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Prepared for:
Egnedol Wales Limited



Planning Hearing Addendum Report

Rev 1



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1.0

Introduction

This document is provided as an Addendum to the Environmental Impact Assessment (EIA) and associated documentation submitted by Egnedol Wales Ltd (Egnedol) as part of an application for a Development of National Significance in November 2016.

Following a planning hearing in March 2017, and subsequent further direction by PINS in January 2018, a suspension was agreed between the Applicant and the Planning Inspector. The suspension has been implemented in order to allow the Applicant time to address concerns that were raised by Natural Resources Wales (NRW) and Pembrokeshire County Council (PCC) within their responses to the Planning Inspector in October 2017.

In preparing this Addendum, Egnedol have met with the relevant representatives from NRW and PCC and have agreed the scope of the outstanding issues and the format for this Addendum.

Comments received by Egnedol from NRW and PCC in April 2017 and those provided directly to the Inspector in September and October 2017 have been reviewed and utilised in the preparation of this submission.

In order to simplify the review process of this Addendum for the Inspector and for the regulators, simple clarifications or confirmations to points that were raised have been made in this report where possible, instead of updating every document submitted to date. Where a simple confirmation or clarification was not possible, revisions have been made to the relevant reports and drawings and the revised versions are included as Appendices to this Addendum.

Where a conflict arises between any previous submission and a clarification comment, information and documents contained in or appended to this Addendum, this Addendum document should be assumed to supersede previous statements made in the original application documents.

The format of this Addendum Report follows that agreed with NRW and PCC in April 2017 and has been subsequently updated to reflect the further responses made to Egnedol and the Inspector by both parties. A copy of the responses is included in Appendix A.

As a result of the work undertaken to provide this Addendum some additional surveys, reports and documents have been produced. These are contained in Appendices to this report and are referenced in the Addendum Report.

2.0

HRA

If a DNS project is likely to affect a European designated site or a European Marine site of nature conservation importance, then a Habitats Regulations Assessment (HRA) is required to enable the Competent Authority to make an Appropriate Assessment (AA) if required.

The Applicant is required to provide sufficient evidence to enable this assessment to be undertaken.

Applicants are advised to shadow the HRA assessment requirements that must be followed by the Competent Authority in order to ensure that the decision maker has sufficient evidence to make the decisions that are required with respect to granting of permission.

The original shadow HRA that was submitted by Egnedol with their application has been updated to address the concerns of NRW and PCC.

The updated shadow HRA is included in Appendix B.

The supporting information that has been used to inform the shadow HRA assessment is either presented within the EIA and associated documentation, or within this Addendum document and associated appendices.

The supporting information has not been replicated within the shadow HRA, only cited, so that the document only contains the impact assessment.

3.0

Marine

The site, which is a former industrial area that was utilized as an oil refinery and a Royal Navy Depot, lies within a zone designated for energy and port related activity.

The LDP zones the area for Energy and Port Related Activities

Most of the site lies within an Enterprise Zone, which has been specifically chosen to encourage creation of industrial employment.

The jetty and adjacent marine area lies within a zone which is designated by the Welsh Government as a Strategic Resource Area for Shipping and Harbour areas (Welsh Marine Planning Portal Marine Spatial Planning Maps). The Welsh Government is committed to encouraging port related development in this area as noted in Sector policy description: P&S_01: Ports and shipping (supporting) Proposals for ports, harbours and shipping activities in Strategic Resource Areas (SRAs) are encouraged. Relevant public authorities should, in liaison with the sector and other interested parties, collaborate to understand opportunities for the sustainable use of port and shipping Strategic Resource Areas in order to support the sustainable growth of the ports and shipping sector through marine planning.

A Marine License will be required before the main works can commence.

The existing jetty will be used to accept ships that will deliver fuel to the development and barges will be used to deliver process equipment to a separate temporary mooring location adjacent to the site.

The applicant has assessed the potential impact of the worst - case construction upon the marine environment.

A marine survey was completed to support the original submission in July 2017.

