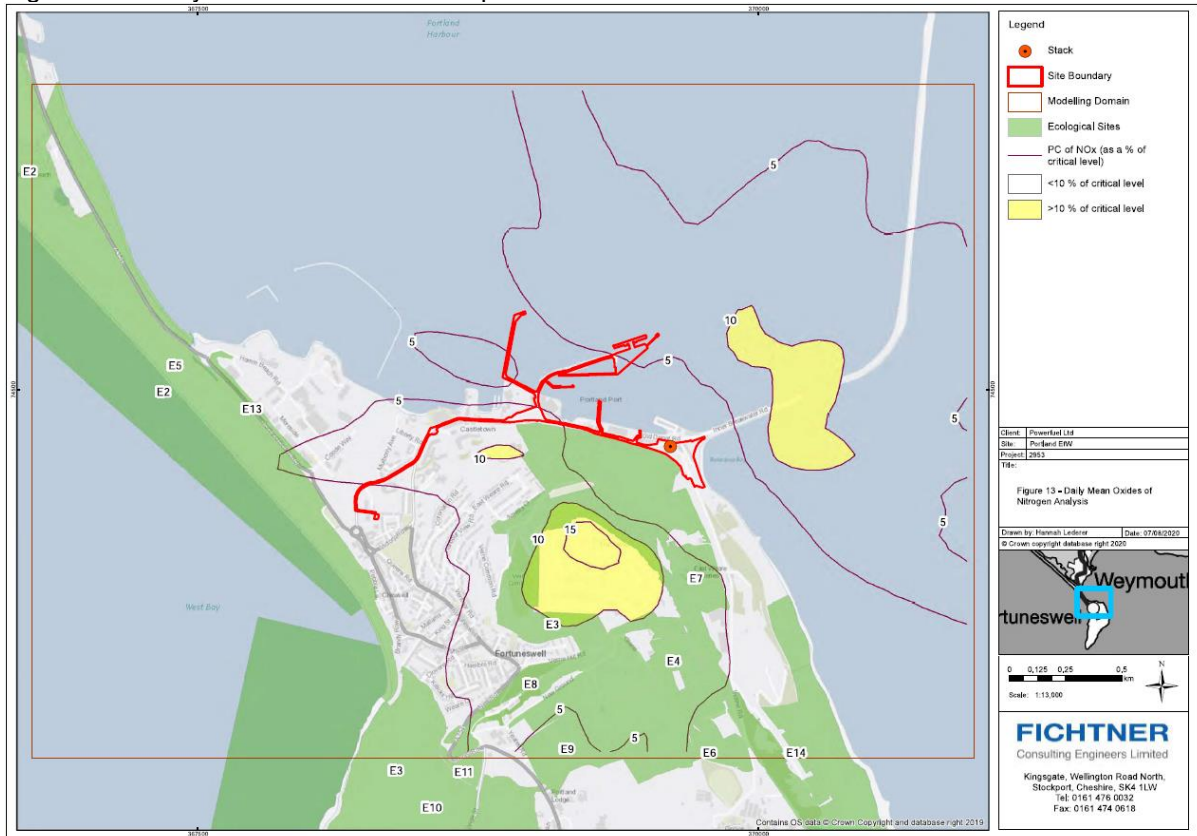


Figure 11 – Daily mean NOx contour map





The PEC is 31.67 µg/m<sup>3</sup> (PC plus twice long-term background), this is 42.23% of the critical level. The PEC is below the critical level. Therefore, it can be concluded that there will be no adverse effect in respect of short term NO<sub>x</sub> emissions from the main stack. No in combination assessment is required. When taking the background into account there is sufficient headroom to conclude that an exceedance of the environmental standard is unlikely.

SNCR is proposed to meet BAT requirements. No specific further measures proposed to reduce NO<sub>x</sub> emissions on basis of habitats assessment.

#### Emissions from the emergency diesel generator:

Significant effects of short-term NO<sub>x</sub> emissions could not be screened out at the Stage 1 Habitats Regulations Assessment. Further consideration of the effects are presented in this section.

