POWERFUEL

Portland energy recovery facility

Environmental statement
Second addendum

January 2022

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Second addendum

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Introduction

NTS.1 In September 2020, Powerfuel Portland Limited submitted a full planning application to Dorset Council for the construction of an energy recovery facility (ERF) with ancillary buildings and works including administrative facilities, gatehouse and weighbridge, parking and circulation areas, cable routes to ship berths and existing off-site electrical substation, with site access through Portland Port from Castletown (application reference: WP/20/00692/DCC) on land within Portland Port.

NTS.2 The application was accompanied by an environmental statement (ES) prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended; hereafter the EIA Regulations), which provides an assessment of the likely significant effects associated with its construction and operation.

NTS.3 An addendum to the ES was submitted in August 2021 following a formal request for additional information and clarification from Dorset Council, some of which constituted 'further environmental information' and was requested in accordance with Regulation 25 of the EIA Regulations and Section 62(3) of the Town and Country Planning Act 1990.

NTS.4 Natural England has since provided its response to the consultation on the planning application (dated 1 December 2021), which identifies several areas where further information is required.

NTS.5 Powerfuel Portland Limited is also currently progressing an application with the Environment Agency to obtain an Environmental Permit for the proposed ERF. As part of that separate regulatory process, Powerfuel Portland Limited has been undertaking additional technical work and has now prepared further information in relation to matters raised during the permitting process.

NTS.6 This information is also relevant to Dorset Council, acting in its role as the Waste Planning Authority, and specifically in the context of matters raised by Public Health England (now known as the UK Health Security Agency and Office for Health Improvement and Disparities) in its consultation response letter dated 2 November 2021.

NTS.7 As a result of the above, Dorset Council has again formally requested additional information and clarification, in a letter dated 26 January 2022. As previously, the council confirmed that it considers some of the information requested constitutes 'further environmental information', which is requested in accordance with the relevant regulations.

NTS.8 This report has been prepared to review the council's letter and provide the information that is considered to be 'further environmental information' under Regulation 25 of the EIA Regulations. It forms a second addendum to the original ES and is summarised in this non-technical summary.

NTS.9 The review of the council's letter also identifies where matters raised are considered to be outside the scope of the EIA, which are not formally

requested under Regulation 25 and do not comprise 'further environmental information'. Responses to these points are provided in stand alone documents within the submission.

Further environmental information

NTS.10 This section presents a summary of the further environmental information provided in the second ES addendum and follows the structure of the main report.

Projects included within the cumulative effects assessment

NTS.11 Dorset Council's letter requested further information on the projects included within the cumulative effects assessment in the EIA. A review has determined that a number of projects within the 1997 and 2010 Portland Harbour Revision Orders, which were included in the original assessment, will need to be screened to determine whether they must be subject to an appropriate assessment under the Habitats Regulations before they can proceed. This means that they should not be included in the EIA cumulative effects assessment.

NTS.12 In addition, given the passage of time since the original assessment was undertaken, the need to include new consented developments within the assessment was reviewed. It is understood that a resolution to grant planning permission was made in November 2021 for a building for the servicing and maintenance of helicopters at the heliport on Coode Way in Portland.

NTS.13 As a result, the list of cumulative developments has been reviewed to exclude Port projects that have not yet been undertaken and add in the heliport building. Table NTS.1 sets out the revised list of projects that has been used in the updated cumulative effects assessment. For clarity, table NTS.2 sets out the projects that have been removed from the original assessment. A revised version of figure NTS.7, which shows the locations of the cumulative projects, has been prepared. This is included at the end of this report and replaces the version in the original NTS of the September 2020 ES.

Development	Details
Ocean Views, Hardy Complex, Castle Road, Portland (phase 2)	Redevelopment of former naval accommodation block into 157 apartments, together with the development of 191 new build homes, with associated car parking (application reference: 02/00703/FUL, as amended)
Royal Manor Arts College, Weston Road, Portland	Demolition of existing buildings and erection of 98 dwellings (application reference: WP/19/00919/OUT)
Verne Common Road and Ventnor Road, Portland	Development of vacant land by the demolition of a garage and erection of 25 dwellings (application reference: WP/18/00662/FUL)
Southwell Primary School, Sweethill Lane, Portland	Demolition of existing buildings and construction of up to 58 dwellings (application reference: WP/17/00866/OUT)
Ferrybridge Inn, Portland Road, Weymouth	Demolition of existing public house and construction of up to 22 residential units (application reference: WP/14/00929/OUT)
Disused Quarry Works Stockyard, Bottom Coombe, Park Road, Portland	Development of approximately 62 dwellings (application reference: WP/14/00591/OUT)
Redundant buildings at Bumpers Lane, Portland	Demolition of existing redundant industrial buildings and erection of approximately 64 dwellings (application reference: WP/14/00330/OUT)

Development	Details
Plot X, Mulberry Avenue, Portland	Erection of two blocks of two storey business units comprising three B1 units and six B8 units (total floorspace 766 m^2) with associated parking and landscaping (application reference: WP/18/00940/FUL)
Plot M1B, Hamm Beach Road, Portland	Erection of three industrial and commercial buildings (B1, B2 and B8, total floorspace 2,879 m^2) and associated external works (application reference: WP/17/00631/FUL)
The Heliport, Coode Way, Portland	Erection of a building for servicing and maintenance of helicopters and additional facilities incidental to heliport use (application reference: WP/20/00467/OUT)
Project Osprey, Portland Port	Construction of two animal feed storage and distribution warehouses, each 140 m x 45 m x 20 m, and an office building 16 m x 4 m x 5.15 m, to handle 250,000-300,000 tonnes per year (council reference: WP/19/00514/SCRE), which is currently under construction
Project Inner Breakwater and Camber Area Alterations, Portland Port	Development of operational land for the purposes of shipping and in connection with the embarking, disembarking, loading, discharging or transport of passengers, livestock or goods, including a new berth apron in the Crane Berth Apron Operational Area and a new yard pavement at the Camber Operational Yard to enable the berthing and handling of ships up to 120 m long, their cargoes and passengers (council reference: WP/15/00328/PD). The works to the listed inner breakwater and adjacent structures to enable the use of the crane berth have been completed under application 14/01071/LBC and are part of the baseline

Table NTS.1: Projects included in the revised cumulative effects assessment

Development	Details
Remaining development under the 1997 Portland Harbour Revision Order	Open storage of waste products, including waste wood and metal, on the Parade Ground area of the Rifle Range
	High Speed Ferries: a cross-Channel passenger / car high speed ferry operating two to three daily sailings (round trips) over the 26-week summer season (April to October) and weekend sailings (Friday, Saturday and Sunday) over 20 weeks during the winter season
	B1 / B2 / B8 development on several areas of land at the Port that have yet to be developed
	Landside aquaculture: construction of a warehouse building for aquaculture, producing 200-300 tonnes of fish, on a site measuring 135 m x 37 m (application references: WP/14/01033 and WP/16/00150/RES) – these permissions have lapsed
Development under the 2010 Portland Harbour Revision Order	New berthing faces to the north and east of New Quay and Coaling Pier Island (Works 1 and 5) and new berthing faces to the retaining structures to the south and west of Queen's Pier (Work 7) by the construction of concrete blockwork quay walls and / or piled and suspended deck sections and / or rock armoured rubble mound retaining embankments
	Reclamation of as much of the foreshore and seabed as is required for the above works (Works 2, 6 and 8)
	Two 30 m wide floating linkspans commencing on the new northern and eastern faces of the berthing faces adjacent to the shoreward arm of Queen's Pier (Work 3)
	A 30 m wide floating linkspan commencing on the eastern face of Work 7 (Work 9)
	A mooring dolphin lying 70 m to the east of the eastern face of Work 1, with bearing piles, mooring structures and reinforced concrete heads, connected to Work 1 by a steel access walkway (Work 4)
	Two lines of mooring dolphins up to 250 m long and up to 70 m apart, with bearing piles, mooring structures and reinforced concrete heads, connected by steel walkways and the permanent mooring at the dolphins of a floating dry-dock (Work 10)
	A reinforced concrete or steel pontoon providing access to and from Work 10 (Work 11)

Table NTS.2: Projects removed from the original cumulative effects assessment

NTS.14 The cumulative effects assessments undertaken in the original EIA have been reviewed and updated using the revised list of projects. The results of these updated assessments are summarised in the topic sections of this NTS.

Air quality

NTS.15 The council's letter requested further information on the testing and usage of the standby emergency diesel generator, additional information to demonstrate that the air quality modelling used is suitable and that appropriate inputs have been used, and further information on the impact of particulate matter ($PM_{2.5}$) from the proposed development. This information is provided in the ES addendum. The air quality modelling and assessment have also been updated to reflect the updated list of cumulative projects discussed above.

NTS.16 The original assessment concluded that the proposed ERF will not lead to any significant air quality effects. Dispersion modelling was carried out to assess the operation of the diesel generator for testing and maintenance purposes and in the event of a loss of grid connection to maintain the operation of the abatement and control systems to enable a safe shutdown of the ERF. No significant effects were predicted on either human health or ecological receptors, either as a result of the diesel generator operating alone or in combination with the ERF. The conclusions of the original assessment that there will be no significant effects on human health or ecology as a result of emissions from the proposed development therefore remain valid and are unchanged by the additional assessment to include the diesel generator.

NTS.17 The technical information provided on the diesel generator in the ES addendum includes an 8 m high stack. This was not previously shown on the elevations drawings in figures NTS.4a and NTS.4b of the original NTS, so revised versions of these figures have been prepared. These are included at the end of this report and replace the versions in the September 2020 NTS.

NTS.18 A detailed review of the air quality modelling has been carried out by Fichtner Consulting Engineers Limited, who undertook the original modelling, which confirmed that the modelling software used was appropriate and the location conditions are well within the modelling capabilities. This material was provided to the Environment Agency as part of the ongoing environmental permitting application. Sensitivity tests showed that the input parameters used for the stability of the atmosphere, surface roughness, terrain and weather data did not significantly affect the results. The review also showed that the levels of uncertainty in the modelling did not affect the conclusions and the overall impact assessment is robust. The additional information provided therefore does not affect the conclusions of the original ES.

NTS.19 The Environment Act 2021 introduced a legally binding duty on the government to reduce the amount of particulate matter ($PM_{2.5}$) in ambient air. The current level set in UK legislation is 20 $\mu g/m^3$, but recent World Health Organization guidance sets out an updated recommended guideline value of 5 $\mu g/m^3$. The air quality assessment was reviewed to determine whether a change in the guideline level would affect the results. This included considering monitoring data from a comparable operational ERF. The review found that the environmental impacts of $PM_{2.5}$ emissions from the proposed ERF will remain negligible and not significant even if the guideline level is reduced to 5 $\mu g/m^3$ because they would still be less than 0.5% of this level. Therefore, even if the government introduced this revised target level, there would be no change to the original ES conclusions that there will be no significant air quality effects.

NTS.20 The air quality modelling and assessments of effects on designated nature conservation sites and human health receptors were updated to take account of the revised list of cumulative projects. The updated assessments showed that there will be no significant effects on designated nature conservation sites or residential receptors, including those in Castletown and Boot Hill.

NTS.21 The conclusions of the original ES that the proposed development will not lead to any significant residual air quality effects therefore remain valid and are unchanged by the submitted further information and revised modelling and assessment.

Carbon balance and greenhouse gas emissions

NTS.22 Dorset Council's letter did not request any additional information and clarification in relation to carbon balance and greenhouse gas emissions. The removal of the 1997 and 2010 Harbour Revision Order works from the cumulative effects assessment and the addition of the heliport building do not change the original conclusion that there is no potential for significant cumulative carbon balance and greenhouse gas emissions effects. As a result, the original ES conclusion that the proposed development will have a significant beneficial effect by reducing carbon emissions compared to the baseline remains valid and unchanged.

Community, health and economic effects

NTS.23 Dorset Council's letter requested additional assessment of the potential effects on human health from emissions of dioxins and metals from the proposed ERF, using a methodology recommended by the UK Health and Security Agency (formerly Public Health England). The assessment found that the levels of dioxins and metals emitted by the proposed ERF will be well below the levels that could cause potential health effects. As a result, no significant effects were predicted on human health from either dioxins or metals. The conclusion of the original assessment that there will be no significant adverse health effects on sensitive receptors as a result of the proposed development remains valid and unchanged.

NTS.24 The original economic assessment identified that the construction and operation of other developments in the area will provide employment and business opportunities. Overall, a slight to moderate, significant beneficial cumulative effect was predicted. The removal of the 1997 and 2010 Harbour Revision Order works from the assessment, particularly the employment development on several areas of land at the Port, is considered to reduce the overall beneficial cumulative effect to slight and not significant. The addition of the heliport building to the assessment does not alter the revised findings.

NTS.25 The original assessment concluded that there is no potential for significant cumulative community and health effects with other developments in the area. The removal of the 1997 and 2010 Harbour Revision Order works from the assessment and the addition of the heliport building do not change this conclusion.

NTS.26 The additional human health assessment has not identified any significant effects and the conclusions of the original ES that there will be no significant

health effects remain valid and unchanged. The removal of the 1997 and 2010 Harbour Revision Order works from the cumulative effects assessment has reduced the beneficial cumulative employment effect from slight to moderate to slight and not significant. No other changes are required to the findings of the original assessment.

Cultural heritage

NTS.27 Dorset Council's letter requested further information on the permissive footpath described in the heritage mitigation strategy to address comments made by Natural England. Clarifications were provided to confirm that the route will be a footpath, not a road. Works to create the permissive footpath will include trimming back invasive vegetation to the fence line and refreshment / maintenance of the existing surface. The path will be of the minimum width necessary to enable access for maintenance vehicles and ongoing management of the site of special scientific interest.

NTS.28 For completeness, the potential for the 8 m high diesel generator stack to lead to any significant cultural heritage effects was reviewed. As shown on the revised figures NTS.4a and NTS.4b at the end of this report, while the generator and its stack will be visible in views from the north and north east, it will be seen against the proposed main ERF building. The height and scale of the generator and its stack will be negligible in relation to the main ERF building and will not lead to any new or different effects on the settings of heritage assets in the area beyond those originally assessed.

NTS.29 The original cultural heritage assessment concluded that there would be no potential for cumulative effects with any of the works in the 2010 Harbour Revision Order, or the High Speed Ferries operation. The removal of these works from the assessment does not change this conclusion.

NTS.30 The original assessment concluded that there would be a slight to moderate, significant adverse cumulative effect on the setting of the batteries at East Weare and The Verne Citadel with the development of several areas along East Weare. Most of these developments have now been removed from the revised cumulative effects assessment, although Project Osprey is still included. As some development will still proceed in the area, the conclusion of a slight to moderate, significant adverse cumulative effect remains valid.

NTS.31 The original assessment identified a slight to moderate, significant adverse cumulative effect on Portland Castle as a result of one of the schemes that forms part of the ongoing development of the RNAS helicopter base at Osprey Quay. The heliport at Coode Way is also part of this area. The submitted heritage assessment for the heliport building application predicts no effects on the castle or its setting and there is no potential for significant cumulative effects with this development.

NTS.32 There is no change to the assessment findings as a result of the additional information on the permissive path, the diesel generator stack or the revised list of cumulative projects. As a result, the conclusions of the original ES chapter (as amended by the August 2021 ES addendum) remain valid and unchanged.