Following comments provided by both NRW and PCC, an additional marine seabed survey has been undertaken in March 2018, the purpose of which was to provide clearer video footage and images of the seabed which would increase confidence in the species and habitats identified as present.

The results and data collected from the additional marine survey, along with the comments received from NRW and PCC have been used to update the Marine EIA and shadow Marine HRA.

Copies the Marine EIA and shadow Marine HRA are included in Appendix B.

The assessments completed in the revised marine chapters have been carried forward into a composite revised HRA for the whole project.

3.1 Jetty Refurbishment

The Blackbridge site has an existing jetty which will require refurbishment to bring it back into operational use.

A worst case scenario with respect to the refurbishment works has been assumed in order to assess the potential marine environmental impact.

The worst case refurbishment works are:

- Removal and replacement of the jetty deck
- Removal and replacement of all jetty bracing. The existing bracing was originally installed above the sea bed. However, it now penetrates into the sea bed as a result of silt having built up around the structure. The existing bracing will be cut off at the sea bed in order to minimize disturbance. New bracing will all be installed above sea bed level.
- Installation of two new mooring dolphins
- Use of jack up barges to effect the refurbishment works
- Creation of a temporary mooring location/barge landing area to deliver process equipment to site

A detailed description of the proposed marine works is included in the Marine EIA chapter included in Appendix B.

The worst case scenario does not involve the removal of any jetty piles. A survey completed by the applicant, which was provided with the original application at EIA Appendix 3.11 - Jetty (Kaymac Report - Structural Inspection Survey of Milford Haven Jetty Piles), confirmed that the piles remain competent with minimal section loss.

4.0

Shipping and Barge Movements

An assessment of the existing jetty geometry and bathymetry confirms that vessels of 5000DWT could easily be accommodated.

The jetty structure will be refurbished to accept these vessels.

Three deliveries will be required each week.

The ship unloading machinery will have a throughput capacity of between 500 -1000 Tonnes per Hr. Assuming a worst case scenario, a vessel would take up to 10 hours to unload assuming 500T/hr offload speed and a cargo of 5000t of feedstock.

Unloading will be undertaken during daylight hours only.

The existing jetty, once refurbished, will satisfy the full requirement of biomass deliveries to operate the 49.9MW site.

Egnedol have held discussions with Milford Haven Port Authority (MHPA) about the use of the existing port facilities at Pembroke Dock for the delivery of process equipment. MHPA are supportive and happy to work with Egnedol as confirmed in their consultation response.

Some of the process equipment and plant will be sourced from abroad. This will be delivered in containers to Pembroke Dock, where it will be offloaded.

Shallow draft barges will be used to bring equipment, and where practicable construction materials, across from Pembroke Dock to the Blackbridge site where they would be moored adjacent to the site so that they can be off-loaded by crane.

The shipping and barge proposals, along with the associated ecological impact assessments and surveys are discussed within the Marine EIA and shadow Marine HRA included in Appendix B.

5.0

EMP and CEMP

An updated Ecological Management Plan (EMP) is provided as Appendix C to this document.

Egnedol believe that the revised EMP addresses all of the comments made by NRW and PCC.

The Applicant notes NRW's comment that, an EMP should be secured by condition.

Egnedol would be happy to accept a suitably worded pre commencement condition, as proposed by NRW, and acknowledge comments that mitigation relating to construction activities would be better located within a Construction Environmental Management Plan (CEMP) which could also be secured by a condition attached to Planning Permission..

We understand that a CEMP can also be secured by condition as proposed by NRW.

6.0

Lighting

New lighting will be required at the development to facilitate safe operation and commuting of employees.

No Lighting will be installed within the greenhouses or within the field in which they are located.

Construction work will be confined to daylight hours.

Following concerns raised by NRW and PCC, revised lighting plans have been produced including light contours to demonstrate the light spill across the site. The lighting plan will be adopted for both construction and operation of the site.

The lighting scheme has been developed using British Standards and following review of the Bat Conservation Trust's lighting guidance, with full knowledge of the sensitive ecological designations within the site.