We have audited the applicant's air dispersion model and reviewed its selection of input data, use of background data and the assumptions made to inform the assessment. We have also carried out a screening exercise using an air dispersion screening tool developed by the Environment Agency and based on the US EPA AERMOD air dispersion model to the quality of the applicant's model predictions.

The tables below present the maximum predicted impact at any grid point within the Isle of Portland to Studland Cliffs SAC and Isle of Portland SSSI (worst case from the 5 years of meteorological data considered). Both have been considered here as they are primarily overlapping designations. However, impacts have been presented for each site individually because the extents of the designations are slightly different where the greatest impacts from the EDG occur, with the SSSI being slightly closer to the PPP than the SAC

The reference period is daily, we consider that the annual background level is both representative and conservative and therefore appropriate for use in the assessment.

#### Testing

The results are based on the assumptions that:

- The EDG operates at full load for the entire 30 minutes of testing
- For the remaining 30 minutes of the 1-hour period the engine is off – i.e. no emissions
- The emissions of NO<sub>x</sub> are at a higher-level during start-up (first 10 minutes); and
- Testing could start at any time between the hours of 08:00 and 17:00.

Table 3 – Predicted PC from testing of the EDG

Site	Pollutant	Reference period	Critical Level (CL <sub>e</sub> ) (µg/m <sup>3</sup> )	PC (µg/m <sup>3</sup> )	PC as % CL <sub>e</sub>	Back-ground (µg/m <sup>3</sup> ) <sup>Note 1</sup>	PEC (µg/m <sup>3</sup> )	PEC as % CL <sub>e</sub>
Isle of Portland to Studland Cliffs SAC	NO <sub>x</sub>	Daily	75	32.6	43.5	34	66.6	88.8
Isle of Portland SSSI	NO <sub>x</sub>	Daily	75	38.4	51.2	34	72.40	96.5

SSSI: The maximum PC for daily NO<sub>x</sub> is 51.2%, and the PEC is 96.5%, as a percentage of the daily mean critical level of 75 µg/m<sup>3</sup>.

SAC: The maximum PC for daily NO<sub>x</sub> is 43.5%, and the PEC is 88.8%, as a percentage of the daily mean critical level of 75 µg/m<sup>3</sup>.

The PEC is not predicted to be exceeded at any point in the habitat sites. We can therefore conclude that there will be no adverse effect on site integrity. However, our assessment has highlighted an area of higher uncertainty due to building downwash effects, referred to as the ‘cavity region’ (see Figure 12). We have lower confidence in the applicant’s predictions for this area and so further consideration is given below. We consider that exceedances of the daily NO<sub>x</sub> Critical level at the SAC and SSSI are unlikely at locations beyond the cavity region of the site buildings.

The proposed 8 metre EDG stack is located in close proximity to the northeast and northwest facades of site buildings with heights of 41m and 36.5m respectively. There is an area to the south of the proposed buildings where the downwash effect is particularly pronounced (cavity region). Within this cavity region, which extends to approximately 3 building heights distance (or c.125m), there are higher uncertainties in the amount of pollutant recirculation due to high turbulence caused by the building downwash.

Figure 12 shows the approximate location of the proposed buildings, the proposed generator and the ‘cavity region’. It also shows the locations of the SAC and SSSI.

Figure 12



Due to these higher uncertainties, we have little confidence in short-term (daily) NOx predictions in the area of the SSSI/SAC located within the 'cavity region' of the buildings. We therefore cannot rule out exceedances of the daily NOx Critical Level of  $75\mu\text{g}/\text{m}^3$  in this area. There is limited evidence to quantify uncertainties in modelling predictions in regions of such turbulent flow regimes and, therefore, predictions are highly uncertain. This does not mean that we consider that there will be an exceedance, but that the level of uncertainty in this area is too great to rule out the possibility.

It should be noted that the worst-case impacts in this area would only occur when the wind was coming from the north-east quadrant, and this is infrequent and is against the prevailing wind direction. The emissions from the EDG would need to rise, be taken over the 41m building and then drop into the building cavity region on the other side of the building. The applicant stated that it is anticipated that it would be more common for the emissions to be taken around the building. They considered the presence of the building between the EDG and the ecological sites to be a benefit.