Ground conditions and water quality

NTS.33 Dorset Council's letter did not request any additional information and clarification in relation to effects on ground conditions and water quality. The removal of the 1997 and 2010 Harbour Revision Order works from the cumulative effects assessment and the addition of the heliport building do not change the original conclusion that there is no potential for significant cumulative effects with other developments in the area. As a result, the original ES conclusion that the proposed development will not lead to any significant ground conditions and water quality effects remains valid and unchanged.

Landscape, seascape and visual effects

NTS.34 Dorset Council's letter did not request any additional information and clarification in relation to landscape, seascape and visual effects. However, for completeness, the potential for the 8 m high diesel generator stack to lead to any significant effects was reviewed. As shown on the revised figures NTS.4a and NTS.4b at the end of this report, while the generator and its stack will be visible in views from the north and north east, it will be seen against the proposed main ERF building. The height and scale of the generator and its stack will be negligible in relation to the main ERF building and will not lead to any new or different landscape, seascape and visual effects beyond those originally assessed.

NTS.35 The original landscape, seascape and visual assessment concluded that there would not be any significant cumulative effects on landscape character or visual amenity with the 1997 and 2010 Harbour Revision Order developments. The removal of these works from the cumulative effects assessment therefore does not change its conclusions.

NTS.36 The proposed new building at the heliport for servicing and maintenance of helicopters will be next to several industrial premises and will be of a similar scale and character to existing buildings within Osprey Quay. These buildings lie within a key employment area where views of industrial and commercial buildings are expected. No significant cumulative landscape, seascape and visual effects are therefore predicted with the heliport building.

NTS.37 There is no change to the assessment findings as a result of the diesel generator stack or the revised list of cumulative projects. As a result, the conclusions of the original ES chapter remain valid and unchanged.

Natural heritage

NTS.38 The council's letter requested a marine conservation zone (MCZ) assessment, which is provided in the ES addendum. An update to the shadow appropriate assessment report has also been prepared and submitted separately, as this did not form part of the original ES.

NTS.39 The findings of the updated air quality modelling were reviewed and the assessment concluded that there will be no significant effects on off-site designated nature conservation areas as a result of emissions from the proposed development and its associated traffic, either alone or combined

with other developments in the area. The conclusions of the original ES therefore remain valid.

NTS.40 A MCZ screening assessment was carried out in accordance with guidance produced by the Marine Management Organisation and Natural England. It considered the potential for significant effects on the four MCZs within 20 km of the site as a result of discharges to the marine environment leading to smothering and contamination; ocean acidification; increased nutrient levels; deposition of mercury and dioxins; and visual and underwater noise disturbance. The assessment concluded that effects on the four MCZs from all of these potential sources will be negligible and not significant. The original ES conclusion that there will be no significant adverse effects on the marine environment, including designated nature conservation sites, therefore remains valid and unchanged.

NTS.41 The original natural heritage assessment concluded that there would be no significant cumulative effects with other developments in the area. The updated air quality modelling included traffic flows from the revised list of cumulative projects and the removal of the 1997 and 2010 Harbour Revision Order development from the assessment will not change this conclusion. The heliport building application includes measures to ensure it will not have any significant adverse natural heritage effects, including a financial contribution to mitigate the potential for increased recreational use of nearby designated nature conservation sites. As a result, it is considered that there is no potential for significant cumulative natural heritage effects with the proposed development.

NTS.42 The conclusions of the original ES that the proposed ERF will not lead to any significant residual natural heritage effects therefore remain valid and are unchanged by the submitted further information and assessment.

Traffic and transport

NTS.43 The council's letter did not request any additional information and clarification in relation to traffic and transport effects. However, the original traffic modelling included flows associated with the 1997 and 2010 Harbour Revision Order developments. It was therefore necessary to re-run the modelling without these flows and update the assessment accordingly. The limited number of traffic movements associated with the heliport building are accounted for within the background growth.

NTS.44 The construction traffic modelling showed that increases on all road links except Castletown will be less than 1%. Increases in traffic flows of less than 10% are generally considered to be insignificant in environmental terms, as daily background traffic flows can vary by this amount. The increase in outbound traffic on Castletown was predicted to be just under 18%. This is a change of negligible magnitude that will lead to negligible effects on pedestrian severance, driver and pedestrian delay, pedestrian amenity, and accidents and safety on Castletown. No significant effects were therefore predicted during construction.

NTS.45 The revised traffic modelling showed that both total vehicle flows and HGV numbers will increase by less than 5% as a result of the proposed

development on all road links except Castletown, even in the worst-case scenario of 100% of deliveries to the site and removal of ash being made by road. This increase is well below the 10% threshold discussed above. No significant effects are therefore predicted on pedestrian severance, pedestrian delay and amenity, driver delay or accidents and safety on these road links as a result of the proposed development.

NTS.46 Increases in traffic on Castletown were predicted to exceed the 10% threshold, however, so further assessment was carried out. This found that, while the percentage changes in vehicle flows were larger, the scale of the change was mainly due to the existing relatively low levels of traffic on Castletown. For example, outbound HGV movements in the AM peaks in 2023 and 2033 are only predicted to increase from four HGVs to seven, which equates to one additional HGV every 20 minutes.

NTS.47 Similarly, the two-way worst-case 24-hour increase of 80 HGVs on Castletown (40 trips each way) equates to one additional HGV every 18 minutes over the 24-hour period. This is a normal level of interaction with traffic for pedestrians and is significantly less than that already experienced on Portland Beach Road, for example. It should also be noted that pedestrian crossing facilities are available in the form of a zebra crossing at the eastern end of Castletown and dropped kerbs and an island at the western end, which will assist pedestrians in crossing the road. An average increase in HGV movements of one every 18 to 20 minutes is therefore considered to be a negligible change that will not lead to any significant effects on pedestrian severance, pedestrian delay and amenity, driver delay or accidents and safety on Castletown.

NTS.48 As for the original assessment, traffic flows associated with the other developments in the area were included in the revised traffic modelling. Therefore, the potential cumulative effects are included in the modelling results and no significant effects are predicted.

NTS.49 The conclusions of the original ES that the proposed development will not lead to any significant residual traffic and transport effects therefore remain valid and are unchanged by the updated modelling and assessment.

Waste

NTS.50 Dorset Council's letter did not request any additional information and clarification in relation to waste effects. The removal of the 1997 and 2010 Harbour Revision Order works from the cumulative effects assessment and the addition of the heliport building do not change the conclusion that there is no potential for significant cumulative waste effects. As a result, the original ES waste chapter remains unchanged.

World heritage site

NTS.51 Dorset Council's letter did not request any additional information and clarification in relation to effects on the Dorset and East Devon Coast World Heritage Site (WHS). However, for completeness, the potential for the 8 m high diesel generator stack to lead to any significant effects was reviewed. As shown on the revised figures NTS.4a and NTS.4b at the end of this report, while the generator and its stack will be visible in views from the north and

north east, it will be seen against the proposed main ERF building. The height and scale of the generator and its stack will be negligible in relation to the main ERF building and will not lead to any new or different effects on the WHS beyond those originally assessed.

NTS.52 The original WHS assessment concluded that overall, taking into account changes to landscape, heritage and views, there would be no significant cumulative effects on the WHS in combination with other developments in the area. The removal of the 1997 and 2010 Harbour Revision Order works from the assessment does not change this conclusion. The addition of the heliport building at Coode Way to the assessment has not changed the conclusions of the assessments of effects on cultural heritage or landscape, seascape and visual effects. The conclusions of the original WHS assessment therefore also remain unchanged.

NTS.53 There is no change to the assessment findings as a result of the diesel generator stack or the revised list of cumulative projects. As a result, the conclusions of the original ES chapter remain valid and unchanged.

Other issues outside the scope of the EIA

NTS.54 Dorset Council's letter requested additional information and clarification on the shadow appropriate assessment and the Statement of Common Ground, as referenced in Natural England's letter dated 1 December 2021. As these elements are outside the scope of the EIA, the additional information is not considered to be 'further environmental information' under Regulation 25 of the EIA Regulations and is not provided within this report. Instead, stand alone documents have been produced to provide this information.

Conclusion

NTS.55 The further information provided in this second ES addendum has not resulted in any changes to the significant residual effects of the proposed ERF alone that were assessed in the original ES. The only change to the assessments of cumulative effects relates to economic effects. The slight to moderate, significant beneficial cumulative effect identified in the original ES as a result of increased employment and business opportunities with developments in the surrounding area has reduced to slight and not significant as a result of the removal of the 1997 and 2010 Harbour Revision Order development from the assessment.

NTS.56 No other new or different significant residual effects or cumulative effects have been identified for any of the other ES topics as a result of the further environmental information. Therefore, with the exception of the above change to the findings of the economic cumulative effects assessment, the conclusions of the ES remain valid and unchanged.

1 Introduction

1.1 In September 2020, Powerfuel Portland Limited submitted a full planning application to Dorset Council for the construction of an energy recovery facility (ERF) with ancillary buildings and works including administrative facilities, gatehouse and weighbridge, parking and circulation areas, cable routes to ship berths and existing off-site electrical substation, with site access through Portland Port from Castletown (application reference: WP/20/00692/DCC) on land within Portland Port.

1.2 The application was accompanied by an environmental statement (ES) prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended; hereafter the EIA Regulations), which provides an assessment of the likely significant effects associated with its construction and operation.

1.3 An addendum to the ES was submitted in August 2021 following a formal request for additional information and clarification from Dorset Council, some of which constituted 'further environmental information' and was requested in accordance with Regulation 25 of the EIA Regulations and Section 62(3) of the Town and Country Planning Act 1990.

1.4 Natural England has since provided its response to the consultation on the planning application (dated 1 December 2021), which identifies several areas where further information is required.

1.5 Powerfuel Portland Limited is also currently progressing an application with the Environment Agency to obtain an Environmental Permit for the proposed ERF. As part of that separate regulatory process, Powerfuel Portland Limited has been undertaking additional technical work and has now prepared further information in relation to matters raised during the permitting process.

1.6 This information is also relevant to Dorset Council, acting in its role as the Waste Planning Authority, and specifically in the context of matters raised by Public Health England (now known as the UK Health Security Agency and Office for Health Improvement and Disparities) in its consultation response letter dated 2 November 2021.

1.7 As a result of the above, Dorset Council has again formally requested additional information and clarification, in a letter dated 26 January 2022. As previously, the council confirmed that it considers some of the information requested constitutes 'further environmental information', which is requested in accordance with the relevant regulations.

1.8 The full letter is provided in appendix 1.1 and requests additional information and clarification on the following issues:

- Health
- $PM_{2.5}$
- In-combination / cumulative projects
- Marine conservation zone
- Clarification on permissive footpath and access / road reinstatement
- Statement of common ground

1.9 This document reviews the council's letter and provides the information that is considered to constitute 'further environmental information' under Regulation 25 of the EIA Regulations. It forms a second addendum to the original ES and follows the ES's topic structure. It is submitted in accordance with the requirements of Regulation 25 of the EIA Regulations and should be read alongside the September 2020 ES and the August 2021 ES addendum. A non-technical summary is provided at the front of this document.

1.10 The review of the council's letter also identifies where matters raised are considered to be outside the scope of the EIA, which are not formally requested under Regulation 25 and do not comprise 'further environmental information'. Responses to these points are provided in stand alone documents within the submission.

2 Projects included within the cumulative effects assessment

Introduction

2.1 The list of projects included in the original cumulative effects assessment in the September 2020 ES was agreed with Dorset Council through the EIA scoping process and included a range of development within the 1997 and 2010 Portland Harbour Revision Orders. The same projects were included within the 'in-combination' assessment in the stand alone shadow appropriate assessment.

2.2 However, Natural England's consultation response (dated 1 December 2021) queried the status of some of these projects and how the regulation allowing for review of projects under the Conservation of Habitats and Species Regulations 2017 (as amended; hereafter the Habitats Regulations) applies to development relating to the Harbour Revision Orders. Dorset Council's letter therefore requested the following further information:

- Update as appropriate the list of projects in the environmental impact assessment, which have been assessed as part of 'cumulative' / 'in-combination' impacts of the project to address the comments made by Natural England (point 5 in the council's letter)

2.3 Powerfuel Portland Limited has undertaken a review of these issues, which has concluded that the list of projects included in the cumulative and in-combination assessments should be revised. Certain projects were included which properly should not have been.

2.4 Regulation 63(1) of the Habitats Regulations states that:

> *"A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which-*
>
> *(a) Is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans and projects), and*
>
> *(b) Is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives."*

2.5 The implementation of operational development within the Harbour Revision Orders would require either planning permission or reliance on permitted development rights. Where the implementation of development requires a *"consent, permission or other authorisation"* under Regulation 63, then it will require screening for appropriate assessment by the competent authority. As well as consents, permissions and authorisations, Regulation 63 also applies to competent authorities (such as harbour authorities) before deciding to undertake projects themselves, irrespective of whether they require consent from any other body.

2.6 This means that future developments by or at Portland Port that have not yet been undertaken will need to be screened to determine whether they must be subject to an appropriate assessment, including an in-combination assessment, and will not be able to go ahead unless, with mitigation, they do not have an adverse effect on the integrity of the designated sites in combination with other projects. These projects would, when they fall to be considered prior to being undertaken, include the proposed ERF, either as part of the baseline (if fully completed and in operation) or otherwise as a fully consented in-combination project.

2.7 As a result, projects at the Port that have not yet been undertaken should not result in the proposed ERF (through an in-combination approach) being regarded as having a possible adverse effect on the integrity of the designated sites. The future Port projects would not be able to proceed if that was the effect.

2.8 In addition, given the passage of time since the original assessments were undertaken, the need to include new consented developments within the assessments was reviewed. It is understood that a resolution to grant planning permission was made in November 2021 for a building for the servicing and maintenance of helicopters at the heliport on Coode Way in Portland.

2.9 Given this, the list of projects to be considered in the cumulative effects and in-combination assessments has been reviewed to exclude Port projects that have not yet been undertaken and add in the heliport building. Table 2.1 sets out the revised list of projects that has been used in the updated cumulative effects and in-combination assessments (the latter is provided in the stand alone updated shadow appropriate assessment). For clarity, table 2.2 sets out the projects that have been removed from the original assessment. A revised version of figure 3.2, which shows the locations of the cumulative projects, has been prepared. This is included at the end of this report and replaces the version in the original ES.