A copy of the lighting plan is included in Appendix D.

The lighting scheme has created a safe lit corridor for workers to move around the site, whilst also maintaining a broad continuous dark corridor across the majority of the site and all areas which are considered to be sensitive. These include:-

- All site tunnels
- The stone arch
- The watercourse to the south of storage building 4
- The cliff to the north of building 1 and 2
- All woodland to the east of building 4
- The site access road to the East/ Northeast of Blackbridge

Revised drawings are contained in the lighting report included in Appendix D and Appendix E showing lighting column locations, heights and iso-contours of the modelled light spill.

The applicant has made the following main modifications with respect to lighting:

- Removal of the lights request by NRW and updating of drawings SK02 and SK03
- Updating elevation of drawing to show existing windows blocked up and confirmation that the roller shutter doors on the Northern elevation of the building will remain closed during night time except in case of emergency.

There will be no light spill from windows in buildings 1-3 onto the cliff to the North of these buildings. The original proposal included windows on the northern elevation which have been removed following comments received from NRW and PCC. An updated elevation plan of HG-15-07-P07 is included in Appendix E.

All lights will be suitably cowed, or otherwise have their light spill controlled such that they illuminate the development site only, in line with the comments received from NRW.

7.0

Conveyors

Conveyor systems will be utilised to transport feedstock from the Jetty to Building 4 and from Building 4 to other areas of the site.

The conveyors will be fully enclosed and will generate very low levels of noise. The conveyors will run within an acoustically insulated surround, with the conveyor drive gear located away from sensitive receptors, within its own acoustically insulated enclosure.

As the conveyors are fully enclosed, the risk of dust generation is completely eliminated.

Conveyor Routes

The conveyor routes and elevations from the Jetty to the storage building and from the storage building to the process buildings are shown in scaled drawings EGW-01-077, EGW-01-094 and EGW-01-095 included in Appendix E.

The routes have been chosen to optimise the distance between the conveyor and sensitive receptors, while maintaining operational functionality.

During the planning hearing, NRW and PCC were particularly concerned about the design and location of the conveyors at Storage Building 4, as this is located adjacent to the tunnels and stone arch which contain bat roosts.

The conveyor delivering feedstock from the ships to Building 4 will run at ground level along the jetty and then will rise to an elevation of 6m when it meets the land. The conveyor level will then increase so that it enters the eaves in the western elevation of Building 4. This is shown on Drawing EGW-01-077 contained in Appendix E.

Conveyors leaving Building 4 will do so at ground level and will rise to 6m to allow free vehicle and pedestrian movement beneath them.

All conveyors will be at or above ground level.

Due to the proposed arrangement of the conveyors, the ecological buffer zones proposed around the site, including Building 4 will not be affected.

Conveyor Properties – Lighting

The conveyors will not require external lighting.

Conveyor Properties – Noise

The conveyors will be housed within sealed acoustic enclosures.

All of the drive motors, the dominant noise source associated with the conveyors, will be housed within their own acoustic enclosures.

The proposed locations for the drive motors are shown on drawing EGW-01-109 included in Appendix E.

The accepted Noise level for a conveyor is typically Leq 76 dBA at 33 feet (11m) from the drive motor and Leq 53 dBA at 33 feet (11m) from the rollers (DEFRA 2006).

All tunnels and the stone arch are in excess of 80m from any of the proposed conveyor drive motor locations. The existing background noise at the nearest sensitive receptor to the drive motors is 44.8 dB as shown by Monitoring Location 7 in the Noise Chapter of the original EIA submitted.

In addition to noise attenuation that will be by acoustic enclosure, which has conservatively been assumed to offer a 10dB reduction, there will be additional barrier attenuation from topography or buildings (10db reduction) and distance attenuation (~18dB at 80m).

Noise levels from the motors are therefore expected to fall well below existing background levels at the nearest sensitive receptors on site.

Assuming a conservative 10dB reduction to the DEFRA figure of Leq 53 dBA at 33 feet to account for the acoustic enclosure, the actual noise levels for the conveyor is conservatively expected to be around 43 dB.