We sought advice from Natural England on the characteristics of this area and whether there were any features present which could be sensitive to short term NOx. Natural England advised the following:

*In the location you have indicated the SAC and SSSI habitats consist of dense scrub which is a supporting habitat rather than a feature for which the site is designated. In addition this area, which has been scrub for many years, is not an area where Natural England would seek to secure restoration to*

*calcareous grassland (a SAC feature) hence the proposal is not preventing a restoration objective. The applicant has provided information on the location of sensitive lichens and bryophytes and none are recorded from this area of the SAC.*

*Therefore, Natural England can advise the EA that, whilst AQ thresholds are exceeded, there would not be an adverse effect on the SAC either on existing features or compromising the restoration of features in the future.*

Based on the modelling undertaken by the applicant and the further information received from Natural England we are satisfied that it is possible to ascertain no adverse effect/damage on the integrity of the Isle of Portland to Studland Cliffs SAC and Isle of Portland SSSI.

SNCR is proposed to meet BAT requirements for emissions from the main stack. No specific further measures proposed to reduce NO<sub>x</sub> emissions on basis of habitats assessment.

#### **Appropriate assessment: assessing the impacts alone, Nutrient Nitrogen Deposition at the Isle of Portland to Studland Cliffs SAC**

The applicant has assessed the worst-case impact of the PPP on the European Habitat, by reporting the maximum ground level concentration and deposition rates of specified pollutants within the designated habitats area.

The PEC is above 70% of the critical load we therefore concluded a likely significant effect alone. However, the critical load is not exceeded and there remains reasonable headroom. At 74.46%, the PEC is below the nutrient-nitrogen critical load, and it can be concluded that there will be no adverse effect in respect of nutrient nitrogen deposition.

#### **Appropriate assessment: assessing the impacts alone for Ammonia, at the Isle of Portland to Studland Cliffs SAC**

In the BREF, BAT is regarded as installing SNCR, with the corresponding ammonia ELV as 10 mg/m<sup>3</sup>. However, due to the efficiency of the applicant's unit, a limit lower than the BREF is achievable. The Applicant has proposed a limit for ammonia which is tighter than the BREF incineration emission limit (8 mg/m<sup>3</sup> rather than 10 mg/m<sup>3</sup>), this has been used in the assessment and permit conditions will reflect this emission limit.

The maximum PC for ammonia at the Isle of Portland to Studland Cliffs SAC from the proposed project on its own is calculated as being up to 3% of the relevant critical level. It is noted that the highest PC is predicted over only a relatively small area of the Habitats site, and at a maximum of 3% of the critical level. We regard this as a small contribution, suggesting that the effect may be low.

Where the PC is greater than the thresholds, the assessment must continue to determine the impact by considering the predicted environmental concentration (PEC). The PEC is the combination of the PC substance to air and the background concentration of the substance which is already present in the environment.

The PECs can be considered as having 'no adverse effect' on the integrity of the site if the assessment has shown that both the following apply:

- proposed emissions comply with associated emission levels (AELs) or the equivalent requirements where there is no AEL; and
- the resulting PECs won't exceed 100% of the environmental standards.

If the background concentration is currently exceeding the appropriate environmental criterion and the new process contribution will cause an additional small increase regarded as not significant relative to the background concentration it is still possible to conclude 'no adverse effect'. A decision will be made on a site-by-site basis.

In the area where the PC is exceeding the 1% screening threshold, the maximum ammonia background concentration for this SAC is  $1.18 \mu\text{g}/\text{m}^3$  (source APIS 2019 data). Therefore, the background value already exceeds the relevant environmental standard ( $1 \mu\text{g}/\text{m}^3$ ) by 18%. See figures 13 and 14 below. The background concentration is predicted to exceed the appropriate environmental criterion and the PPP process contribution will cause an additional small increase. The predicted PEC for ammonia is  $1.21 \mu\text{g}/\text{m}^3$ . Which is 21% above the critical level. The PC accounts for 2.48% of the total PEC, meaning 97.52% is the background.

We consider that the small increase in the overall PEC attributed to the PC from the PPP is unlikely to have a significant impact. The scale of the contribution from the PPP (concentration and area/size of impact) is limited. Therefore, we can conclude that the emissions from the proposed PPP will not have an adverse effect on the integrity of the Isle of Portland to Studland Cliffs SAC.

