



Portland  
energy recovery  
facility

Facility utilities assessment  
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POWERFUEL PORTLAND

ENERGY RECOVERY

FACILITY UTILITIES ASSESSMENT

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- Appendix 3 - Indicative Utilities Plan

## 1.0 Introduction

### Context

- 1.1. This report has been prepared by Skyfall Energy Ltd, on behalf of Powerfuel Portland Limited, in support of their planning application to Dorset Council for a proposed Energy Recovery facility (ERF) on land at Portland Port, Portland, Dorset (the Port).
- 1.2. The 6.29 ha site lies on the north eastern coast of the Isle of Portland, within Portland Port, approximately 600m east of the villages of Fortuneswell and Castletown (The Site).
- 1.3. The Site comprises two elements: the 2.14 ha site for the ERF building and 4.15 ha of cable routes to the electricity substation off Lerret Road and to the berths at Queens Pier and Coaling Pier. The Site in its local context is provided in Appendix 1.
- 1.4. This Utilities Assessment is to accompany the proposed full planning application.
- 1.5. The purpose of this report is to evaluate the existing and proposed services with respect to the impact of the proposed ERF and access on potential diversionary works and potential reinforcement and capacity constraints.

### Development Proposals

- 1.6. The development proposals are the provision of waste reception, fuel delivery, boiler, flue gas treatment, flue stack, residue handling systems, steam turbine, heat take-off for district heating, primary substation, and ancillary equipment.
- 1.7. Vehicular access to the site will primarily be provided from the A354 Portland Beach Road. A secondary access by sea will also be provided by utilising a 50-tonne berth roughly 250 meters to the east of the proposed ERF.
- 1.8. The proposed Masterplan showing the layout of the proposed ERF is provided in Appendix 2.

## Scope

1.9. This report will address the following:

- Describe existing service information from the Statutory Utility Companies.
- Describe existing service information received from Portland Port Authority.
- Establish and define any potential interactions the proposed ERF may have with the existing apparatus either operated by or owned by Statutory Utility Companies or Portland Port Authority.
- Define the proposed utility load requirements to support future use.
- Establish the infrastructure requirements necessary to provide new utility services for the proposed ERF.
- Identify critical issues and key risks.

## Principles of Assessment

1.10. This report has been produced following a desk top study and site walkover.

1.11. Utilities providers were contacted to confirm the position of their existing apparatus and to identify future requirements and, wherever possible, costs associated with the future supply to the proposed ERF.

1.12. This report summarises information supplied by each of the key utility companies operating networks in the area if the proposed ERF. The utilities under consideration include:

- Potable Water Supply;
- Telecommunications;
- Gas; and
- Electricity.

1.13. No invasive investigative work has been carried out; therefore, the actual positions of mains and services must be verified onsite before construction work is undertaken in accordance with all relevant guidelines and regulations.

1.14. Following Planning Permission being granted and once the project has entered the detailed engineering design stage, more detailed responses, including capacity assessment requests and investigations, and quotations for increase in capacity to serve the proposed ERF will be sought if required.

## Affected Utilities

1.15. The following utilities have provided asset details of their network. These assets are either directly affected by the proposed ERF or are in the immediate vicinity. The Indicative Utilities Plan in **Appendix 3** shows the indicative location of these utilities.

Provider	Type
Wessex Water	Water Mains
VOIP Unlimited	Telecoms/Cable
Southern Gas Networks	Gas
Smart metering Services	Gas supply
Scottish and Southern Electricity	Electricity

## Exclusions

1.16. This report does not cover drainage proposals, surface water and foul water drainage infrastructure but further details can be found within the supporting Flood Risk Assessment/Drainage Strategy. Asset Plan information relating to these existing assets have been included for completeness.

## Liability

1.17. No warranty is given by Skyfall Energy Ltd on the quality, accuracy or completeness of information provided by the Statutory Utility companies. All plant locations and explanatory descriptions are indicative only and must only be used as a guide. It is the responsibility of the site operative to identify and locate apparatus prior to construction activity.