Vibration from Conveyors

Manufacturers of the conveyors confirm that there will not be any discernible vibration at ground level or at any of the sensitive receptors due to damping/suspension of parts and anti-vibration mounts being employed in the design of the system where required. The additional noise enclosure that will be installed around the conveyor will further reduce any small vibrations that could be produced.

8.0

Drainage and Discharges to the Milford Waterway

Existing situation

A stream channel currently runs from the woodland at the east of the Blackbridge site and is partially culverted under the development platform to an outfall in the revetment adjacent to the jetty.

The channel is fed by two reservoirs located to the east of the Blackbridge site, which were originally constructed as part of the sites former use. The reservoirs are fed by small streams in the area which are outside Egnedol's ownership.

Surface water falling on hardstanding within the site either runs off directly into the Haven or is captured by existing drains and discharged to the Haven through the existing drainage network.

Construction

There will be no direct or process discharges to the Pembrokeshire Marine SAC during construction.

A Construction and Environmental Management Plan will be prepared which will outline how all surface water and drainage will be managed during construction works.

NRW suggest in their correspondence of 20 October 2017 that a CEMP be secured by condition, Egnedol would be happy to accept this condition.

On the main development platforms at Blackbridge and Waterston, existing drains are already present.

Prior to commencement of the work, the exit points from the existing drains that could potentially be impacted by runoff from the construction, will be identified and sealed.

Rainfall collected by the existing system will be directed via silt busters and 3 stage interceptors to temporary settlement lagoons prior to discharge to the existing drainage system.

The water quality objectives to be achieved prior to release of incidental rainfall to the existing surface water drainage system will be identified and agreed in the CEMP.

Operation

There will be no direct discharges of process water to the Pembrokeshire Marine SAC during operation.

A new surface water drainage system will be installed to replace the existing network.

As all process operations will be undertaken in enclosed buildings and utilizing enclosed conveyors, the potential risks to surface water are limited to leaks or spills.

Process liquids will be in doubled skinned and/or banded tanks, the details of which will be agreed and specified in the Environmental Permit to operate the site.

The only remaining potential risk to surface water is from spills of petroleum hydrocarbons or oils from vehicles using the site.

Surface water will be directed to a 3 stage oil interceptor as a precaution, to remove petroleum hydrocarbons or oil present, before being discharged to the existing watercourses and culverts that serve the site

Water quality objectives required for the discharge will be established within the Environmental Permit for the site.

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Abstractions

No abstractions will be made from the Pembrokeshire Marine SAC during construction or operation.

9.0

New Access Road

A new piece of road will be constructed to link two sections of the existing access road between the eastern and western parts of the site.

A road design has been completed to determine the extent and footprint of the road and ancillary construction works.

The route is shown in drawing EG1-01-096 included in Appendix E.

Cross sections at regular chainage intervals and a cross section location plan are enclosed as Drawings EGW-01-087, EGW-01-088, EGW-01-089, EGW-01-090 and EGW-01-093 in Appendix E.

The chainage direction and intervals are described on drawing EG1-01-096.

A cross section of the proposed road construction detail has also been produced and is included in Appendix E as drawing EGW-01-110.

In addition to operational requirements for staff movements, improvement of the existing road is also required to allow access by all emergency services and construction equipment.

Ecological surveys along the proposed route have been completed and were used to assess the environmental impact of the construction and operation of the new access road and road improvements. These are discussed further in section 13.

No new lighting will be installed on the route of the road.

During operation, around only 3 to 4 two way vehicle movements are expected at each shift change, transporting workers from the Blackbridge site to the new car park at Waterston.

The site will operate on an 8 hour three shift pattern. It is currently expected that only one shift change will take place at night, with the other two taking place in the morning and afternoon/evening.

At night, additional vehicles movements around the Blackbridge site are expected to be limited to security patrols.

10.0

Service Corridor

A service corridor will link the Waterston and Blackbridge sites.

The service corridor will consist of a pipe rack structure with supports for the pipes, with some services being buried along the route where technically preferable.