Development	Details
Ocean Views, Hardy Complex, Castle Road, Portland (phase 2)	Redevelopment of former naval accommodation block into 157 apartments, together with the development of 191 new build homes, with associated car parking (application reference: 02/00703/FUL, as amended)
Royal Manor Arts College, Weston Road, Portland	Demolition of existing buildings and erection of 98 dwellings (application reference: WP/19/00919/OUT)
Verne Common Road and Ventnor Road, Portland	Development of vacant land by the demolition of a garage and erection of 25 dwellings (application reference: WP/18/00662/FUL)
Southwell Primary School, Sweethill Lane, Portland	Demolition of existing buildings and construction of up to 58 dwellings (application reference: WP/17/00866/OUT)
Ferrybridge Inn, Portland Road, Weymouth	Demolition of existing public house and construction of up to 22 residential units (application reference: WP/14/00929/OUT)
Disused Quarry Works Stockyard, Bottom Coombe, Park Road, Portland	Development of approximately 62 dwellings (application reference: WP/14/00591/OUT)
Redundant buildings at Bumpers Lane, Portland	Demolition of existing redundant industrial buildings and erection of approximately 64 dwellings (application reference: WP/14/00330/OUT)
Plot X, Mulberry Avenue, Portland	Erection of two blocks of two storey business units comprising three B1 units and six B8 units (total floorspace 766 m^2) with associated parking and landscaping (application reference: WP/18/00940/FUL)
Plot M1B, Hamm Beach Road, Portland	Erection of three industrial and commercial buildings (B1, B2 and B8, total floorspace 2,879 m^2) and associated external works (application reference: WP/17/00631/FUL)
The Heliport, Coode Way, Portland	Erection of a building for servicing and maintenance of helicopters and additional facilities incidental to heliport use (application reference: WP/20/00467/OUT)
Project Osprey, Portland Port	Construction of two animal feed storage and distribution warehouses, each 140 m x 45 m x 20 m, and an office building 16 m x 4 m x 5.15 m, to handle 250,000-300,000 tonnes per year (council reference: WP/19/00514/SCRE), which is currently under construction
Project Inner Breakwater and Camber Area Alterations, Portland Port	Development of operational land for the purposes of shipping and in connection with the embarking, disembarking, loading, discharging or transport of passengers, livestock or goods, including a new berth apron in the Crane Berth Apron Operational Area and a new yard pavement at the Camber Operational Yard to enable the berthing and handling of ships up to 120 m long, their cargoes and passengers (council reference: WP/15/00328/PD). The works to the listed inner breakwater and adjacent structures to enable the use of the crane berth have been completed under application 14/01071/LBC and are part of the baseline

Table 2.1: Projects included in the revised cumulative effects assessment

Development	Details
Remaining development under the 1997 Portland Harbour Revision Order	Open storage of waste products, including waste wood and metal, on the Parade Ground area of the Rifle Range
	High Speed Ferries: a cross-Channel passenger / car high speed ferry operating two to three daily sailings (round trips) over the 26-week summer season (April to October) and weekend sailings (Friday, Saturday and Sunday) over 20 weeks during the winter season
	B1 / B2 / B8 development on several areas of land at the Port that have yet to be developed
	Landside aquaculture: construction of a warehouse building for aquaculture, producing 200-300 tonnes of fish, on a site measuring 135 m x 37 m (application references: WP/14/01033 and WP/16/00150/RES) – these permissions have lapsed
Development under the 2010 Portland Harbour Revision Order	New berthing faces to the north and east of New Quay and Coaling Pier Island (Works 1 and 5) and new berthing faces to the retaining structures to the south and west of Queen's Pier (Work 7) by the construction of concrete blockwork quay walls and / or piled and suspended deck sections and / or rock armoured rubble mound retaining embankments
	Reclamation of as much of the foreshore and seabed as is required for the above works (Works 2, 6 and 8)
	Two 30 m wide floating linkspans commencing on the new northern and eastern faces of the berthing faces adjacent to the shoreward arm of Queen's Pier (Work 3)
	A 30 m wide floating linkspan commencing on the eastern face of Work 7 (Work 9)
	A mooring dolphin lying 70 m to the east of the eastern face of Work 1, with bearing piles, mooring structures and reinforced concrete heads, connected to Work 1 by a steel access walkway (Work 4)
	Two lines of mooring dolphins up to 250 m long and up to 70 m apart, with bearing piles, mooring structures and reinforced concrete heads, connected by steel walkways and the permanent mooring at the dolphins of a floating dry-dock (Work 10)
	A reinforced concrete or steel pontoon providing access to and from Work 10 (Work 11)

Table 2.2: Projects removed from the original cumulative effects assessment

2.10 The cumulative effects assessments undertaken in the original EIA have been reviewed and updated using the revised list of projects and the results of these updated assessments are provided in the topic sections of this second ES addendum.

3 Air quality

Introduction

3.1 Dorset Council's letter requested the following additional information and clarification in relation to effects on air quality:

- Further information in respect of the quantity, testing regime and usage of the backup diesel generators. This should address the comment made by UK Health and Security Agency (Public Health England at the time of writing) (point 1 in the council's letter)
- Additional detail on the appropriateness and suitability of the air quality model for all receptors, accurately reflecting local topography to provide reliable estimates of reasonable worst-case scenarios. This should address the comment made by UK Health and Security Agency (point 2 in the council's letter)
- In light of the passing into law of the Environment Act 2021 and the requirement for the UK government to set an air quality target for $PM_{2.5}$, which is lower than that currently in UK legislation. Please provide additional information on the impact of $PM_{2.5}$s from the proposed development (point 4 in the council's letter)

3.2 Fichtner Consulting Engineers Limited, who undertook the original air quality modelling for the EIA, has produced a technical note to provide the requested technical information on the diesel generator and modelling of its potential emissions (point 1 in the council's letter). The full technical note is contained in appendix 3.1 and its findings are summarised in this section.

3.3 Fichtner Consulting Engineers Limited has produced a supplementary air quality technical report to provide the requested information to demonstrate that the air quality modelling used is suitable and that appropriate inputs are used for all receptors and accurately reflects the local topography to provide reliable estimates of reasonable worst-case scenarios (point 2 in the council's letter). The full technical report is contained in appendix 3.2 and its findings are summarised in this section.

3.4 Fichtner Consulting Engineers Limited has also prepared a technical note to provide a consideration of whether the provisions of Section 2 of the Environment Act (2021) relating to particulate matter ($PM_{2.5}$) affect the findings of the air quality assessment (point 4 in the council's letter). The full technical note is contained in appendix 3.3 and its findings are summarised in this section.

3.5 In addition, Fichtner Consulting Engineers Limited prepared an updated assessment of the cumulative impact of road and process emissions associated with the proposed development and other projects on national site network (NSN) nature conservation sites, following the update to the list of cumulative projects discussed in section 2. The full report is contained in appendix 3.4 and its findings are summarised in this section.

3.6 Fichtner Consulting Engineers Limited has also updated the roads emissions modelling following the update to the list of cumulative projects discussed in section 2. The results of the original roads emissions modelling were reported in technical appendix D3 of the September 2020 ES and an updated version of

this report is now provided as appendix 3.5 to this second ES addendum. The key findings of the update are summarised in this section.

Diesel generator

Introduction

3.7 The additional dispersion modelling included the operation of the diesel generator for testing and maintenance purposes every two weeks for up to 30 minutes, and in an emergency scenario in the event of a loss of grid connection to maintain the operation of the abatement and control systems to enable a safe shutdown of the ERF. Testing and maintenance is limited to 30 minutes and an emergency shutdown event is assumed to require the generator to operate for no more than four hours for any one event. Except for testing and maintenance, the generator would only be used if the supply from the ERF is interrupted. It will not be used during start-up or non-emergency shutdown, or to maintain the temperature of the flue gases.

3.8 The temperature of the flue gases is maintained by the ERF. However, if the temperature does drop below the required level, the standby burner would be operated. The emissions would go up through the main stack and would need to comply with the emission limits set in the environmental permit. Therefore, this scenario is already covered in the original assessment.

3.9 When modelling the impact of testing, it was assumed that:

- The generator operates at full load for the entire 30 minutes of testing
- The emissions of oxides of nitrogen (NO_x) during the first 10 minutes of testing as the generator warms up are at the unabated level, while the remaining 20 minutes are at the abated level
- For the remaining 30 minutes of the one-hour modelling period the engine is off (no emissions)
- Testing could start at any time between 08:00 and 17:00
- Testing could occur during worst-case weather conditions

3.10 When modelling the impact of the emergency operation, it was assumed that:

- The generator operates at full load for the first hour, followed by 70% loading for the second hour and 50% loading for the remaining two hours of emergency operation
- The emissions of NO_x during the first 10 minutes of operation are at the unabated level, while for the remaining time emissions are at the abated level
- Emergency operation could occur over any four-hour rolling period in the year

3.11 Full details of the modelling inputs and assumptions are set out in appendix 3.1. The modelling considered the potential impacts on both human health and ecology. The assessment level for the protection of human health used in the analysis was the one-hour air quality assessment level (AQAL) for nitrogen dioxide (NO_2) of 200 µg/m^3, which can be exceeded 18 times per year. The

assessment level for the protection of ecosystems was the maximum 24-hour critical level for NO_x of 75 µg/m^3, which is applicable at ecological sites.

3.12 The Environment Agency's guidance (2019) *Specified generators: dispersion modelling assessment* is designed to assess the situation where a generator only operates occasionally but in every year. It requires statistical analysis to be undertaken if short term predictions show that there are a number of hours for which the impact exceeds the environmental standard at a sensitive receptor over the modelled operating envelope. The guidance states that where the probability exceeds:

- 1% or less: exceedances are highly unlikely
- Less than 5%: exceedances are unlikely as long as the generator plant operational lifetime is no more than 20 years
- More than or equal to 5%: there is potential for exceedances and the regulator will consider if this is acceptable on a case-by-case basis

3.13 The technical information provided on the diesel generator in appendix 3.1 includes an 8 m high stack. This was not previously shown on the elevations drawings in ES figures 2.5a and 2.5b, so revised versions of these figures have been prepared. These are included at the end of this report and replace the versions in the original ES.

3.14 For completeness, the potential for the 8 m high diesel generator stack to lead to any significant cultural heritage, landscape, seascape and visual, or world heritage site effects has also been reviewed. The findings of this review are discussed in sections 6, 8 and 12 of this report.

Impacts of testing the generator

3.15 The modelling of the impacts of testing the generator showed that the maximum predicted one-hour NO_2 process contribution was predicted to exceed the human health AQAL, as it ranged between 226% of the AQAL using 2014 weather data and 246% using 2018 data. However, this conservatively assumed that testing occurs during the worst-case weather conditions for dispersion in the hours of 08:00 and 18:00 (i.e. 3,650 hours in each year) and 35% of the NO_x would be converted to NO_2. Testing would occur on a two-week basis and so would only occur around 26 times each year. The Environment Agency's AQMAU has published a report on the assessment of the impact of short term NO_x from diesel generators, which states that this is likely to be an over-estimate and close to the stack, where the main impacts occur, the conversion is more likely to be 15%.

3.16 A statistical analysis was therefore carried out to determine the likelihood of the testing period coinciding with the worst-case weather years. This showed that the probability of the process contribution or the predicted environmental concentration (PEC) exceeding the AQAL is less than 0.1%, indicating that short term exceedances are unlikely. Full details of the analysis are set out in appendix 3.1.

3.17 The analysis also considered the impact on ecological sites. The modelling of the impacts of testing the generator showed that the maximum process contribution would range between 41.7% and 51.2% of the critical level at the

Isle of Portland Site of Special Scientific Interest (SSSI) and between 33.7% and 43.5% of the critical level at the Isle of Portland to Studland Cliffs Special Area of Conservation (SAC). The modelled PEC ranged between 72.4% and 96.5% at the SSSI and between 64.4% and 88.9% at the SAC. Neither the maximum modelled process contribution nor the PEC exceed the critical level, so no significant effects are predicted.

Impacts of emergency operation of the generator

3.18 The modelling of the human health impacts of emergency generator operation showed that the maximum predicted one-hour NO_2 process contribution was predicted to exceed the AQAL, as it ranged between 330% of the AQAL using 2014 weather data and 361% of the AQAL using 2018 data. However, as the air quality standard allows this level to be exceeded 18 times per year, emergency operation could only lead to an exceedance if there were more than four events in a year. This is extremely unlikely, as emergency operation is only required if there is a loss of grid connection and there have only been three such occurrences at the port in the past six years.

3.19 The analysis of the likelihood of the AQAL being exceeded discussed in paragraph 3.16 assumed that an emergency event would occur each year, that the AQAL would be exceeded for each of these and calculated the probability of more than 18 exceedances of the AQAL due to testing. This was calculated to be less than 0.1%, indicating that an exceedance of the AQAL is highly unlikely even when combined with an emergency event.

3.20 The modelling of the ecological impacts of emergency generator operation showed that the maximum predicted NO_x process contribution was predicted to exceed the critical level at the SSSI because it ranged between 122.6% of the critical level using 2016 weather data and 151.9% of the critical level using 2014 data. It was also predicted to exceed the critical level at the SAC, ranging between 83.4% of the critical level using 2017 weather data and 104.1% using 2018 data.

3.21 The maximum PEC was also predicted to exceed the critical level at both the SSSI and SAC. It ranged from between 153.3% of the critical level using 2016 weather data and 197.2% of the critical level using 2014 data at the SSSI, and between 114.1% of the critical level using 2017 weather data and 149.4% of the critical level using 2018 data at the SAC.

3.22 However, this modelling conservatively assumed that the generator is required for emergency use during worst-case weather conditions, so the probability of this actually occurring was analysed. This found that the probability of the PEC exceeding the daily mean critical level in an emergency scenario in average year was 1.41% in the SSSI and 0.21% in the SAC. This means that the generator would need to operate for 70 years for the probability of the PEC exceeding the critical level in the SSSI to reach 100% (100% / 1.41% = 70 years), and for 466 years for the probability of the PEC exceeding the critical level in the SAC to reach 100%. 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.

In-combination impact with the ERF

3.23 The above analysis was based on the operation of the diesel generator in isolation. The modelling showed that the impacts from the generator will occur close to the site. The contribution from the ERF in this area is minimal because its taller stack height means that emissions travel further and avoid significant building downwash effects.

3.24 Testing would occur at the same time as the operation of the ERF. However, it is highly unlikely that a significant contribution from the ERF would coincide with the testing of the generator, or that the conditions that result in the greatest ground level contributions would occur in the same hour because of the significantly different stack heights.

3.25 During an emergency, the generator would be used to shut the ERF down safely. Therefore, while there would be emissions from both the generator and the ERF initially, this would not occur for any significant length of time. In addition, it is unlikely that the area impacted by the emergency operation of the generator would also be impacted by emissions from the ERF during shutdown.

3.26 Given the above, it is not considered that including the contribution from the ERF would significantly change the conclusion of the assessment that the operation of the emergency diesel generator would not be significant.

Conclusion

3.27 No significant effects are predicted on either human health or ecological receptors, either as a result of the diesel generator operating alone or in combination with the ERF. The conclusions of the original ES that there will be no significant effects on human health or ecology as a result of emissions from the proposed development therefore remain valid and are unchanged by the additional assessment.

Air quality modelling

3.28 The original dispersion modelling of process emissions from the proposed ERF was carried out using ADMS (version 5.2) produced by Cambridge Environmental Research Consultants (CERC). The supplementary technical report in appendix 3.2 reviewed the technical and validation documents for the ADMS model in detail and confirmed that the location conditions are well within the modelling capabilities. This is supported by a technical note from CERC confirming that the use of the model is entirely appropriate because it has been designed for these types of locations. This material was provided to the Environment Agency as part of the ongoing environmental permitting application.

3.29 A sensitivity analysis has been undertaken of a range of input parameters to the ADMS model, including the stability of the atmosphere, surface roughness, terrain, and meteorological data. This showed that the choice of input parameters did not have a significant effect on the predicted results, with the distribution of emissions broadly similar in the sensitivity tests. In each case, the conclusions of the dispersion modelling would be the same if different input

parameters were used. The detailed results of the analysis are provided in appendix 3.2.