## 2.0 Potable Water Supply

### Existing Assets

- 2.1. Wessex Water are the regional provider to the Site.
- 2.2. Asset records show water apparatus that indicates that a Potable Water supply is available onsite.
- 2.3. A buried 10" diameter Cast Iron (CI) water main runs through the site from Main Road onto Incline Road, along the northern boundary of the site on Canteen Road where it then follows the old alignment of Incline Road through the middle of the site re-joining Incline Road at the southern end of the site.
- 2.4. This 10" diameter water main will be able to supply a minimum of 15m head (1.5 Bar) as per Wessex Water's minimum pressure policy.
- 2.5. A set of 3" diameter CI water main spurs from the main supply pipe (as described in 2.3) are present in the middle of the site feeding into the now demolished buildings.
- 2.6. A 4" diameter CI water main spur is shown from the main supply pipe (as described in 2.3) to the layby and now disused bridge to the west of Incline Road.
- 2.7. A further spur pipe is indicated at the southern end of the site branching off from Incline Road onto Balaclava Road with a T heading north and south onto Balaclava Road and then stopping. The northern branch feeds onsite fire hydrants and the southern feeds other port tenants.
- 2.8. It is anticipated that the northern section of the spur in 2.7 is no longer used. The southern section is likely to feed the commercial properties to the south of the site along Balaclava Road.

### Diversions/Adjustments

- 2.9. Given the location of the existing mains and the proposed ERF the main 10" diameter CI pipe (as described in 2.3) will need to be realigned from the old Incline Road route to the new Incline Road route following the existing telecommunications cable route (as described in 3.2/3.3)
- 2.10. The now defunct 3" spurs in the centre of the site can be removed.
- 2.11. The 4" spur from the water main to the layby and now disused bridge will need to be adjusted to fit the new layout of the 10" pipe (as described in 2.8).
- 2.12. The northern spur onto Balaclava road at the southern end of the site will need to be investigated further on site by way excavations to ascertain its exact location and status. If it proves to no longer be in use it will need to be removed.
- 2.13. Wessex Water will be contracted to undertake any relocation works.



## Future Development Supply Requirements

- 2.14. Wessex Water have been consulted and are assessing the proposed EFR and the local potable water network.
- 2.15. A detailed capacity assessment from Wessex Water is underway to assess the capacity of the existing network and confirm extent of off-site upgrade works, if any, together with the associated costs and timescales that may be required in order to meet the supply requirements of the proposed ERF.
- 2.16. As part of the proposed ERF a new connection will be applied for with Wessex Water to provide the required water supply to an onsite point of connection.
- 2.17. Given the options available, it is anticipated that there will be no major technical issues with providing potable water to the proposed ERF.

## 3.0 Telecommunications

### VOIP Unlimited

#### *Existing Assets*

- 3.1. Port utilities and services records indicate existing telecommunications underground apparatus running alongside the eastern edge of Incline Road. There are no overhead assets on or around the site.
- 3.2. This existing cable has been located on both the supplied utilities and services plans as well as on site by way of the inspection pits and confirmed to be in the indicated locations.
- 3.3. Prior to any construction or enabling works the exact location of this cable will be established and marked in order to prevent any unintentional interference with it.
- 3.4. The cable is owned by VOIP Unlimited and there are believed to be no other active telecommunications assets on the site.

#### *Diversions/Adjustments*

- 3.5. Given the location of the existing assets, there should be no requirement for signification diversions to the existing telecommunications cables in order to enable the proposed ERF.
- 3.6. However, it is possible that minor service diversion or protection works will be required to maintain a suitable level of protection to services at proposed site accesses and during the installation of any proposed pavements, verges, or barriers. This will be considered in more detail at the appropriate stage of the detailed engineering design process.

#### *Future Development Supply Requirements*

- 3.7. It is proposed to service the site from the existing telecommunications infrastructure that runs adjacent to Incline Road using additional connections and cabling as necessary to service the facility. At the detailed engineering design stage VOIP Unlimited will be approached to establish how new connections will be made and whether network reinforcement work will be required to serve the proposed ERF.
- 3.8. If a connection to the existing VOIP Unlimited cable is not possible the installation of a new telecommunications cable may be required, likely to be undertaken by Openreach.
- 3.9. It is likely Openreach can provide Fibre to Premise capabilities to the proposed ERF, however the cost of supply can only be provided on receipt of a detailed site layout.
- 3.10. Openreach has a "Universal Service Obligation" to provide network to the site boundary at their expense. Onsite civil engineering costs would be borne by the Developer. It would be prudent therefore to provide Openreach apparatus as an absolute minimum.
- 3.11. Generally, Openreach finance offsite network reinforcement requirements to a limit, although offsite reinforcements are unlikely to be required on this proposed ERF.