A heat main will run along the service corridor and will be the largest diameter service in the service corridor.

A scaled plan showing the route is included as drawing EGW-01-001 in Appendix E.

The heat main lies within the road development footprint. A drawing showing the arrangement of the heat main and its configuration along the access road is included as drawing EGW-01-110 in Appendix E.

Heat will be recovered from the (BtEf) which will be used to heat water via a heat exchanger at the Blackbridge site. The hot water will be pumped up to the Waterston site via the service corridor, where a second heat exchanger will be installed. The heat exchanger at the Waterston site will then be used to heat the tanks used within the development before the cooled water is recirculated back to the Blackbridge site to be heated again.

The heat main will be a sealed system, similar to a district heating system and will comprise of pipes surrounded by insulation. The heat main will consist of 2 pipes, a send out pipe from Blackbridge to Waterston and a return pipe back to the Blackbridge site.

The pipe will be 500mm diameter, with 200mm of insulation (700m total diameter).

The service corridor will also carry the electricity export cable from the substation at Blackbridge to the start of the sub-haven borehole to the east of the BtEf.

The service corridor will also carry other utility services that will be required to link the Blackbridge site to the Waterston site. These will include telecommunications, water, electricity and gas. Where practical these services will be buried in line with the recommendations for utility services in the UK.

11.0

Pipework

In addition to the heat main/service corridor, over-ground pipework will be required around the BtEf.

A nitrogen fire suppression system will be installed and this will require a distribution pipe network.

A plan showing the location of pipework runs associated with the BtEf is included as Drawing EGW-01-100 in Appendix E.

The requirement for additional pipework may be identified during detailed design, but it is expected that this would run along the pipe tracks shown in drawing EGW-01-100.

12.0

New Footpath and Bridge

PCC Highways department requested that a new pedestrian access route be formed to the west of the site.

The proposed footpath will access the site via a new footbridge which will replace the existing derelict swing bridge over Castle Pill. The bridge will be retractable to enable boat access to the Pill and has been designed to be low level to minimize any visual impact. The new footbridge will sit upon the existing abutments, both of which are owned by the Applicant. The land to the east is owned by Milford Haven Port Authority who support the proposal and who have incorporated the proposal into their development plans for the site. This is supported by their letter to the Applicant dated 7th March 2017 (copy enclosed as Appendix M)

A drawing of the proposed footbridge structure is enclosed as drawing EGW-01-106 in Appendix E.

In addition to the above, the relocation or creation of a path along a more coastal route has been a long term objective of PCC. Consequently, and following a request from the PCC Highways Department, the Applicant has agreed to create a new permissive footpath which will link the Pembrokeshire Coastal Path located to the East of the Blackbridge site, with Milford Haven.

The path will cross castle pill via the new bridge that is being proposed. Egnedol's ownership ends at the far site of the bridge on the former Wards Yard site.

The proposed footpath is shown on drawing EGW-01-052 included in Appendix E. The path will be fenced off to ensure that pedestrians cannot access the development site.

The potential impact of the new footbridge on otters has been assessed. The assessment is included in Appendix F and concludes that there would be no adverse impact from construction of the new bridge.

13.0

Earthworks

There are 5 distinct areas of earthworks required to build the development. These can be summarised as:

1. Storage Building 4
2. Greenhouse Platforms
3. Exhaust Gas Condition / Algae Propagation / Feedstock Preparation areas
4. Access Road
5. Transformer Base

Detailed existing and proposed contours for each of the areas are included as Drawings EGW-01-079 to EGW-01-090 in Appendix G

Drawing EGW-01-093 in Appendix G shows the section locations.

Storage Building 4 Location

The location of Storage Building 4 is shown on the masterplan included in Appendix E.

The location of the Building 4 relative to the various ecologically sensitive sites around it is shown on Drawing EGW-01-098 in Appendix E.

In order to construct Building 4, rubble, fill and earth which has previously been deposited following the demolition of buildings associated with the former RNAD site, will need to be moved.