3.30 The supplementary report also considered whether the use of a different model would affect the results. This considered the difference between the ADMS model and an alternative gaussian plume model, namely AERMOD. While the use of the AERMOD model would give significantly higher impacts on the area of elevated terrain close to the plant, this is not a suitable model to use for this site because it does not correctly account for the terrain and the results are therefore not considered to be accurate or realistic. This was supported by technical input from CERC, who concluded that the ADMS model is suitable for the modelling of emissions from the ERF in this location.

3.31 An estimation of the uncertainty in the modelling was carried out to determine whether this would affect the conclusions set out in the original air quality assessment. This has shown that the overall impacts presented in the original assessment are robust because the inbuilt conservatism is of a similar order to the uncertainty in the modelling.

3.32 The conclusions of the original ES that there will be no significant effects on human health or ecology as a result of emissions from the proposed development therefore remain valid and are unchanged by the additional information provided in the supplementary technical report in appendix 3.2.

Air quality guidelines

3.33 The Environment Act 2021 introduced a legally binding duty on the government to reduce the annual average level of $PM_{2.5}$ in ambient air. While the Act does not stipulate a level, it states that the Secretary of State must set regulations to set a target for annual average levels of $PM_{2.5}$. The current level set in UK legislation is 20 µg/m^3, which remains the appropriate AQAL.

3.34 The recommended guideline value in the World Health Organization's (2005) *WHO air quality guidelines global update 2005* is 10 µg/m^3, which was the recommendation in place during the various committee stages of the Bill. However, an updated recommended guideline value of 5 µg/m^3 was published by the WHO in September 2021. It is therefore possible that the Secretary of State could set targets at either of the WHO recommended levels, or an independently determined target.

3.35 At the point of maximum impact of stack emissions from the proposed ERF, the predicated contribution to ground level concentrations of $PM_{2.5}$ is 0.05 µg/m^3. However, this point of maximum impact occurs at sea. On land, the maximum predicted contribution is 0.03 µg/m^3. It should be noted that these are conservative figures, as they assume that the plant operates at the maximum emission limit for total dust and that all this dust is in the $PM_{2.5}$ fraction. In reality, the plant will operate below the emission limit value and most of the dust emitted will be larger than $PM_{2.5.}$

3.36 Comparing these conservative concentrations to the current AQAL and potential guideline values shows that the maximum impact at sea would be 0.23% of the current AQAL, 0.46% of the WHO 2005 guideline and 0.92% of the WHO 2021

guideline. The maximum impact on land would be 0.16% of the current AQAL, 0.32% of the WHO 2005 guideline and 0.64% of the WHO 2021 guideline.

3.37 The assessment criteria used in the original ES stated that an impact can be described as negligible irrespective of baseline concentrations if the annual mean process contribution is less than 0.5% of the AQAL. If the level of $PM_{2.5}$ in the exhaust gases remains below 3.9 mg/Nm^3 (or 78% of the emission limit value), then the maximum process contribution would remain less than 0.5% of the WHO 2021 guideline value at the point of maximum impact on land and the impact would be negligible irrespective of baseline concentrations.

3.38 Monitoring data from the existing Four Ashes ERF, which uses the same combustion and abatement technologies as are proposed at Portland, provide an indication of $PM_{2.5}$ emissions from a comparable operational facility. The monitoring data, which are provided in full in appendix 3.3, show that the emissions of $PM_{2.5}$ from the plant in a sample year of 2014 were very low, with an average of 0.027 mg/Nm^3 and a maximum of 0.037 mg/Nm^3. On average, the $PM_{2.5}$ fraction was approximately 50% of the total particulate emissions.

3.39 If the emissions of $PM_{2.5}$ from the proposed Portland ERF are the same as the maximum monitored concentration at the Four Ashes ERF (0.037 mg/Nm^3), this would only equate to 0.8% of the proposed emission limit value for the Portland ERF of 5 mg/Nm^3. Alternatively, if the emissions of particulate matter from the proposed Portland ERF are at the emissions limit value and the $PM_{2.5}$ fraction is the same as the average from the Four Ashes ERF, then the $PM_{2.5}$ concentration would be 49% of the emission limit value.

3.40 In either case, the environmental impacts of $PM_{2.5}$ from the proposed ERF would be negligible and not significant because they would be less than 78% of the emission limit value and would therefore remain less than 0.5% of the WHO 2021 guideline value at the point of maximum impact on land. This means that, if the government decided to introduce a target value for $PM_{2.5}$ at the level in the latest WHO guidelines, there would be no change to the original ES conclusions that there will be no significant air quality effects.

Cumulative air quality impacts on NSN nature conservation sites

3.41 The assessment of cumulative air quality impacts on NSN nature conservation sites provided in the August 2021 ES addendum has been updated to reflect the revised list of cumulative projects set out in section 2. The full modelling results are provided in the technical report in appendix 3.4 and summarised here.

3.42 For Chesil and The Fleet SAC, the modelling shows that the impact of the proposed development alone on annual mean NO_x levels is predicted to be less than 1% of the critical level within 3 m of the road. The cumulative impact with other developments is predicted to be slightly greater, at more than 1% of the critical level within approximately 45 m of the road. However, the total concentration of NO_x is not predicted to exceed the critical level. The impacts are predicted to be less than 70% of the critical level by 7 m from the road in both the future baseline and 'with development' scenarios.

3.43 In relation to ammonia (NH_3) at Chesil and The Fleet SAC, the modelling shows that the impact of the proposed development alone is predicted to be less than 1% of the critical level within 1 m of the road. The cumulative impact with other developments is predicted to be slightly greater, at more than 1% of the critical level within approximately 30 m of the road. However, the total concentration of NH_3 is not predicted to exceed the critical level. The impacts are predicted to be less than 70% of the critical level by 4 m from the road for both the future baseline and 'with development' scenarios.

3.44 The impact of the proposed development alone on nitrogen deposition at Chesil and The Fleet SAC is predicted to be less than 1% of the critical load within 55 m of the road. The greatest source of emissions to nitrogen deposition is NH_3 from road traffic emissions. The cumulative impact with other developments is predicted to be greater. The total concentration is predicted to be similar for the future baseline and 'with development' scenarios. This demonstrates that the majority of the increase in deposition is due to the cumulative developments.

3.45 For the Isle of Portland to Studland Cliffs SAC, the modelling shows that the impact of the proposed development alone on annual mean NO_x levels is predicted to be less than 1% of the critical level within 20 m of the road. Again, the cumulative impact with other developments is predicted to be slightly greater, at more than 1% of the critical level within 15 m of the road. The total concentration is predicted to exceed the critical level. This is due to the high background concentration, which is 113% of the critical level and is attributed to the existing port operations. This is discussed in more detail in the shadow appropriate assessment update report.

3.46 In relation to NH_3 at the Isle of Portland to Studland Cliffs SAC, the modelling shows that the impact of the proposed development alone is predicted to be more than 1% of the critical level for lichen sensitive communities along the transect from the road, but less than 1% of the critical level for non-lichen sensitive communities at a distance greater than 6 m from the road. The cumulative impact with other developments is again predicted to be slightly greater, at more than 2% of the critical level for lichen sensitive communities within 25 m of the road and more than 1% of the critical level for non-lichen sensitive communities within 7 m of the road. However, the total concentration is predicted to be below the critical level for lichen sensitive communities for both the future baseline and 'with development' scenarios.

3.47 The impact of the proposed development alone on nitrogen deposition at the Isle of Portland to Studland Cliffs SAC is predicted to be less than 1% of the critical load within 4 m of the road. The cumulative impact with other projects is predicted to be slightly greater. The total concentration is predicted to be very similar for the future baseline and 'with development' scenarios.

3.48 Further discussion of the above impacts is provided in section 9 of this report on natural heritage and the stand alone shadow appropriate assessment update report.

Roads emissions modelling

3.49 The roads emissions modelling provided in technical appendix D3 of the September 2020 ES has been updated to reflect the revised list of cumulative

projects set out in section 2. The full updated roads emissions modelling report is provided in appendix 3.5 and the findings are summarised here.

Impacts on air quality from traffic on the roads in Castletown leading to the site

3.50 The assessment of impacts on air quality from traffic on the roads in Castletown leading to the site provided in the August 2021 ES addendum has also been updated to reflect the revised list of cumulative projects set out in section 2. The tables below replace tables 3.3 and 3.4 of the August 2021 ES addendum and set out the updated combined impacts of traffic and process emissions associated with the proposed development.

Receptor	ERF (µg/m^3)	Future baseline roads (µg/m^3)	With development roads (µg/m^3)	Impact of proposed development (µg/m^3)	As % of AQAL	Magnitude of change descriptor
R1	0.18	12.78	13.06	0.46	1.1%	Negligible
R2	0.18	12.80	13.09	0.47	1.2%	Negligible
R3	0.18	12.84	13.12	0.46	1.1%	Negligible
R4	0.18	12.87	13.12	0.43	1.1%	Negligible
R5	0.18	12.90	13.14	0.42	1.0%	Negligible
R6	0.18	12.95	13.18	0.41	1.0%	Negligible
R7	0.17	13.02	13.26	0.41	1.0%	Negligible
R8	0.17	13.11	13.34	0.40	1.0%	Negligible
R9	0.17	13.22	13.44	0.39	1.0%	Negligible
R10	0.17	14.07	14.34	0.44	1.1%	Negligible
R11	0.17	16.72	17.06	0.51	1.3%	Negligible
R12	0.17	16.41	16.57	0.33	0.8%	Negligible
R13	0.17	14.38	14.54	0.33	0.8%	Negligible
R14	0.16	13.61	13.75	0.30	0.8%	Negligible
R15	0.16	13.21	13.33	0.28	0.7%	Negligible
R16	0.15	13.10	13.21	0.26	0.6%	Negligible
R17	0.13	12.86	12.90	0.17	0.4%	Negligible
R18	0.12	13.31	13.46	0.27	0.7%	Negligible

Replacement table 3.3: NO_2 impact at receptors in Castletown in 2023 (worst-case roads modelling scenario)
Notes:
Assumes no change in fleet composition – i.e. 2018 emission factors for opening year of 2023.
Assumes background concentration does not reduce from mapped 2018 background concentration.

Receptor	ERF (µg/m^3)	Future baseline roads (µg/m^3)	With development roads (µg/m^3)	Impact of proposed development (µg/m^3)	As % of AQAL	Magnitude of change descriptor
R1	0.18	12.49	12.60	0.29	0.7%	Negligible
R2	0.18	12.50	12.61	0.29	0.7%	Negligible
R3	0.18	12.52	12.63	0.29	0.7%	Negligible
R4	0.18	12.54	12.64	0.28	0.7%	Negligible
R5	0.18	12.56	12.65	0.27	0.7%	Negligible
R6	0.18	12.58	12.67	0.27	0.7%	Negligible
R7	0.17	12.62	12.72	0.27	0.7%	Negligible
R8	0.17	12.66	12.76	0.27	0.7%	Negligible
R9	0.17	12.72	12.82	0.27	0.7%	Negligible
R10	0.17	13.17	13.28	0.28	0.7%	Negligible
R11	0.17	14.58	14.72	0.31	0.8%	Negligible
R12	0.17	14.43	14.49	0.23	0.6%	Negligible
R13	0.17	13.35	13.41	0.23	0.6%	Negligible
R14	0.16	12.94	13.00	0.22	0.6%	Negligible
R15	0.16	12.73	12.78	0.21	0.5%	Negligible
R16	0.15	12.67	12.72	0.20	0.5%	Negligible
R17	0.13	12.55	12.57	0.15	0.4%	Negligible
R18	0.12	12.78	12.84	0.18	0.4%	Negligible

Replacement table 3.4: NO_2 impact at receptors in Castletown in 2023 (best-case roads modelling scenario)
Notes:
Assumes fleet changes in line with projections – i.e. 2023 emission factors from Defra's emissions factor toolkit.
Assumes background concentration does not reduce from mapped 2018 background concentration.

3.51 As shown in the replacement tables 3.3 and 3.4, the combined impact of emissions from traffic associated with the proposed development and process emissions from the ERF is a maximum of 1.3% of the AQAL if it is conservatively assumed that the UK vehicle fleet mix does not change from 2018 levels (the base year of the emissions factor toolkit). However, it if is assumed that the fleet changes in line with projections (i.e. a turnover of older HGVs with new vehicles and a take-up of electric vehicles), the maximum impact is 0.8% of the AQAL. In both instances, in accordance with the matrix in figure 4.1 of the original ES, the magnitude of change is described as negligible because the contribution from the proposed development is 1% (i.e. between 0.5% and 1.5%) and the total concentration including background sources is less than 94% of the AQAL.

3.52 Based on the matrix, the magnitude of change for an impact of 1% of the AQAL would be described as 'slight adverse' if the total concentration was between 95-102% of the AQAL and 'moderate adverse' if the total concentration was greater than 103% of the AQAL. It should be noted that the magnitude of change descriptor should be used with professional judgement to determine the significance of the effect, taking into account factors such as the uncertainty in the modelling and extent of impacts.

3.53 The predicted total concentration at the most impacted receptor in Castletown (R11) is 17.23 µg/m^3 (0.17 + 17.06 µg/m^3), which equates to 43% of the AQAL, assuming no change in fleet from the 2018 composition. Although the local operations at the port have not been specifically included within the modelling, the mapped background data will account for these emissions (albeit averaged over the 1 km grid square).

3.54 The impact from operations at the port would need to increase NO_2 levels by 20.77 µg/m^3 for the impact of the proposed development to be described as slight adverse, or 23.97 µg/m^3 for the impact of the proposed development to be described as moderate adverse. It is considered that there is little risk of the impact of operations at the port increasing pollution levels in this area by this amount, particularly as if they were to be close to the AQAL Dorset Council should have declared an AQMA due to potential exceedances of the AQAL and no declaration has been made.

Impacts on air quality in the Boot Hill area

3.55 The assessment of impacts on air quality in the Boot Hill area in the original ES has also been updated following the revised modelling. The original assessment found that the largest change in NO_2 concentrations predicted as a result of traffic associated with the proposed development would be 0.47% of the AQAL, below the 0.5% threshold at which an effect can be assessed as negligible and not significant.

3.56 The revised modelling set out in detail in appendix 3.5 shows that the change will remain below 0.5% of the AQAL and will therefore be negligible and not significant for all receptors except one. At RT28, the maximum change in annual mean concentrations of NO_2 is predicted to be 0.7% of the AQAL, based on the worst-case assumption of no change in the vehicle fleet mix from 2018 levels. The total concentration including background sources is predicted to be above the AQAL, so the effect would be described as moderate adverse. However, if it is assumed that the vehicle fleet mix changes in line with projections to 2023, the impact is reduced to 0.4% of the AQAL and the effect would be negligible and not significant.

3.57 As the effect of the proposed development will be negligible at all but one of the 34 receptors modelled in Boot Hill based on worst-case assumptions, and at all the receptors based on current projections of vehicle fleet mix changes, overall no significant effects are predicted on air quality in the Boot Hill area as a result of the proposed development.

Cumulative effects assessment

3.58 As discussed above, emissions from traffic flows associated with the other developments in the area were included in the revised dispersion modelling. Therefore, the potential cumulative effects are included in the modelling results and no significant cumulative effects are predicted. This conclusion is unchanged from the original assessment.

Conclusions

3.59 The additional air quality information and assessment has not identified any significant effects on sensitive human or ecological receptors in the vicinity of the proposed ERF. Given this, the conclusions of the original ES chapter that there will be no significant air quality effects remain valid and unchanged.