## 4.0 Gas

### Existing Assets

- 4.1. Southern Gas Networks (SGN) is the primary gas transporter for the area.
- 4.2. There are no Gas Distribution assets on or adjacent to the proposed site.
- 4.3. The nearest Medium Pressure Gas Main is located 0.5km away from the site within the boundary of HMP The Verne and serves as the main supply to HMP The Verne.
- 4.4. The nearest Low-Pressure Gas Main is located 0.6km away from the site on Castletown and feeds the local domestic residences in its immediate surrounds.

### Proposals

- 4.5. The locations of both supply pipes (as described in 4.3 and 4.4) mean a connection would be technically challenging to accomplish due to both their locations and the elevation changes between the pipes and the site.
- 4.6. A budget proposal has been provided for a gas network connection for the proposed ERF.
- 4.7. This budget proposal includes prohibitive lead time for the installation of the supply network apparatus as well as the cost makes the use of direct grid supply gas to the site unviable both from a financial and build timetable perspective.
- 4.8. In order to avoid this costs and time delays, an onsite auxiliary fuel storage tank will be installed that will be able to provide the facility with the required stand by fuel volumes to ensure Facility Start Up and Shut Down as well as to provide combustion stabilisation during operation.
- 4.9. This onsite tank will be refilled periodically via road gas tanker as and when it is required for facility start up and shut down with minimal usage during normal operating.
- 4.10. This proposed auxiliary fuel storage tank will be located separate from the main plant area at the eastern edge of the site, as shown on the site layout, Appendix 2, location 22. The exact dimensions and capacity of which will be determined during detailed design.

## 5.0 Electricity

### Existing Assets

- 5.1. Scottish and Southern Electricity (SSE) are the regional statutory provider for the Site, Port and surrounding area.
- 5.2. Located to the north of the site adjacent to Canteen Road is an SSE 11kV substation that distributes 11kV power and Low Voltage power to the surrounding port structures and tenants.
- 5.3. Asset records obtained as part of this assessment identified the presence of a buried 11kV cable following the old route of Incline Road.
- 5.4. Two substations located on the middle and western end of the Inner Breakwater are fed by a further set of 11kV cables buried in Lower Breakwater Road parallel with the northern edge of Canteen Road and onto the Inner Breakwater.
- 5.5. A buried 11kV cable connects the Canteen Road substation to the Global Marine substation on Incline Road. This cable is routed west from the Canteen Road substation, along northern edge of Canteen Road, then north along Incline Road.
- 5.6. SSE asset maps also indicate the presence of eight buried Low Voltage cables formerly feeding the now demolished structures on the site area from the Substation north of Canteen Road.
- 5.7. These low voltage cables have been disconnected and not been used in several years since the demolition of the onsite buildings they supplied, whilst they are indicated on the SSE asset maps it is unclear if they remain in place or were removed during the demolition works, each cable will need to be located and tested to ensure they are not live prior to any works being undertaken in their vicinity.
- 5.8. A small, Glass Reinforced Polymer (GRP) substation housing is also present on the eastern edge of Balaclava Road fed by the cable referenced in 5.9.
- 5.9. A Port owned Low Voltage cable runs from the Canteen Road substation, along the route of Balaclava Road feeding the GRP substation housing on Balaclava Road (as described in 5.8).
- 5.10. There are currently streetlights along the northern edge of Canteen Road and the western edge of Incline Road supplied by Port owned low voltage cabling.

### Diversions/Adjustments

- 5.11. There is one area where it is considered that diversionary works to SSE assets will be necessary.
- 5.12. The current buried 11kV cable running from the substation north of Canteen Road that follows the alignment of the old route of Incline Road through the middle of the site, north to south (as described in 5.4), will need to be repositioned to follow the new alignment of Incline Road to the west of the site.
- 5.13. This cable will follow the same route as the repositioned telecommunications cable (as described in 3.1/3.2).
- 5.14. The now disused associated low voltage assets being supplied by the Canteen Road substation (as described in 5.8) will be disconnected and removed during these repositioning works.