A stone arch feature lies to the north-west of the proposed storage building and has been shown to be important to bat habitat and used as a bat roost.

The rear of the stone arch comprises stacked large concrete blocks covered with soil. The voids between these blocks may provide suitable bat habitat and consequently investigation has been undertaken to identify the potential extent of this feature.

Following discussions with NRW, a trial pit exercise was completed under the supervision of a qualified ecologist to determine the extent of the blocks behind the stone arch and their position relative to Building 4.

The proposed corner of the Building 4 and the trial pit locations were located using surveying equipment.

Three trial pits were excavated around this location as shown on Drawing EGW-01-076 in Appendix E.

Blocks were encountered in the trial pits numbered 2 and 3, which were located closest to the blast wall. No blockwork was encountered in the trial pit 1 located further to the west of the blast wall.

Observations during the investigation suggest that the blocks arise from sections of the blast wall that have been cut off and stacked adjacent to the remaining wall section.

As no blockwork was encountered in trial pit 1, it is the view of the specialist ecologist that as a precautionary measure, Building 4 should be shortened by 10m, so that its end wall will avoid any blockwork and provide adequate distance from any voids which bats may be accessing to utilise for roosting.

The stone arch is located around 23m North-west of the closest building corner of the shortened building.

The earthworks in this area of the site will be completed under the supervision of a suitably licensed ecologist and in accordance with the EPSL that will be required.

Following removal of the fill material within the footprint of the building, a new retaining wall will be constructed to the east and north of the building to contain the residual fill and earth

The retaining wall will be a crib wall style, which will minimise the amount of fill which is required to be removed and will provide a “cliff” type feature down the back of the storage building which will promote bat commuting.

Existing and Proposed cross sections of the storage building are included as drawing EGW-01-086 in Appendix G.

An indicative section showing the storage building and proposed retaining wall is included as Drawing EGW-01-101 in Appendix E.

A 7m section of the blast wall is proposed to be removed, as outlined in the request for clarification received by the planning inspector.

The section of blast wall proposed to be removed is shown in drawing EGW-01-098 included in Appendix E and on plates 1-4 also included in Appendix E.

Lighting has been minimised around the Storage Building with only one light proposed, to illuminate an entrance doorway for employees. The light spill from this light fitting has been shown in greater detail in drawing EGW-01-092 included in Appendix E and is discussed further in the Lighting Report contained in Appendix D.

Greenhouse Platforms

The Greenhouse platforms will be provided by a simple cut and fill earthworks exercise within the field in which they are located.

As the field is on a slope, material excavated from one half of each plateau will be used to raise the level of the other half of each plateau to create a level surface.

We anticipate an approximate zero balance earthworks for this cut and fill exercise at this location

Cross sections of the plateaus are included as Drawings EGW-01-082, EGW-01-083 and EGW-01-084 in Appendix G.

Exhaust Gas Condition and Algae Propagation / Feedstock Preparation area

The earthworks in this area will be provided by a simple cut and fill exercise.

The cut depth at the northern boundary of this area will shelter the buildings and reduce their visible presence from surroundings receptors.

We anticipate an approximately zero balance for the earthworks cut and fill exercise at this location.

Cross sections of the plateaus are included as Drawings EGW-01-079, EGW-01-080 and EGW-01-081 in Appendix G.

Access Road

Reference should be made to Drawing EGW-01-096, in Appendix E

Cross sections showing the existing and proposed levels are included as Drawings EGW-01-087, EGW-01-088, EGW-01-089 and EGW-01-090 in Appendix G.

An assessment of the impact of the earthworks is discussed in the HRA.

Building 18

Building 18 is the transformer yard area.

This area comprises a section of fenced off hardstanding within which the site transformers will be located. The transformers will increase the voltage of electricity to 400 kv before it is transmitted to the National Grid.

The transformers require a sterile zone around them for health and safety purposes and the area does not denote the extent of the transformer itself.

Most of the area is currently flat hardstanding. However some earthworks will be undertaken to extend the hardstanding area slightly to the north.