4 Carbon balance and greenhouse gas emissions

Introduction

4.1 Dorset Council's letter did not request any additional information and clarification in relation to carbon balance and greenhouse gas emissions. However, the assessment of cumulative effects has been reviewed following the change in scope discussed in section 2.

Assessment of cumulative effects

4.2 The original carbon balance and greenhouse gas emissions assessment concluded that there is no potential for significant cumulative effects with other developments in the area because the proposed development will lead to significant net carbon benefits. The removal of the 1997 and 2010 Harbour Revision Order works from the assessment and the addition of the heliport building do not change this conclusion.

Conclusions

4.3 As no additional information and clarification was requested in relation to carbon balance and greenhouse gas emissions, and there is no change to the assessment of cumulative effects, the original ES conclusion that the proposed development will have a significant beneficial effect as a result of reduced carbon emissions compared to the baseline remains valid and unchanged.

5 Community, health and economic effects

5.1 Dorset Council's letter requested the following additional information and clarification in relation to effects on health:

- Further consideration and assessment of the recommended model used in the human health risk assessment for most pollutants (including metals) and dioxins. Including an assessment against the tolerable daily intake (TDI) of dioxins, furans and other considered metals for the oral pathway at the worst-case receptors. This should address the comment made by UK Health and Security Agency (point 3 in the council's letter)

5.2 No additional information or clarifications were requested in relation to community and economic effects.

5.3 Fichtner Consulting Engineers Limited has produced technical notes to provide the requested assessment of the impact of releases of dioxins, dioxin-like furans and dioxin-like PCBs (collectively referred to as dioxins) and metals against the TDI (point 3 in the council's letter). These notes supplement the original human health risk assessment (HHRA) carried out by ERM. The full technical notes are provided in appendices 5.1 and 5.2 and their findings are summarised in this section.

Human health risk assessment

Introduction

5.4 The Environment Agency[1] defines a TDI as *"an estimate of the amount of a contaminant, expressed on a bodyweight basis, which can be ingested daily over a lifetime without appreciable health risk."* A mean daily intake (MDI) is also defined, which is the typical intake from background sources (including dietary intake) across the UK. In order to assess the impact of the proposed ERF, the predicted intake of a substance due to emissions from the facility is added to the MDI and compared with the TDI. If the total exposure is less than the TDI, it can be concluded that the impact of the proposed ERF is negligible and the effect is not significant.

Dioxins

5.5 Detailed results tables setting out the impact of emissions of dioxins from the proposed ERF are provided in appendix 5.1. Table 5.1 summarises the results of the assessment of dioxin emissions at the maximum impacted receptor (R1: Fortuneswell, Portland) for the two scenarios examined in the original HHRA[2].

[1] Environment Agency, 2009, *Human Health Toxicological Assessment of Contaminants in Soil.*

[2] Scenario 1: A person who lives in the study area and undertakes recreational activities such as gardening, but does not cultivate food at home or consume locally grown food. Scenario 2: A person who lives in the study area and undertakes recreational activities such as gardening, cultivates food at home and consumes locally grown food, including fruit and vegetables, eggs and chickens, but not milk, beef or pork.

Scenario	MDI (% of TDI)	Process contribution (% of TDI)	Overall (% of TDI)
		Adult	
Scenario 1	35.00%	0.0089%	35.01%
Scenario 2	35.00%	0.0409%	35.04%
		Child	
Scenario 1	90.65%	0.0310%	90.68%
Scenario 2	90.65%	0.1007%	90.75%
Table 5.1: Dioxins at the maximum impacted receptor			

5.6 Table 5.1 shows that the overall impact (including the contribution from existing dietary intakes) will be less than the relevant TDIs for dioxins for both adults and children. The impact at the most affected sensitive receptor will be only 0.1% of the TDI.

5.7 In addition, the total accumulation of dioxins in an infant via breast milk at the most impacted receptor is 0.0096% of the TDI for scenario 1 and 0.18% of the TDI for scenario 2. There are no ingestion pathways apart from breast milk for an infant receptor. As the process contribution is less than the TDI, it is considered that the operation of the proposed ERF will not significantly increase the health risks from the accumulation of dioxins in infants.

5.8 The analysis showed that the predicted impact of dioxins from the proposed ERF at the maximum impacted receptor will be well below the TDI. As a result, no significant health effects are predicted on adults, children or infants from emissions of dioxins.

Metals

5.9 Detailed results tables setting out the impact of emissions of metals from the proposed ERF are provided in appendix 5.2. Table 5.2 summarises the results of the assessment at the maximum impacted receptor (R1: Fortuneswell, Portland). The results are only presented for scenario 2, which assumes the consumption of home grown produce. As scenario 1 does not include any ingestion of home grown produce or soil, the process contribution to ingestion is zero.

Substance	MDI (% of TDI)		Process contribution (% of TDI)		Overall (% of TDI)	
	Inhalation	Ingestion	Inhalation	Ingestion	Inhalation	Ingestion
			Adult			
Cadmium	20.41%	53.17%	1.64%	0.029%	22.05%	53.20%
Chromium	-	60.48%	-	0.005%	-	60.48%
Chromium (VI)	-	6.05%	-	0.00007%	-	6.05%
Methyl mercury	-	3.11%	-	0.006%	-	3.11%
Mercuric chloride	-	0.71%	-	0.005%	-	0.72%
Mercury	1.19%	-	0.05%	-	1.24%	-
Nickel	14.48%	68.37%	0.39%	0.00%	14.87%	68.37%
			Child			
Cadmium	52.86%	137.72%	2.07%	0.07%	54.93%	137.79%
Chromium	-	156.63%	-	0.015%	-	156.65%
Chromium (VI)	-	15.66%	-	0.0002%	-	15.66%
Methyl mercury	-	8.04%	-	0.014%	-	8.06%
Mercuric chloride	-	1.85%	-	0.014%	-	1.86%
Mercury	3.08%	-	0.06%	-	3.14%	-
Nickel	37.49%	177.07%	0.49%	0.01%	37.99%	177.08%
Table 5.2: Metals at the maximum impacted receptor						

5.10 Table 5.2 shows that the predicted impacts at the most affected sensitive receptor (including the contribution from existing dietary intakes) will be less than the adult TDI for all metals and less than the child TDI for all metals except cadmium, chromium and nickel. For these metals, the MDI from dietary intake already exceeds the child TDI without the ERF. However, the process contribution from the ERF will be exceptionally small for all three metals (0.07% of the TDI for cadmium, 0.015% of the TDI for chromium and 0.01% of the TDI for nickel) and the exceedance is solely due to the fact that the MDI is over 100% of the TDI. As a result, no significant health effects are predicted on either adults or children from the emissions of metals.

Conclusion

5.11 The conclusions of the original ES that there will be no significant effects on human health as a result of emissions of dioxins and metals from the proposed ERF remain valid and are unchanged by the additional information provided in the technical notes in appendices 5.1 and 5.2.

Assessment of cumulative effects

5.12 The original economic assessment identified that the construction and operation of other developments in the vicinity of the site will provide employment opportunities for new and existing residents and business opportunities for existing or incoming businesses, while the proposed ERF will contribute to the supporting infrastructure necessary for commercial and residential development. Overall, a small to medium change was predicted to a receptor of medium sensitivity, leading to a slight to moderate, significant, beneficial cumulative effect.

5.13 The removal of the 1997 and 2010 Harbour Revision Order works from the assessment, particularly the B1 / B2 / B8 development on several areas of land at the Port, is considered to reduce the magnitude of change to small and the overall beneficial cumulative effect to slight and not significant. The addition of the heliport building to the assessment does not alter the revised findings.

5.14 The original assessment concluded that there is no potential for significant cumulative community and health effects with other developments in the area. The removal of the 1997 and 2010 Harbour Revision Order works from the assessment and the addition of the heliport building do not change this conclusion.

Conclusions

5.15 The additional HHRA information has not identified any significant effects and the conclusions of the original ES chapter that there will be no significant health effects remain valid and unchanged. The removal of the 1997 and 2010 Harbour Revision Order works from the cumulative effects assessment has reduced the beneficial cumulative employment effect from slight to moderate to slight and not significant. No other changes are required to the findings of the original assessment.

6 Cultural heritage

Introduction

6.1 Dorset Council's letter requested the following additional information and clarification in relation to cultural heritage effects:

- Further information on the track (/ 'road') reinstatement as described in the heritage mitigation strategy to address the comments made by Natural England (point 8 in the council's letter)

6.2 Terence O'Rourke Ltd, who prepared the original framework heritage mitigation strategy, has provided further information on the proposed permissive footpath in this section. An updated access route drawing is also provided (appendix 6.1).

6.3 As discussed in section 3, the potential for the 8 m high diesel generator stack to lead to any significant cultural heritage effects has been reviewed. In addition, the assessment of cumulative effects has been reviewed following the change in scope discussed in section 2.

Proposed permissive footpath

6.4 Dorset Council's letter requested further information on the proposals for the permissive footpath set out in the framework heritage mitigation strategy that formed appendix 6.1 of the August 2021 ES addendum. This section provides updates to the strategy, which also supersede text relating to the permissive footpath provided in the main August 2021 ES addendum report, where necessary.

6.5 The description of the path in the second bullet point of section 2 of the strategy is revised to state that 'the path will be fenced and will be of minimum width necessary to facilitate access for maintenance vehicles and access for ongoing management of the SSSI.'

6.6 The description of the path works in the second bullet point of section 3 of the strategy is revised to state: 'Creation of a connecting path between footpaths S3/72 and S3/81, across East Weare using the existing route through the secure port estate. This will involve the trimming back of invasive vegetation to fence line and refreshment / maintenance of the existing track surface.'

6.7 A replacement drawing 1081-02-38 Proposed Access Route, which formed appendix 3 of the framework heritage mitigation strategy, is provided in appendix 6.1. Two labels referring to 'Reinstatement of Existing Road' on the previous version have been revised to refer to 'Trim back invasive vegetation to fence line and refreshment / maintenance of existing surface'.

6.8 This further information is designed to clarify the description of the proposals and confirm that the route will be a footpath, not a road. No changes are required to the assessment of cultural heritage effects as a result of these clarifications.

Effects of the diesel generator stack

6.9 As shown on the revised figures 2.5a and 2.5b at the end of this report, while the diesel generator and its 8 m high stack will be visible in views from the north and north east, it will be seen against the proposed main ERF building. The height and massing of the generator and its stack will be negligible in relation to the main ERF building and will therefore not lead to any new or different effects on the settings of heritage assets in the vicinity of the proposed development beyond those originally assessed.

Cumulative effects assessment

6.10 The original assessment concluded that there would be no potential for cumulative effects with any of the works in the 2010 Harbour Revision Order, or the High Speed Ferries operation. The removal of these works from the assessment does not change this conclusion.

6.11 The original assessment also examined the development of several areas of former commercial and industrial operations along East Weare, including Project Osprey, the open storage of waste products on the Parade Ground area of the Rifle Range, B1 / B2 / B8 development on several areas of the Port, and the landside aquaculture scheme. It concluded that these schemes would form part of the setting of the batteries at East Weare and The Verne Citadel, as experienced in public views from the high ground to the east and south, and predicted a slight to moderate, significant adverse cumulative effect.

6.12 As set out in section 2, the majority of these developments have now been removed from the revised cumulative effects assessment, although Project Osprey is still included. As some development will still proceed in the area, it is considered that the conclusion of a slight to moderate, significant adverse cumulative effect remains valid.

6.13 The original assessment identified a slight to moderate, significant adverse cumulative effect on Portland Castle as a result of one of the schemes forming part of the ongoing development of the RNAS helicopter base at Osprey Quay (Plot X, Mulberry Avenue, Portland). The heliport at Coode Way is also part of this area. The submitted heritage assessment for the heliport building application[3] predicts no effects on the castle or its setting and there is no potential for significant cumulative effects with this development.

Conclusions

6.14 The additional information and clarification provided on the permissive footpath does not alter the conclusions of the assessment. There is no change to the assessment findings as a result of the diesel generator stack or the revised list of cumulative projects. As a result, the conclusions of the original ES chapter (as amended by the August 2021 ES addendum) remain valid.

[3] Cotswold Archaeology, 2020, *HM Coastguard Search and Rescue Portland, Dorset Heritage Assessment.*

7 Ground conditions and water quality

Introduction

7.1 Dorset Council's letter did not request any additional information and clarification in relation to impacts on ground conditions and water quality. However, the assessment of cumulative effects has been reviewed following the change in scope discussed in section 2.

Cumulative effects assessment

7.2 The original ground conditions and water quality assessment concluded that there is no potential for significant cumulative effects with other developments in the area. The removal of the 1997 and 2010 Harbour Revision Order works from the assessment and the addition of the heliport building do not change this conclusion.

Conclusions

7.3 As no additional information and clarification was requested in relation to impacts on ground conditions and water quality, and there is no change to the assessment of cumulative effects, the conclusions of the original ES chapter that there will be no significant ground conditions and water quality effects remain valid and unchanged.

8 Landscape, seascape and visual effects

Introduction

8.1 Dorset Council's letter did not request any additional information and clarification in relation to landscape, seascape and visual effects. However, as discussed in section 3, the potential for the 8 m high diesel generator stack to lead to any significant landscape, seascape and visual effects has been reviewed. In addition, the assessment of cumulative effects has been reviewed following the change in scope discussed in section 2.

Effects of the diesel generator stack

8.2 As shown on the revised figures 2.5a and 2.5b at the end of this report, while the diesel generator and its 8 m high stack will be visible in views from the north and north east, it will be seen against the proposed main ERF building. The height and massing of the generator and its stack will be negligible in relation to the main ERF building and will therefore not lead to any new or different landscape, seascape and visual effects beyond those originally assessed.

Cumulative effects assessment

8.3 The original landscape, seascape and visual assessment concluded that there would not be any significant cumulative effects on landscape character with the 1997 and 2010 Harbour Revision Order developments because they would be characteristic of the existing port facilities. Similarly, the assessment concluded that there would not be any significant cumulative effects on visual amenity with those developments because the existing views are of a working port and all its associated infrastructure and the changes to the views will be seen in this context. The removal of the 1997 and 2010 Harbour Revision Order works from the cumulative effects assessment therefore does not change its conclusions.

8.4 The proposed new building at the heliport for servicing and maintenance of helicopters lies within the Osprey Quay key employment area. This area is part of the Portland 'Northern Arc'. Within the wider heliport site, there is currently an existing hangar building and further ancillary structures. The majority of the site is tarmac hardstanding used as a helipad and runway for take-off and landing and associated activities. The proposed new hangar lies immediately adjacent to a number of industrial premises and will be of a similar scale and character to the buildings within Osprey Quay. There are therefore not expected to be any significant adverse cumulative effects on landscape character.

8.5 In views from the north and west, the existing buildings will screen the proposed new building and in views from the south east the proposed building will sit immediately in front of the existing industrial buildings. In views from the north east from Portland Harbour, the hangar will be viewed in combination with other Osprey Quay buildings and the proposed ERF. There are not expected to be any significant adverse cumulative effects on visual amenity, as these buildings lie within a key employment area where views of industrial and commercial buildings are expected.

Conclusions

8.6 No additional information and clarification was requested in relation to landscape, seascape and visual effects, and there is no change to the assessment findings as a result of the diesel generator stack or the revised list of cumulative projects. As a result, the conclusions of the original ES chapter remain valid and unchanged.