Figure 13 - ammonia process contributions

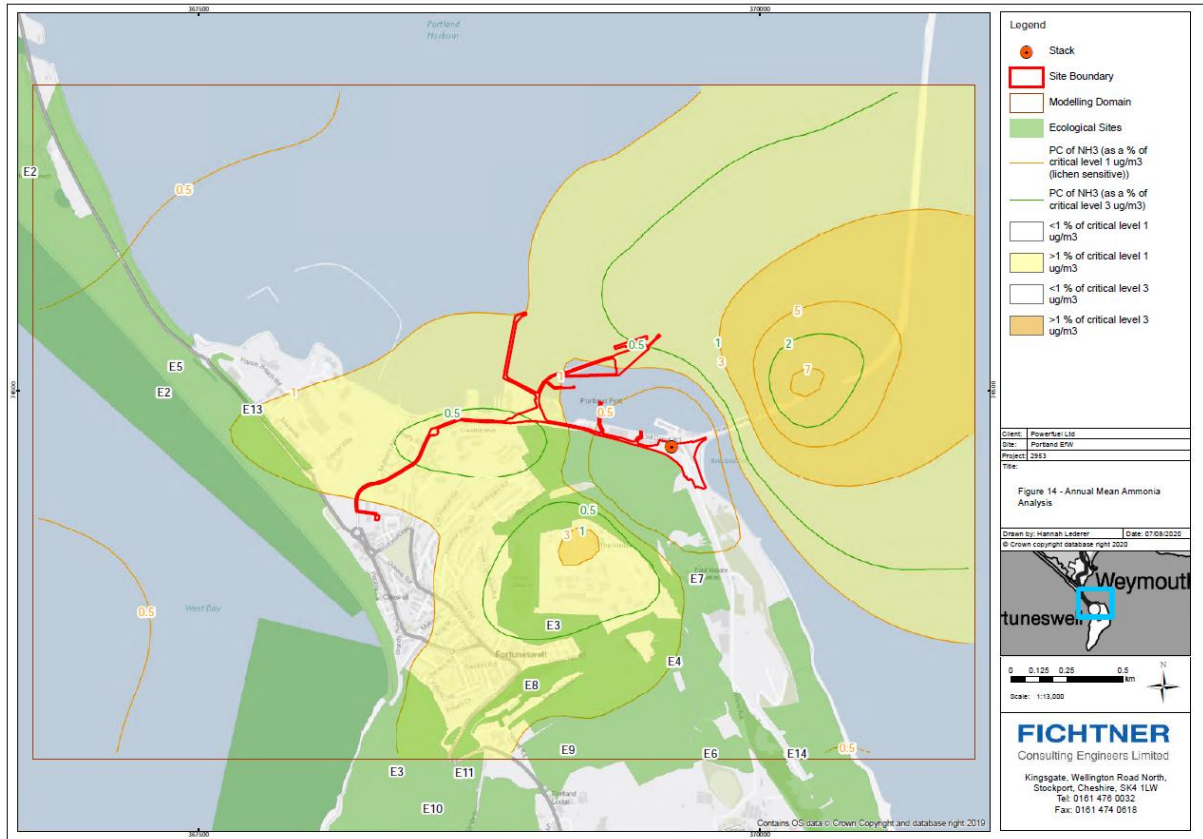


Figure 14 - ammonia background (source APIS)



## **Environment Agency opinion on adverse effects alone**

We have considered the results of the appropriate assessment, as well as the conservative nature of the applicant's air quality assessment (see section 8 of the Stage 1 Habitats Regulations Assessment). It is possible to ascertain no adverse effect on the integrity of the following site(s) alone:

Isle of Portland to Studland Cliffs SAC

This conclusion is not dependent on mitigation measures or any conditions. It is proposed that the main stack will have SNCR fitted. This is regarded as BAT for this type of equipment.