- 5.15. The Port owned low voltage cable (as described in 5.9) will need to be rerouted out of the site, following the route of Incline Road into the southern portion of the site.
- 5.16. The GRP substation housing (as described in 5.8) will need to be relocated on the site to the southern portion of the site prior to the commencement of development activities and will be fed by the relocated Low Voltage cable (as described in 5.15).
- 5.17. These new cable alignments (as described in 5.13 and 5.15) as well as the relocation of the GRP substation (5.16) will be undertaken by Portland Port Authority in conjunction with SSE, where necessary, as part of the site enabling works prior to occupation by Powerfuel Portland.
- 5.18. It is anticipated that lowering or protection works may be required to facilitate the creation of new site accesses from Incline Road onto Canteen Road and Balaclava Road, involving the cables indicated in 5.4/ 5.5 as well as the cables indicated in 5.6 and 5.7.
- 5.19. The streetlight supply cable feeding the lights along the northern edge of Canteen Road will need to be precisely located on site prior to construction beginning and if needed relocated out of the road during the resurfacing of Canteen Road.
- 5.20. The streetlight supply cable for the lights on the western edge of Incline Road will only need to be relocated or adjusted, if their depth or location prove to conflict with any other asset relocations.

## Proposals

- 5.21. A new 33kV connection and metering point will be included within the facilities new purpose-built substation which will serve as the connection point for the proposed ERF to the SSE distribution network.
- 5.22. Two new 1.75km 33kV cables will need to be installed connecting the Portland ERF facilities substation (5.16) to the SSE supply point known as "Portland Substation" near Lerret Road.
- 5.23. This new cable will be buried following the route of Incline Road onto Main Road to the main Port gate. From there it will follow Castletown, Castle Road and Lerret Road to the substation.
- 5.24. The route of this connection cable is included within the site area shown in Appendix 1.
- 5.25. An order has been placed with SSE for them to undertake these connection works including the installation of this connection cable, from the new Portland ERF substation to the Portland Substation.
- 5.26. Given the location of the proposed facility, existing apparatus, grid status and the connection agreement between SSE and Powerfuel Portland there does not appear to be any technical reasons why a connection to the existing local electricity network cannot be made.

## 6.0 Summary and Conclusions

### Summary

- 6.1. This report has been prepared by Skyfall Energy Ltd, on behalf of Powerfuel Portland Ltd, in relation to the proposed ERF at Portland Port.
- 6.2. The purpose of this report was to assess the feasibility of providing the proposed ERF with all the necessary utilities.
- 6.3. This report has identified, from a review of utility service records, that not all major services (electricity, potable water, telecommunications) are located within the vicinity of the Site. Gas is unavailable at the site; therefore, an alternative method will need to be utilised (as described in 4.8, 4.9 and 4.10). All other utilities are available within the vicinity of the site.
- 6.4. Given the prevalence of existing infrastructure near the site, it is not anticipated that there should be significant problems with provision of new supplies to the site, with the exception of the gas mains supply which will require an alternative supply to be sought.
- 6.5. Once planning approval is granted, detailed plans and service loadings will be submitted to the relevant parties.
- 6.6. Due to the lack of availability of the gas mains near the site, the gas apparatus and provision of appropriate easements and development standoff parameters have not been applied to the proposed ERF layout.

### Conclusion

- 6.7. Each utility has been examined to assess the potential to connect to the proposed ERF, and the availability of connections has been identified, where possible, within the surrounding area.
- 6.8. Initial investigations have not highlighted concerns or engineering difficulties with servicing the proposed ERF with new water, electric or telecommunications.
- 6.9. However, there will need to be diversionary works undertaken prior to Powerfuel Portland beginning development works on site to the water and electric apparatus on site.
- 6.10. Initial investigations have highlighted concerns or engineering difficulties with servicing the proposed ERF with a gas supply, as such this has been removed from the development as a requirement and an alternative has been sourced.
- 6.11. Sufficient capacity with the remaining services networks is or can be made available in order to adequately serve the proposed ERF.
- 6.12. There is no reason, from a utility constraint or supply availability perspective that any services would conflict with the development or operation of the proposed ERF or its construction.

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## Appendices

Appendix 1 - Site Boundary Plan

Appendix 2 - Illustrative Masterplan

Appendix 3 - Indicative Utilities Plan

## Appendix 1 - Site Boundary Plan





## Appendix 2 - Masterplan



## Appendix 3 - Indicative Utilities Plan