9 Natural heritage

9.1 Dorset Council's letter requested the following additional information and clarification in relation to natural heritage effects:

- Further detail relating to marine conservation zones to address the comments made by Natural England (point 7 in the council's letter)

9.2 Terence O'Rourke Ltd, who undertook the assessment of effects on off-site natural heritage for the original ES, has reviewed the assessment of cumulative effects of road traffic emissions on designated sites that was provided in the August 2021 ES addendum in the light of the updated air quality modelling provided in section 3. The findings of this review are provided in this section.

9.3 ABPmer has produced a marine conservation zone (MCZ) screening assessment (point 7 in the council's letter). The full assessment report is provided in appendix 9.1 and its findings are summarised in this section.

9.4 Terence O'Rourke Ltd also prepared the shadow appropriate assessment and has now produced an updated shadow appropriate assessment report providing a revised assessment of the potential in-combination effects with other developments in the area, based on the updated air quality modelling. As the shadow appropriate assessment did not form part of the original ES, the updated report is submitted as a stand alone document.

Effects on off-site designated nature conservation sites

9.5 The updated air quality modelling discussed in section 3 in relation to the potential cumulative effects of road traffic along the local road network is examined in detail in the updated shadow appropriate assessment. This concludes that there will be no significant effects from the cumulative emissions on NSN sites, which confirms the conclusions of the original ES and August 2021 ES addendum.

9.6 The assessment of the potential for cumulative effects on the parts of the Isle of Portland SSSI that are adjacent to the roads used to access the proposed ERF set out in the August 2021 ES addendum has also been reviewed. For scrub habitat within the SSSI, APIS[4] gives maximum background levels of nitrogen deposition of 14.1 kgN/ha/year. The maximum NH_3 concentration is 0.71 µg/m^3 and the maximum NO_x concentration is 35.33 µg/m^3. The detailed air quality modelling along the road shows that the impacts of road traffic (combined with the emissions from the ERF) will be localised, with the highest concentrations of NH_3 and rates of nitrogen deposition occurring within 5 m of the road. The greatest source of these emissions is from road traffic. Levels of NO_x will exceed the relevant critical level with or without the development.

9.7 The absence of scarce and notable lower plants in this part of the SSSI means that localised changes in NH_3 concentrations will not have an adverse impact on the interest features of the SSSI. The localised changes in NO_x concentrations and nitrogen deposition are also not considered to be significant. Localised concentrations of NO_x are likely to fall over the medium to long term with the

[4] UK Air Pollution Information System (www.apis.ac.uk).

move towards electrification of cars, vans and lorries and the move towards the use of shore power by ships within Portland Harbour. The conclusions of the original ES and August 2021 ES addendum that there will be no significant cumulative effects on the SSSI therefore remain unchanged.

Potential marine impacts

Introduction

9.8 The MCZ screening assessment was undertaken in accordance with guidance produced by the Marine Management Organisation (2013)[5] and Natural England (2015)[6]. The findings of the assessment are summarised in this section and set out in full in appendix 9.1. The screening process was carried out to determine whether there is the potential for the proposed ERF to lead to a significant effect on MCZ interest features, either alone or in-combination with other plans and projects. The assessment considered the potential for significant effects on the four MCZs within 20 km of the site.

9.9 Chesil Beach and Stennis Ledges MCZ is 1.6 km to the west of the site, but more than 10 km away by sea for marine impact pathways because it is to the opposite side of Portland. The interest features of this MCZ are high energy circalittoral rock, high energy infralittoral rock, high energy intertidal rock, intertidal coarse sediment, subtidal coarse sediment, subtidal mixed sediment, subtidal sand, native oyster and pink sea-fan.

9.10 South of Portland MCZ is 6.9 km to the south west of the site, but more than 10 km away by sea for marine impact pathways because it is to the south west of Portland. This MCZ's interest features are high energy circalittoral rock, moderate energy circalittoral rock, subtidal mixed sediment, subtidal coarse sediment, subtidal sand and Portland deep geological feature.

9.11 Purbeck Coast MCZ is 7.0 km to the east of the site. Its interest features are high energy intertidal rock, intertidal coarse sediment, moderate energy intertidal rock, subtidal coarse sediment, subtidal mixed sediment, peacock's tail, stalked jellyfish, black seabream and maerl beds. South Dorset MCZ is 16.8 km to the south east of the site. Its interest features are subtidal coarse sediment, high energy circalittoral rock, moderate energy circalittoral rock and subtidal chalk.

Smothering, siltation rate changes and contamination

9.12 The screening assessment considered the potential for effects on the various interest features set out above from smothering and siltation rate changes and contamination with synthetic compounds. The potential for runoff of sediment and contamination during construction will be mitigated by measures set out in the construction environmental management plan (CEMP), while any discharges will be to the wastewater sewer. During operation, process water and wastewater discharges from the ERF will also be to the sewer. They will be treated at Weymouth Wastewater Treatment Works prior to discharge to the sea via an existing long sea outfall within the Chesil Beach and Stennis Ledges MCZ. The operational discharges will be a minor component of the overall

[5] Marine Management Organisation, 2013, *Marine Conservation Zones and Marine Licensing.*
[6] Natural England, 2015, *Marine Protected Areas: how to use conservation advice packages.*

discharge from the treatment works. Any accidental spillages during operation would be managed through site operating procedures.

9.13 The assessment concluded that the effects on marine water and sediment quality as a result of smothering and siltation rate changes and synthetic compound contamination will be negligible during both construction and operation. The negligible change in marine water quality meant that the potential effects on MCZ habitat, geological and faunal interest features were also assessed as negligible and not significant.

Ocean acidification

9.14 The screening assessment examined the potential for effects on the MCZ interest features from ocean acidification as a result of sulphur dioxide (SO_2) and carbon dioxide (CO_2) emissions to air. However, seawater has a high buffering capacity and no localised changes in pH would be expected as a result of the deposition of SO_2 or CO_2 into the marine environment. The contribution of CO_2 from the proposed ERF will be negligible in a global context. Given the negligible magnitude of the changes, and the distance of the MCZs from the site, the potential effects on the MCZ habitat, geological and faunal interest features were assessed as negligible and not significant.

Mercury and dioxins

9.15 The potential for effects associated with the accumulation of mercury and dioxins in marine waters and sediments within Portland Harbour and surrounding regions as a result of the proposed development was also assessed. Modelling was carried out to assess the potential risk of the accumulation of mercury with local marine waters, full details of which are provided in the August 2021 ES addendum. This estimated that the potential worst case aerial deposition of mercury would increase the background concentrations of dissolved mercury by less than 2% (from 0.005 µg/l to 0.00508 µg/l). Ambient concentrations of dissolved mercury will remain at around 10% of the saline environmental quality standards value. On this basis, the marginal increase in ambient concentration as a result of worst case aerial deposition of mercury was assessed as not significant.

9.16 Further modelling was undertaken to assess the potential risk of the accumulation of mercury within local sediments, full details of which can be found in the August 2021 ES addendum. Based on conservative assumptions, the model estimated that deposition of mercury would increase the sediment concentration of mercury by 112 ng/kg sediment (dry weight) per year. This equates to 0.09% of the Interim Sediment Quality Guidelines (ISQG) designed to protect sea life (0.13 mg/kg dry weight sediment)[7]. Any mercury in sediments would not be bioavailable to any of the relevant species identified as features of interest (native oysters, pink sea-fan, stalked jellyfish, peacock's tail and black seabream).

9.17 Given the above, the assessment concluded that there will be no significant risks to the MCZ habitat, geological and faunal interest features associated with

[7] Canadian Council of Ministers of the Environment, 1999, *Canadian Sediment Quality Guidelines for the Protection of Aquatic Life – Mercury.*

mercury emissions, either from a risk to marine water quality standards or as a result of sediment contamination.

9.18 Within the marine environment, dioxins will strongly adsorb to organic particles and sediment within the water column and may deposit within local marine sediments. Dissolved concentrations in the water column will be negligible. Modelling was carried out to assess the potential risk of accumulation of dioxins within local sediments, full details of which are provided in the August 2021 ES addendum. Based on conservative assumptions, the model estimated that deposition of dioxins would increase the sediment concentration of dioxins by 0.013 ng/kg sediment (dry weight) per year. This equates to 1.5% of the ISQG designed to protect sea life (0.85 ng/kg dry weight sediment)[8]. Any dioxins in sediments would not be bioavailable to any of the relevant species identified as features of interest (native oysters, pink sea-fan, stalked jellyfish, peacock's tail and black seabream).

9.19 On this basis, the assessment concluded that there will be no significant risks to the MCZ habitat, geological and faunal interest features from dioxin emissions.

Nutrient enrichment

9.20 The potential for NO_x and NH_3 emissions to affect the local marine environment was also considered. The process contribution from the ERF to ground level concentrations of NO_2 and NH_3 will be very small at less than 1 $\mu g/m^3$ for NO_2 and negligible for NH_3. In contrast, background concentrations of nitrogen in seawater, primarily as nitrate, are many orders of magnitude greater. On this basis, the small process contribution from the ERF will not materially contribute to nutrient concentrations in adjacent marine waters and therefore will not significantly increase the risk of eutrophication. Given the negligible magnitude of change, and the distance of the MCZs from the site, the potential effects on all the MCZ interest features were assessed as negligible.

Visual and underwater noise disturbance

9.21 The potential for effects from visual and underwater noise disturbance was considered for the black seabream interest feature in the Purbeck Coast MCZ, as this is the only feature that could potentially be affected by these elements. However, the proposed ERF will be approximately 7 km away from the Purbeck Coast MCZ and this distance means that there will be no significant visual or underwater noise disturbance effects on the black seabream interest feature.

Conclusions

9.22 The MCZ screening assessment concluded that all the potential effects examined will be negligible and not significant in terms of risks to MCZ interest features. On this basis, there is no significant risk that the proposed development will hinder the conservation objectives of any of the MCZ features at the four sites and no further assessment is required.

[8] Canadian Council of Ministers of the Environment, 2001, *Canadian Sediment Quality Guidelines for the Protection of Aquatic Life – Polychlorinated dibenzo-p=dioxins and polychlorinated dibenzofurans (PCDD/Fs).*

Cumulative effects assessment

9.23 The original assessment concluded that there would be no significant cumulative natural heritage effects with other developments in the area. The updated air quality modelling incorporated traffic flows from the revised list of cumulative projects and the removal of the 1997 and 2010 Harbour Revision Order development from the assessment will not change this conclusion. The application for the proposed heliport building incorporates mitigation measures to ensure that it will not have any significant adverse natural heritage effects, including a financial contribution to mitigate the potential for increased recreational use of nearby designated nature conservation sites. As a result, it is considered that there is no potential for significant cumulative natural heritage effects with the proposed development.

Conclusions

9.24 The additional natural heritage information and assessment has not identified any significant effects on off-site designated nature conservation sites, either terrestrial or marine, as a result of the proposed ERF. Given this, and the fact that there is no change to the findings of the cumulative effects assessment, the conclusions of the original ES chapter that the proposed development will not lead to any significant residual natural heritage effects remain valid and unchanged.

10 Traffic and transport

Introduction

10.1 Dorset Council's letter did not request any additional information and clarification in relation to traffic and transport effects. However, the original traffic modelling included flows associated with the 1997 and 2010 Harbour Revision Order developments within the future baseline. It was therefore necessary to re-run the modelling without these flows and update the assessment accordingly. The limited number of traffic movements associated with the heliport building are accounted for within the background growth.

10.2 Awcock Ward Partnership, who undertook the original traffic and transport assessment, has produced an addendum to the transport assessment (TA) to report the results of this updated modelling and the revised assessment. This is provided in appendix 10.1 and this section provides an update to the original ES traffic and transport chapter.

Future baseline

10.3 The revised future baseline AM peak, PM peak and 24-hour annual average daily traffic (AADT) inbound and outbound flows without the 1997 and 2010 Harbour Revision Order developments have been modelled for all vehicles and HGVs. The flows are shown in tables 10.1 and 10.2 for 2023 and tables 10.3 and 10.4 for 2033. These tables replace tables 11.4 to 11.7 in the original ES chapter.

Link ref	Link	AM peak		PM peak		AADT	
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	15	41	43	17	361	362
2	A354 Portland Beach Road	1,033	1,082	988	1,050	12,470	13,154
3	A354 Portland Road (south of Foord's Corner Roundabout)	1,080	1,017	1,370	1,279	15,121	14,166
4	A354 Buxton Road (north of Foord's Corner Roundabout)	822	505	713	822	9,476	8,191
5	A354 Buxton Road (Boot Hill)	1,319	872	949	1,060	13,998	11,925
6	A354 Weymouth Way (south of Granby Roundabout)	821	872	767	1,060	9,796	11,925
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	1,159	1,748	1,157	1,519	14,289	20,161
8	B3157 Granby Way	964	970	834	1,625	11,094	16,012
9	B3156 Portland Road	671	1,005	1,190	1,046	11,489	12,655

Table 10.1: Revised 2023 future baseline traffic flows (all vehicles)

Link ref	Link	AM peak		PM peak		AADT	
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	4	10	11	4	89	89
2	A354 Portland Beach Road	239	432	340	180	3,569	3,776
3	A354 Portland Road (south of Foord's Corner Roundabout)	156	376	297	123	2,796	3,076
4	A354 Buxton Road (north of Foord's Corner Roundabout)	360	139	122	296	2,974	2,688
5	A354 Buxton Road (Boot Hill)	214	255	193	119	2,512	2,308
6	A354 Weymouth Way (south of Granby Roundabout)	145	255	180	119	2,008	2,308
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	201	85	363	85	3,480	1,052
8	B3157 Granby Way	212	93	63	154	1,695	1,527
9	B3156 Portland Road	94	199	152	64	1,516	1,626

Table 10.2: Revised 2023 future baseline traffic flows (HGVs)

Link ref	Link	AM peak		PM peak		AADT	
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	16	45	17	44	206	547
2	A354 Portland Beach Road	1,102	1,141	1,228	938	14,382	12,830
3	A354 Portland Road (south of Foord's Corner Roundabout)	1,125	1,050	1,251	848	14,666	11,710
4	A354 Buxton Road (north of Foord's Corner Roundabout)	846	524	635	704	9,136	7,572
5	A354 Buxton Road (Boot Hill)	1,420	929	1,475	830	17,865	10,852
6	A354 Weymouth Way (south of Granby Roundabout)	880	929	938	830	11,217	10,852
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	1,218	1,819	1,213	1,587	14,997	21,019
8	B3157 Granby Way	1,030	1,045	913	1,123	11,991	13,378
9	B3156 Portland Road	742	1,102	822	985	9,650	12,884

Table 10.3: Revised 2033 future baseline traffic flows (all vehicles)

Link ref	Link	AM peak		PM peak		AADT	
		Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	4	11	4	10	53	132
2	A354 Portland Beach Road	248	439	412	213	4,076	4,023
3	A354 Portland Road (south of Foord's Corner Roundabout)	157	377	322	151	2,956	3,258
4	A354 Buxton Road (north of Foord's Corner Roundabout)	361	140	135	304	3,059	2,743
5	A354 Buxton Road (Boot Hill)	227	262	308	149	3,299	2,536
6	A354 Weymouth Way (south of Granby Roundabout)	152	262	234	149	2,378	2,536
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	205	90	366	89	3,522	1,104
8	B3157 Granby Way	215	96	102	178	1,954	1,690
9	B3156 Portland Road	98	202	180	89	1,712	1,799

Table 10.4: Revised 2033 future baseline traffic flows (HGVs)

Effects during construction

10.4 The revised 'with construction traffic' AADT flows, together with the change in flows as a result of the proposed development, are set out in table 10.5. This replaces table 11.9 in the original ES chapter.