## **18. Appropriate assessment: assessing the effects in combination**

'Alone' effects were considered in Section 17. It was concluded that there was no effect alone, but effects were not completely avoided. Assessment of 'in combination effects' is presented here:

### **PPPs to be assessed in combination**

The applicant has not identified information on any relevant future projects. We have considered existing developments identified by our screening as being within 10km of the closest point of the habitat site to the PPP in line with our guidance. Two relevant permitted sites were identified:

Sunseeker International Limited – Approximately 1.5km to the west of the PPP. The facility comprises of one biomass boiler burning untreated waste wood chips with a thermal rated input of 1.1 MWth. The permit was granted in 2021, therefore emissions from the site are not included with the background used in the assessment. Detailed air quality modelling assessed during the permit determination showed the effects of NO<sub>x</sub> were limited to a small area. The biomass boiler will not release any ammonia, hydrogen fluoride, or sulphur-based pollutants. The determination of the permit concluded that emissions will not affect any sites of nature conservation or habitats identified. Modelling demonstrated that the biomass boiler would have an insignificant impact at the nearest sensitive ecological habitats. We therefore consider that emissions from the biomass boiler are not likely to have a significant effect in combination with the PPP. We conclude no adverse effect on the integrity of the SAC in combination with the PPP.

Chickerell Generation - Approximately 7.5km to the north-west of the PPP. This is a permitted large combustion plant (open cycle gas turbine). The permit was granted in

1997, therefore any emissions from the site are already included with the background. In addition, we consider that there is unlikely to be a significant effect in combination due to distance from the PPP and the location of Chickerell Generation not being in the prevailing wind direction. We conclude no adverse effect on the integrity of the SAC in combination with the PPP.

## **Environment Agency opinion on adverse effects in combination**

It is possible to ascertain no adverse effect on the integrity of the following site(s) in combination:

Isle of Portland to Studland Cliffs SAC

In combination effects were screened out for other sites during our Stage 1 Assessment.

This conclusion is not dependent on mitigation measures or any conditions. It is proposed that the main stack will have SNCR fitted. This is regarded as BAT for this type of equipment.

## **19. Information / Advice (if relevant)**

### **Environment Agency internal consultation (if applicable)**

We consulted our Air Quality Assessment Unit (AQMAU) to audit the applicant's Air Quality assessment. With the exception of the 'cavity region' discussed above, they confirmed that although we could not reproduce the numerical predictions they agreed with the overall conclusions of the assessments.

### **Natural England comments (if applicable)**

We have completed the Stage 1 and 2 assessments taking into account comments received with regards to the advice included in sections 7 (HRA Stage 1) and 17 (HRA Stage 2).

### **Third party comments (if applicable)**

Not applicable.

## **20. References**

- Powerfuel Portland Limited, Appendix D.2: Process Emissions Modelling, dated August 2020
- Portland Energy Recovery Facility, Environmental Statement, Chapters 4 and 10, dated September 2020



- Powerfuel Portland Ltd, Annex B to Schedule 5 Request – Air Quality Impact of Operation of Emergency Diesel Generators, dated November 2021
- Air Pollution Information System (APIS) Site Relevant Critical Loads and Source Attribution
- Environment Agency - Permitting instruction 66\_12 Simple air assessment on habitats
- Environment Agency - Environment Agency - 67\_12 Detailed air assessment on habitats.
- AQTAG 17: Guidance on in combination assessments for aerial emissions from EPR permits
- AQTAG 21: Likely significant effect' – use of 1% and 4% long-term thresholds and 10% short-term threshold
- SAC features, Isle of Portland to Studland Cliffs SAC - Lower Plants

## 21. Draft conclusion

The Environment Agency has completed the appropriate assessment and the draft conclusion is:

The PPP can be ascertained to have no adverse effect on the integrity of the following site(s), either alone or in combination with other plans and projects:

Isle of Portland to Studland Cliffs SAC

As part of the Stage 1 assessment the Environment Agency concluded there is no likely significant effect, either alone or in combination with other plans and projects for:

Chesil and the Fleet SAC, Crookhill Brick Pit SAC, Studland to Portland SAC, Chesil Beach and The Fleet SPA and Chesil Beach and The Fleet Ramsar:

This conclusion is not dependent on any mitigation measures or conditions.

SNCR is proposed to meet BAT requirements for emissions from the main stack. No specific further measures proposed to reduce NOx emissions on basis of habitats assessment.

The Environment Agency is minded to proceed with a plan or project(subject to other requirements).