Link ref	Link	Unit	Outbound	Inbound
1	Castletown (at port access)	Flow	243	584
		Change	17.99%	6.77%
2	A354 Portland Beach Road	Flow	14,419	12,867
		Change	0.26%	0.29%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	14,703	11,747
		Change	0.25%	0.32%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	9,173	7,609
		Change	0.40%	0.49%
5	A354 Buxton Road (Boot Hill)	Flow	17,902	10,889
		Change	0.21%	0.34%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	11,254	10,889
		Change	0.33%	0.34%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	15,034	21,056
		Change	0.25%	0.18%
8	B3157 Granby Way	Flow	12,028	13,415
		Change	0.31%	0.28%
9	B3156 Portland Road	Flow	9,687	12,921
		Change	0.38%	0.29%

Table 10.5: Revised 2023 'with construction traffic' AADT flows and change as a result of the proposed development (all vehicles)

10.5 Table 10.5 shows that the greatest impact will be experienced in Castletown, immediately outside the port gates, with outbound increases in flows of just under 18%. Increases on all other links will be less than 1%. As set out in the original ES chapter, in accordance with the Institute of Environmental Assessment's (IEA; 1993) *Guidelines for the Environmental Assessment of Road Traffic*, further assessment is not required on any link except Castletown because the predicted increases are below 10%. As a result, negligible effects that will not be significant are predicted on severance, driver and pedestrian delay, pedestrian amenity, and accidents and safety on these road links.

10.6 The outbound increase in traffic on Castletown is predicted to exceed the 10% threshold, however, so further assessment is required. With reference to table 11.2 and figure 11.3 in the original ES chapter, an increase of 17.99% is a change of negligible magnitude that will lead to negligible effects on severance, driver and pedestrian delay, pedestrian amenity and accidents and safety on Castletown. No significant effects are therefore predicted during construction.

Effects post-construction

10.7 The revised 'with development' traffic flows, together with the change in flows as a result of the proposed development, for all vehicles and HGVs are set out in tables 10.6 and 10.7 for 2023 and tables 10.8 and 10.9 for 2033. These tables replace tables 11.10 to 11.13 in the original ES chapter.

Link ref	Link	Unit	AM peak		PM peak		AADT	
			Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	Flow	19	45	47	21	420	421
		Change	26.67%	9.76%	9.30%	23.53%	16.34%	16.30%
2	A354 Portland Beach Road	Flow	1,036	1,085	991	1,053	12,511	13,195
		Change	0.29%	0.28%	0.30%	0.29%	0.33%	0.31%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	1,084	1,020	1,373	1,282	15,161	14,207
		Change	0.37%	0.29%	0.22%	0.23%	0.26%	0.29%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	824	507	715	824	9,496	8,211
		Change	0.24%	0.40%	0.28%	0.24%	0.21%	0.24%
5	A354 Buxton Road (Boot Hill)	Flow	1,321	874	951	1,062	14,018	11,945
		Change	0.15%	0.23%	0.21%	0.19%	0.14%	0.17%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	823	849	768	772	9,816	10,007
		Change	0.24%	0.12%	0.13%	0.13%	0.20%	0.20%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	1,162	1,751	1,160	1,522	14,330	20,201
		Change	0.26%	0.17%	0.26%	0.20%	0.29%	0.20%
8	B3157 Granby Way	Flow	966	971	835	1,627	11,114	16,033
		Change	0.21%	0.10%	0.12%	0.12%	0.18%	0.13%
9	B3156 Portland Road	Flow	673	1,007	1,192	1,047	11,509	12,675
		Change	0.30%	0.20%	0.17%	0.10%	0.17%	0.16%

Table 10.6: Revised 2023 'with development' flows and change as a result of the proposed development (all vehicles)

Link ref	Link	Unit	AM peak		PM peak		AADT	
			Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	Flow	7	14	14	7	129	129
		Change	75.00%	40.00%	27.27%	75.00%	44.94%	44.94%
2	A354 Portland Beach Road	Flow	242	435	343	183	3,610	3,817
		Change	1.26%	0.69%	0.88%	1.67%	1.15%	1.09%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	159	379	301	126	2,837	3,116
		Change	1.92%	0.80%	1.35%	2.44%	1.47%	1.30%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	362	141	123	298	2,995	2,708
		Change	0.56%	1.44%	0.82%	0.68%	0.71%	0.74%
5	A354 Buxton Road (Boot Hill)	Flow	216	257	195	120	2,533	2,328
		Change	0.93%	0.78%	1.04%	0.84%	0.84%	0.87%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	147	248	182	100	2,028	2,151
		Change	1.38%	0.40%	1.11%	2.04%	1.00%	0.94%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	205	89	366	88	3,521	1,093
		Change	1.99%	4.71%	0.83%	3.53%	1.18%	3.90%
8	B3157 Granby Way	Flow	213	95	65	156	1,715	1,548
		Change	0.47%	2.15%	3.17%	1.30%	1.18%	1.38%
9	B3156 Portland Road	Flow	96	201	153	66	1,536	1,647
		Change	2.13%	1.01%	0.66%	3.13%	1.32%	1.29%

Table 10.7: Revised 2023 'with development' flows and change as a result of the proposed development (HGVs)

Link ref	Link	Unit	AM peak		PM peak		AADT	
			Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	Flow	20	48	20	47	265	606
		Change	25.00%	6.67%	17.65%	6.82%	28.64%	10.79%
2	A354 Portland Beach Road	Flow	1,106	1,144	1,232	942	14,423	12,871
		Change	0.36%	0.26%	0.33%	0.43%	0.29%	0.32%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	1,129	1,053	1,255	851	14,706	11,751
		Change	0.36%	0.29%	0.32%	0.35%	0.27%	0.35%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	848	525	636	705	9,156	7,593
		Change	0.24%	0.19%	0.16%	0.14%	0.22%	0.28%
5	A354 Buxton Road (Boot Hill)	Flow	1,422	930	1,477	831	17,885	10,873
		Change	0.14%	0.11%	0.14%	0.12%	0.11%	0.19%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	882	904	939	805	11,237	10,547
		Change	0.23%	0.22%	0.11%	0.25%	0.18%	0.20%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	1,221	1,823	1,216	1,590	15,038	21,060
		Change	0.25%	0.22%	0.25%	0.19%	0.27%	0.20%
8	B3157 Granby Way	Flow	1,032	1,046	915	1,125	12,011	13,398
		Change	0.19%	0.10%	0.22%	0.18%	0.17%	0.15%
9	B3156 Portland Road	Flow	744	1,104	823	987	9,670	12,904
		Change	0.27%	0.18%	0.12%	0.20%	0.21%	0.16%

Table 10.8: Revised 2033 'with development' flows and change as a result of the proposed development (all vehicles)

Link ref	Link	Unit	AM peak		PM peak		AADT	
			Outbound	Inbound	Outbound	Inbound	Outbound	Inbound
1	Castletown (at port access)	Flow	7	14	7	14	93	172
		Change	75.00%	27.27%	75.00%	40.00%	75.47%	30.30%
2	A354 Portland Beach Road	Flow	252	443	416	216	4,116	4,064
		Change	1.61%	0.91%	0.97%	1.41%	0.98%	1.02%
3	A354 Portland Road (south of Foord's Corner Roundabout)	Flow	161	381	325	154	2,997	3,298
		Change	2.55%	1.06%	0.93%	1.99%	1.39%	1.23%
4	A354 Buxton Road (north of Foord's Corner Roundabout)	Flow	363	142	136	306	3,080	2,764
		Change	0.55%	1.43%	0.74%	0.66%	0.69%	0.77%
5	A354 Buxton Road (Boot Hill)	Flow	228	264	310	150	3,320	2,556
		Change	0.44%	0.76%	0.65%	0.67%	0.64%	0.79%
6	A354 Weymouth Way (south of Granby Roundabout)	Flow	153	255	235	141	2,398	2,443
		Change	0.66%	0.79%	0.43%	0.71%	0.84%	0.83%
7	A354 Weymouth Relief Road (south of Stadium Roundabout)	Flow	208	93	369	93	3,563	1,144
		Change	1.46%	3.33%	0.82%	4.49%	1.16%	3.62%
8	B3157 Granby Way	Flow	217	98	103	180	1,974	1,710
		Change	0.93%	2.08%	0.98%	1.12%	1.02%	1.18%
9	B3156 Portland Road	Flow	99	204	181	91	1,732	1,819
		Change	1.02%	0.99%	0.56%	2.25%	1.17%	1.11%

Table 10.9: Revised 2033 'with development' flows and change as a result of the proposed development (HGVs)

10.8 Tables 10.6 to 10.9 show that both total vehicle flows and HGV flows are predicted to increase by less than 5% as a result of the proposed development on all of the road links modelled except Castletown (link 1), even in the worst-case scenario of 100% of deliveries to the site and removal of ash being made by road. As set out above, in accordance with the IEA guidelines, further assessment is not required on these links because the predicted increases are

below 10%. As a result, negligible effects that will not be significant are predicted on severance, driver and pedestrian delay, pedestrian amenity, and accidents and safety on these road links.

10.9 Increases in traffic on Castletown are predicted to exceed the 10% threshold, however, so further assessment is required. The increases in all vehicles are predicted to be up to 26.67% in 2023 and 28.64% in 2033. With reference to table 11.2 and figure 11.3 in the original ES chapter, these are increases of negligible magnitude that will lead to negligible effects on severance, driver and pedestrian delay, pedestrian amenity and accidents and safety on Castletown.

10.10 The percentage increases in HGVs on Castletown are predicted to be greater, at up to 75% in the AM and PM peaks. With reference to table 11.2 and figure 11.3 in the original ES, this is an increase of medium magnitude. However, as set out in paragraph 11.33 of the original ES, while the percentage change is an important determinant of impact magnitude, the absolute level of impact on a link also needs to be considered. This is because large percentage changes can result when existing flows are very low, which is the case on Castletown.

10.11 The 75% increases predicted in HGV movements in the AM and PM peaks are actually increases from four HGVs to seven, a change of only three HGVs in an hour. The high percentage increase is therefore entirely due to the very low level of baseline traffic. For comparison, the increase of three outbound HGVs in the PM peak in 2023, from 11 HGVs to 14, leads to a corresponding percentage change of 27.27%, which is classed as negligible with reference to figure 11.3. It should also be noted that an increase of three HGVs in an hour equates to one additional HGV every 20 minutes.

10.12 In terms of 24-hour AADT HGV flows, the largest percentage increase is predicted on outbound flows in 2033 at 75.47%. However, this is only an increase of 40 HGVs, from 53 to 93. Averaged over the 24-hour period, the two-way worst-case increase of 80 HGVs on Castletown (40 trips each way) equates to one additional HGV every 18 minutes.

10.13 One HGV every 18 to 20 minutes is considered to be a normal level of interaction with traffic for pedestrians and is significantly less than that already experienced on Portland Beach Road, for example. It should also be noted that pedestrian crossing facilities are available in the form of a zebra crossing at the eastern end of Castletown and dropped kerbs and an island at the western end, which will assist pedestrians in crossing the road. An average increase in HGV movements of one every 18 to 20 minutes is therefore considered to be a negligible change that will not lead to any significant effects on severance, driver and pedestrian delay, pedestrian amenity, and accidents and safety on Castletown.

Cumulative effects assessment

10.14 As for the original assessment, traffic flows associated with the other developments in the area were included in the revised traffic modelling. Therefore, the potential cumulative effects are included in the modelling results and no significant cumulative effects are predicted. This conclusion is unchanged from the original ES chapter.

Conclusions

10.15 The updated traffic modelling and assessment has concluded that effects on severance, driver and pedestrian delay, pedestrian amenity, and accidents and safety will remain negligible and not significant on all the road links in the study area. As a result, the conclusions of the original ES traffic and transport chapter remain valid and unchanged. No significant residual traffic and transport effects are predicted as a result of the proposed development.

11 Waste

Introduction

11.1 Dorset Council's letter did not request any additional information and clarification in relation to waste impacts. However, the assessment of cumulative effects has been reviewed following the change in scope discussed in section 2.

Cumulative effects assessment

11.2 The original waste assessment concluded that there is no potential for significant cumulative effects with other developments in the area because none of them will provide additional residual waste treatment capacity. The removal of the 1997 and 2010 Harbour Revision Order works from the assessment and the addition of the heliport building do not change this conclusion.

Conclusions

11.3 As no additional information and clarification was requested in relation to waste impacts, and there is no change to the assessment of cumulative effects, the original ES waste chapter remains valid and unchanged.

12 World heritage site

Introduction

12.1 Dorset Council's letter did not request any additional information and clarification in relation to impacts on the Dorset and East Devon Coast World Heritage Site (WHS). However, as discussed in section 3, the potential for the 8 m high diesel generator stack to lead to any significant effects on the WHS has been reviewed. In addition, the assessment of cumulative effects has been reviewed following the change in scope discussed in section 2.

Effects of the diesel generator stack

12.2 As shown on the revised figures 2.5a and 2.5b at the end of this report, while the diesel generator and its 8 m high stack will be visible in views from the north and north east, it will be seen against the proposed main ERF building. The height and massing of the generator and its stack will be negligible in relation to the main ERF building and will therefore not lead to any new or different effects on the outstanding universal value (OUV) of the WHS beyond those originally assessed.

Cumulative effects assessment

12.3 The original WHS assessment concluded that overall, taking into account changes to landscapes, heritage assets and views, there would be no significant cumulative effects on the OUV of the WHS in combination with other developments in the area. The removal of the 1997 and 2010 Harbour Revision Order works from the assessment does not change this conclusion. The addition of the heliport building at Coode Way to the assessment has not altered the conclusions of the assessments of effects on cultural heritage or landscape, seascape and visual effects. The conclusions of the original ES chapter therefore remain unchanged.

Conclusions

12.4 No additional information and clarification were requested in relation to WHS effects, and there is no change to the assessment findings as a result of the diesel generator stack or the revised list of cumulative projects. As a result, the conclusions of the original ES chapter remain valid and unchanged.

13 Other issues outside the scope of the EIA

13.1 Dorset Council's letter requested the following additional information and clarification in relation to the shadow appropriate assessment and statement of common ground, which are issues outside the scope of the EIA:

- Further review and consideration of in-combination projects to address the comments made by Natural England, update of the previously submitted shadow appropriate assessment as required (point 6 in the council's letter)
- Provide a copy of the Statement of Common Ground as referenced in Natural England letter dated 1 December 2021 (point 9 in the council's letter)

13.2 Terence O'Rourke Ltd, who prepared the original shadow appropriate assessment, has produced an updated report providing a revised assessment of the potential in-combination effects with other developments in the area, based on the updated air quality modelling. As the shadow appropriate assessment did not form part of the original ES, the updated report is submitted as a stand alone document.