Name of Environment Agency officer: XXXXXXXXXXXXX

Job title: Principal Permitting officer

Date: 13 March 2023

## 22. Formal consultation

### Natural England consultation

Date sent to Natural England for formal consultation: 14 March 2023

Date response received from Natural England: 10 July 2023

Natural England advises that the permission can be granted.

See Appendix 2

Name of Natural England officer: XXXXXXXXXXXXX

Job title: Conservation and Planning Senior Advisor

Date: 10 July 2023

### Public consultation (if relevant)

Not relevant

## 23. Final appropriate assessment record

This is a record of the appropriate assessment required by Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended), undertaken by the Environment Agency.

The screening (Stage 1) concluded that the PPP would be likely to have a significant effect on the following site(s):

Isle of Portland to Studland Cliffs SAC (UK0019861)^

It can be ascertained that the PPP would not have an adverse effect on the integrity of the following site(s), either alone or in combination with other plans and projects:

Isle of Portland to Studland Cliffs SAC (UK0019861)^

This conclusion is not dependent on mitigation or conditions.

### Natural England formal consultation

Natural England was consulted on the appropriate assessment, and the Environment Agency's conclusions, on 14 March 2023 and its representations, to which the Environment Agency has had regard, are included in Appendix 2. The conclusions of this appropriate assessment are in accordance with the advice and recommendations of Natural England.

## **Public consultation**

It was not considered necessary to take the opinion of the general public under Regulation 63(4).

Name of Environment Agency officer: XXXXXXXXXXXXX

Job title: Principal Permitting officer

Date: 19 July 2023

## **Appendix 1:**

### **Glossary:**

AEL - Associated Emission Levels

APIS – Air Pollution Information System

BAT – Best Available Techniques

BREF – BAT Reference Document

Cle – Critical Level

CLo – Critical Load

EDG - Emergency Diesel Generator

EfW – Energy from Waste

ELV – Emission Limit Value

EPR – Environmental Permitting Regulations

ERF - Energy Recovery Facility

ES - Environmental Standards

HF - Hydrogen Fluoride

IED – Industrial Emissions Directive

NH<sub>3</sub> – Ammonia

NO<sub>x</sub> - Oxides of nitrogen

PC – Process Contribution

PEC - Predicted Environmental Concentration

PPP - Permission, plan or project (i.e. the proposed Energy from Waste Plant)

SAC – Special Area of Conservation

SNCR - Selective Non Catalytic Reduction

SO<sub>2</sub> - Sulphur Dioxide

SPA – Special Protection Area

SSSI – Site of Special Scientific Interest

## Appendix 2:

Date: 10 July 2023  
Our ref: [Click here to enter text.](#)  
Your ref: [Click here to enter text.](#)



[Click here to enter text.](#)

**BY EMAIL ONLY**

Customer Services  
Hornbeam House  
Crewe Business Park  
Electra Way  
Crewe  
Cheshire  
CW1 6GJ

T 0300 080 3900

Dear [REDACTED]

**HRA 1 and HRA 2 - Installation - Environmental Permit (Industry Regulation) -  
EPR/AP3304SZ/A001 - SY 69607 74248 - 11/04/2023**

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Thank you for consulting Natural England on the above Environmental Permit.

Natural England agree with the assessment approach used for the EDG.

Natural England agree with the four atmospheric pollutants identified as relevant to assessing atmospheric impacts (NO<sub>x</sub>, SO<sub>2</sub>, NH<sub>3</sub>, HF).

Natural England agree with the use of the more conservative 24 hour Critical Level of 75 µg/m<sup>3</sup> for ammonia and the use of the lowest CL or CLo for assessment purposes in principle.

Natural England concur with the risks which have been screened out and those screened in.

### **Stage 1**

#### **Chesil and the Fleet SAC**

Natural England concur with the assessment for N deposition of no likely significant effect (PC = 0.073kg/ha/yr).

Natural England concur with the conclusions reached for habitat loss and toxic contamination.

#### **Chesil and the Fleet Ramsar**

Natural England concur with the assessments conclusion for the Ramsar.

#### **Chesil and the Fleet SPA**

Natural England concur with the assessments conclusion for the SPA.