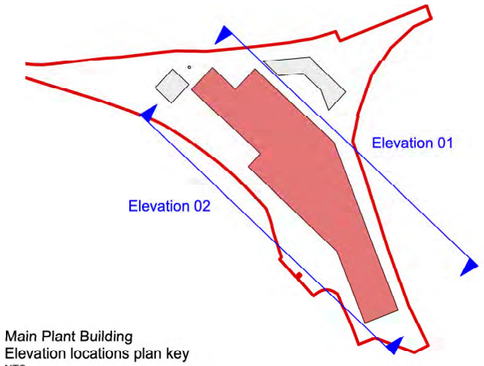
13.3 A copy of the Statement of Common Ground, as referenced in Natural England's letter dated 1 December 2021, is submitted as a stand alone document.

14 Conclusions

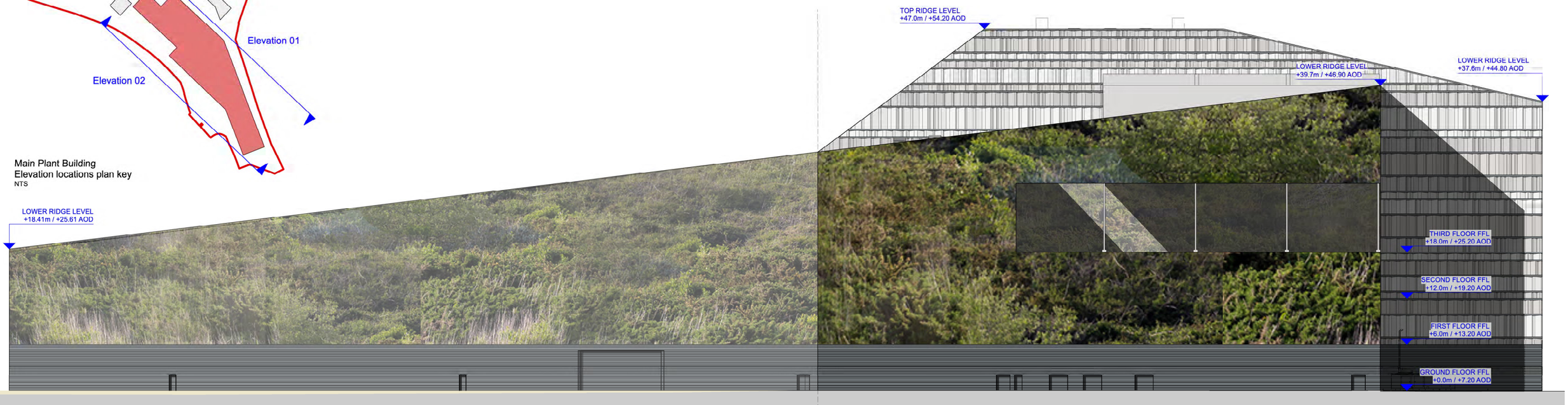
14.1 This second ES addendum has provided the further environmental information formally requested by Dorset Council on 26 January 2022 under Regulation 25 of the EIA Regulations in relation to the proposed Portland ERF. Matters raised in the council's letter that are outside the scope of the EIA have been addressed in stand alone documents within the submission.

14.2 The further information provided in this second ES addendum has not resulted in any changes to the significant residual effects of the proposed ERF alone that were assessed in the original ES. The only change to the assessments of cumulative effects relates to economic effects. The slight to moderate, significant beneficial cumulative effect identified in the original ES as a result of increased employment and business opportunities with developments in the surrounding area has reduced to slight and not significant as a result of the removal of the 1997 and 2010 Harbour Revision Order development from the assessment.

14.3 No other new or different significant residual effects or cumulative effects have been identified for any of the other ES topics as a result of the further environmental information. Therefore, with the exception of the above change to the findings of the economic cumulative effects assessment, the conclusions of the ES remain valid and unchanged.



Main Plant Building
Elevation locations plan key
NTS



01 Elevation 01 (north-eastern)
1:250 @ A1 / 1:500 @ A3

Cranked elevation | True elevation

Dashed lines denotes external urea tank & silos infront of south-western elevation

02 Elevation 02 (south-western)
1:250 @ A1 / 1:500 @ A3

True elevation | Cranked elevation

TERENCE O'ROURKE

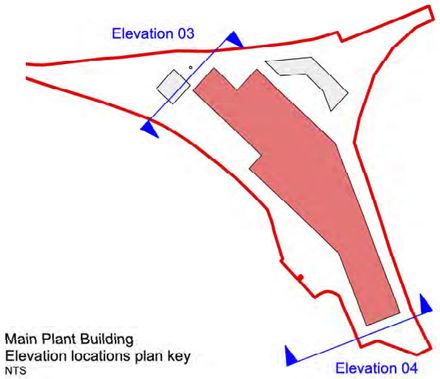
Portland energy recovery facility

Environmental statement
Second addendum

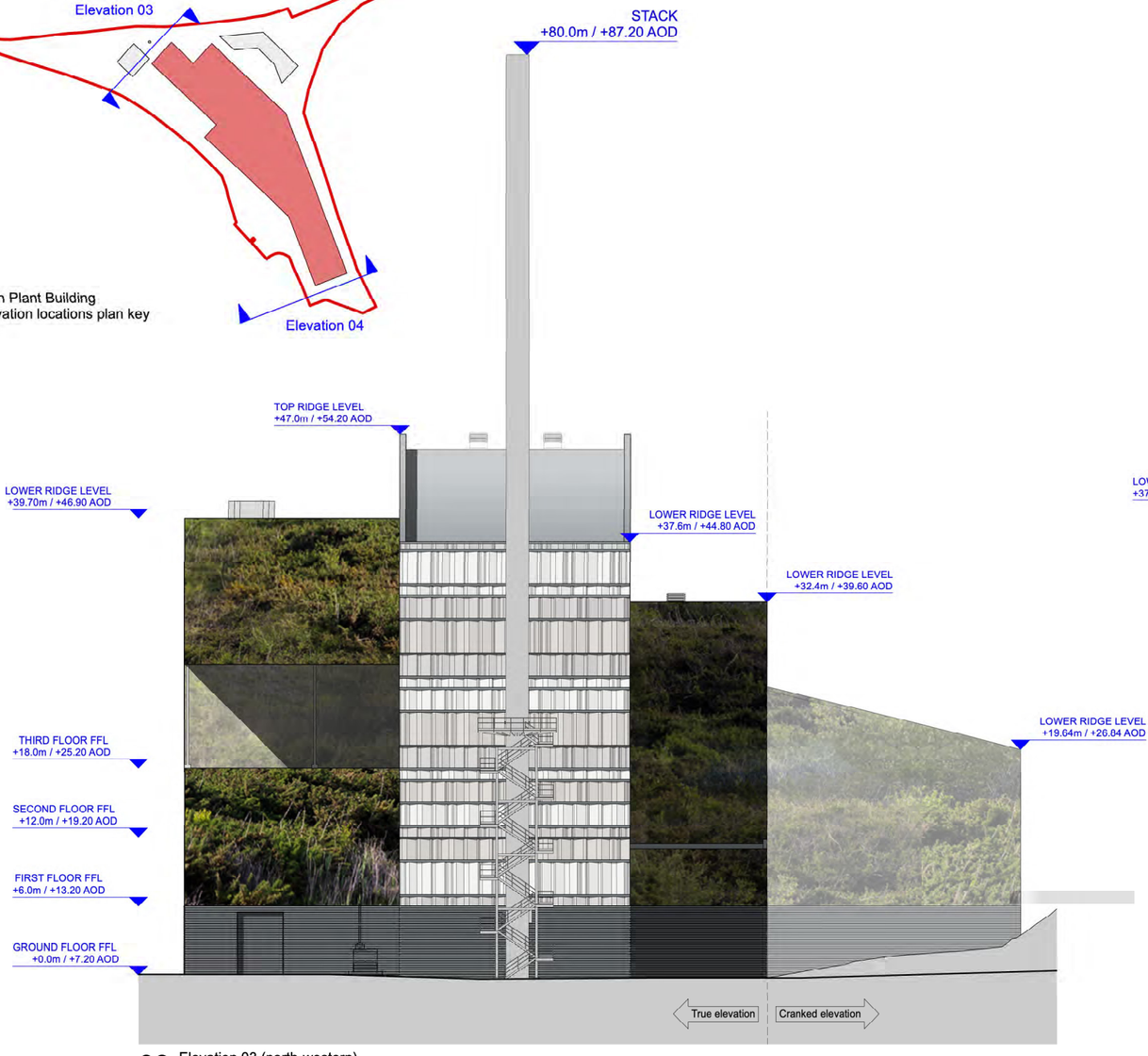
0 5 10 15 20 25 M
Scale to be used for planning purposes only

Figure NTS.4a/2.5a
Proposed elevations: ERF building north eastern and south western

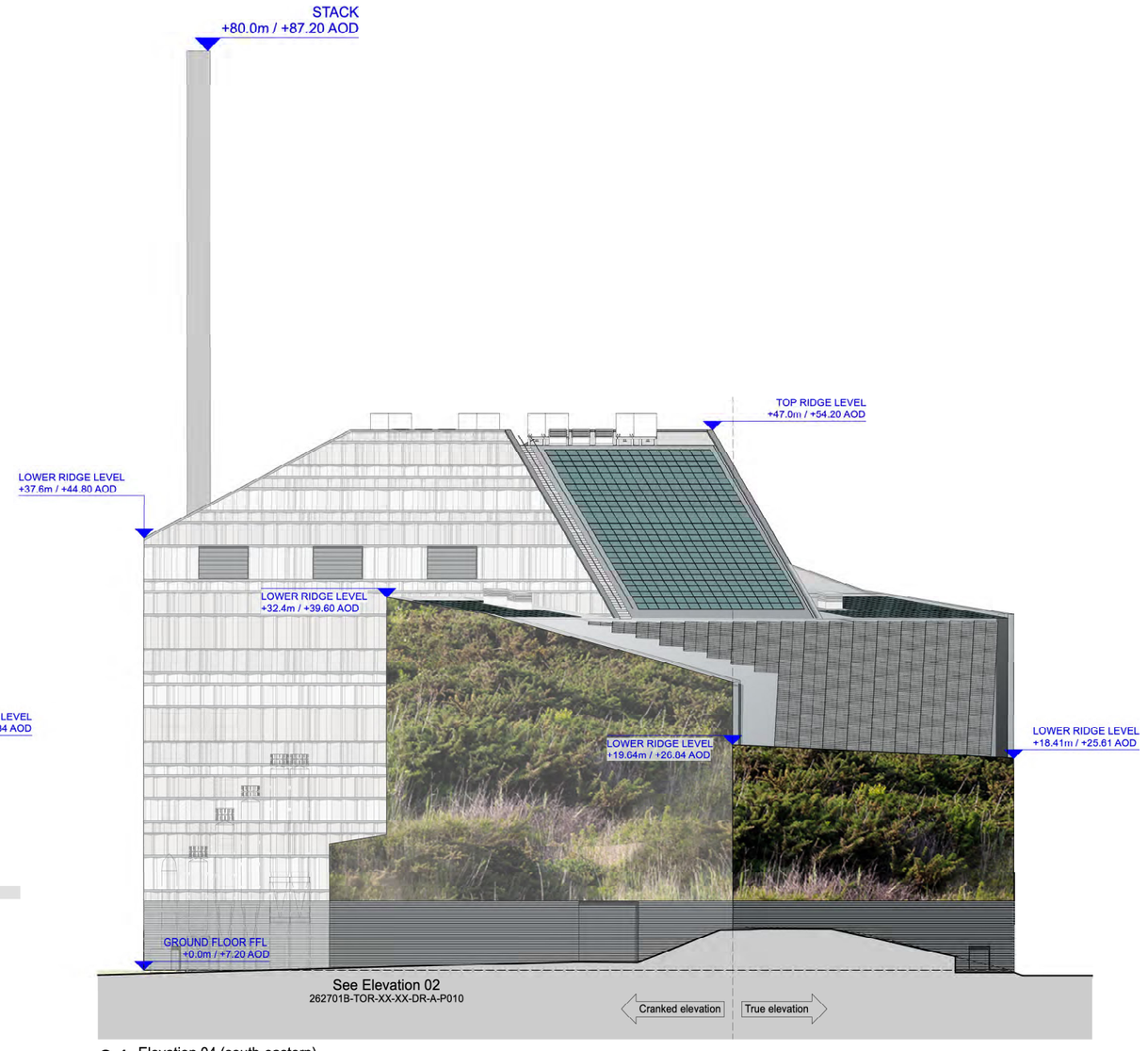
POWERFUEL



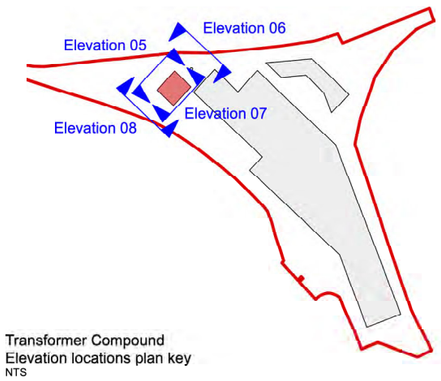
Main Plant Building
Elevation locations plan key
NTS



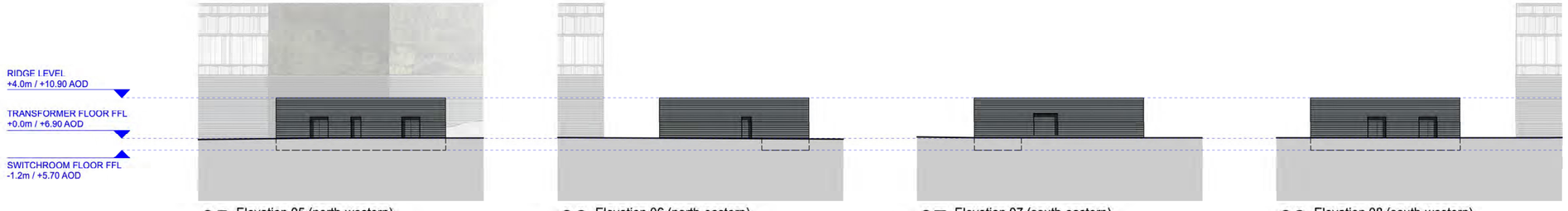
03 Elevation 03 (north-western)
1:250 @ A1 / 1:500 @ A3



04 Elevation 04 (south-eastern)
1:250 @ A1 / 1:500 @ A3



Transformer Compound
Elevation locations plan key
NTS



05 Elevation 05 (north-western)
1:250 @ A1 / 1:500 @ A3

06 Elevation 06 (north-eastern)
1:250 @ A1 / 1:500 @ A3

07 Elevation 07 (south-eastern)
1:250 @ A1 / 1:500 @ A3

08 Elevation 08 (south-western)
1:250 @ A1 / 1:500 @ A3

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Portland energy recovery facility

Environmental statement
Second addendum

0 5 10 15 20 25 M
Scale to be used for planning purposes only

Figure NTS.4b/2.5b Proposed elevations: ERF building north western and south eastern and transformer compound

POWERFUEL

- Site boundary
- Heliport, Coode Way, Portland
- Redundant Buildings at Bumpers Lane
- Disused Quarry Works Stockyard, Bottom Coombe, Park Road
- Ferrybridge Inn, Portland Road
- Plot M1B, Hamm Beach Road
- Plot X, Mulberry Avenue
- Southwell Primary School, Sweethill Lane
- Verne Common Road and Ventnor Road
- 1997 HRO works
- Ocean Views, Hardy Complex, Castle Road
- Royal Manor Arts College

0 620 m

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Figure NTS.7/3.2
Locations of developments considered in the cumulative effects assessment

POWERFUEL