#### **Crookhill Brick Pit SAC**

Natural England concur with the assessments conclusion for the SAC

#### **Isle of Portland to Studland Cliffs SAC**

Natural England concur with the assessments conclusion for acidification.

Natural England concur with the assessments conclusion for N deposition (> 1% CLo) which is to progress to Stage 2.

Habitat loss Natural England concur with the assessments conclusion for N deposition, ammonia and short term NOx emissions.

Natural England concur with the assessments conclusion for ammonia (> 1% CL) and short term NOx emissions (> 1% CL) which is to progress to Stage 2.

EDG

Natural England concur with the assessments conclusion for short term NOx emissions (> 1% CL) which is to progress to Stage 2.

**Studland to Portland SAC**

Natural England concur with the assessments conclusion.

**Section 8.**

Main stack, Natural England concur with the assessments conclusion to take consideration of N deposition, ammonia and short term NOx emissions through to stage 2.

EDG, Natural England concur with the assessments conclusion to take consideration of short term NOx emissions through to stage 2.

Section 9. In combination assessment

Natural England concur with the assessments conclusion to take consideration of N deposition, ammonia and short term NOx emissions through to stage 2.

**Section 12**

Natural England concur with the conclusions reached regarding habitats sites which may be scoped out and those which are scoped through to stage 2.

**Section 14**

Natural England concur with the adverse effects and habitats site to be considered.

**Stage 2**

**Section 17 : alone**

Natural England agree that this stage should focus on : Isle of Portland to Studland Cliffs SAC.

**NOx**

Main Stack, the PEC is 42.23% of the Cle for NOx. Natural England concur with the assessment in the report that no further specific measures are required

EDG, the position of the generator and its 8m stack leads to a degree of uncertainty concerning local air turbulence (the cavity region behind the buildings). Natural England agree that this leads to uncertainty.

Natural England note the reference to our previous advice and advise that the Agency seek a permit condition which restricts the testing of the generator to weather conditions which will disperse the exhaust in a direction away from the SAC eg only during south westerly winds. This would reduce the risk of any effects further. The Agency is best placed to consider if it would be appropriate to consider a further constraint such as only when the wind speed is above a certain minimum speed?

Natural England concur with the conclusion reached by the report that it is possible to reach a conclusion of no adverse effect on the integrity of the SAC.

**N deposition**

Natural England has provided initial advice at Annexe 1. In this advice Natural England highlighted that additional N deposition *could* cause enhanced and undesirable vegetation growth on the SAC habitats. This may be addressed through enhanced grazing pressure on the site. It is now understood that the Dorset Council one of the landowners is in a position to address this through a stewardship scheme and the other landowner, Portland Port has statutory obligations to secure

positive management on their land which may also be enforced. Provisions for this matter are therefore likely to be resolved through the planning system should the application be taken to appeal. Since the applicant cannot operate the permit without the planning permission Natural England is satisfied that no further consideration is required in this process.

Natural England concur with the conclusion reached by the report that it is possible to reach a conclusion of no adverse effect on the integrity of the SAC.

**Ammonia**

The use of the SNCR reduces the ammonia emission limit to 8mg/m<sup>3</sup>. Natural England note that there will be an increase of 3% of the Cle and that the background levels already exceed the 1µg/m<sup>3</sup> Cle. Natural England has considered the best available data relating to sensitive species of bryophytes and lichens and conclude that these species are located at a level and location which is at or below the height of the main stack and the 1% contour and hence the risk of adverse effects is reduced.

Natural England concur with the reports conclusion that it is possible to reach a conclusion of no adverse effect on the integrity of the SAC.

**Section 18 : In combination**

Natural England note the report has screened in two permissions for consideration.

Natural England concur with the conclusion reached in the assessment of other permissions, plans or projects that it is possible to reach a conclusion of no adverse effect on the integrity of the SAC.

**Section 22**

Natural England advise that we have no further comments on the reports relating to the habitats sites and SSSI and advise that the permission sought may be granted.

I trust this advice will assist the Authority.

Yours sincerely

[REDACTED]  
Conservation and Planning Senior Advisor  
Dorset Team  
Wessex Area Team  
Natural England  
[REDACTED]