Existing and proposed contours are provided on Drawing EGW-01-085 in Appendix G.

14.0

Atmospheric Emission Modelling (ADMS)

During the Planning Hearing of March 2017 PCC raised concerns that the potential impact of the development on two designated or proposed sites had not been fully assessed with respect to aerial emissions. These were:

- Skomer, Skokholm and the seas of Pembrokeshire SPA (proposed)
- West Wales Marine cSAC

Skomer, Skokholm and the seas of Pembrokeshire SPA

The Skomer, Skokholm and the seas of Pembrokeshire SPA is a proposed marine extension to the existing Skokholm and Skomer SPA, which is already designated to protect internationally important seabird breeding colonies.

The Skokholm and Skomer SPA lies more than 10km from the development site and was therefore not included in the original assessment.

Of the species for which seaward extensions are recommended, breeding populations of Puffin and Manx shearwater are qualifying interests of Skokholm and Skomer SPA. In addition, breeding Razorbill and Guillemot are component species of the seabird assemblage.

The extension that is being proposed is limited to areas on which the aforementioned species of the SPA are ecologically dependent, in this case for 'active behaviours' such as preening, bathing and displaying. Prior to dusk, during the breeding season, adult shearwaters assemble in flocks or 'rafts' on the sea surface between 1 and 10km from the colony shore. The rafts can consist of several thousand individuals.

When darkness falls, these 'rafting' birds fly to their burrows to feed their chicks, regurgitating partly digested fish (Brooke 1990). It is this rafting area that the extension is proposed to cover.

The proposed marine extension area does not necessarily need to include numbers of birds that meet the SPA selection thresholds, as it is an extension from the existing SPA on land, which already hosts qualifying numbers of Manx shearwater and puffin (McSorley et al. 2008, McSorley et al. 2003).

All available literature for this cSPA contains no threshold values for aerial emissions.

The cSPA has now been assessed within the HRA and was screened out with respect to aerial emissions as the proposed development will contribute less than 1% of the Critical Load for the site. In line with DEFRA/EA guidelines this is considered insignificant and does not require any further assessment either alone or in combination with any other projects.

A copy of the revised HRA is included with the submission.

West Wales Marine cSAC

The West Wales Marine cSAC overlaps a number of other SACs including parts of the Pembrokeshire Marine SAC which was assessed as part of the original submission.

The Pembrokeshire Marine SAC actually lies adjacent to the site boundary, while extending further to the east and west along the estuary.

The West Wales Marine cSAC is designated for the protection of Harbour Porpoise.

All available literature for this cSAC contains no threshold values for aerial emissions.

The West Wales Marine SAC begins to the west of the site near St Ann's Head, which is where it also first overlaps with Pembrokeshire Marine SAC.

Whilst it was originally anticipated that the assessment results calculated for the Pembrokeshire Marine SAC are equally valid and representative of the West Wales Marine SAC, it has now been included in its own right within the HRA assessment and was screened out with respect to aerial emissions as the proposed development will contribute less than 1% of the Critical Load for the site. In line with DEFRA/EA guidelines this is considered insignificant and does not require any further assessment either alone or in combination with any other projects.

Coastal Drift

Following comments from NRW, additional ADMS modelling has been undertaken to assess the impact of changing the basis of the model from that where buildings and complex terrain are the primary factors affecting the output, to an assumption that the coastal effects are a primary factor.

The coastline effect influences air dispersion characteristics when the following three factors are met:

- The wind is blowing onshore (from the sea to the land),
- The land is warmer than the sea,
- The meteorological conditions over the land are unstable (convective)

In order for the ADMS software to be able to assess these factors, additional meteorological data was required, in the form of the sea temperature (TSEA). This data was obtained from the met office from a buoy located at turbot bank. This data was then added to the model met data input and the pre-model validity checks undertaken to ensure that the factors noted above were met.

Data from additional modelling where Coastline effects are assumed to be the primary factor has been assessed against the existing results of previous modeling and is summarized in the Tables 14.1–14.12 below.

Review of the comparisons between existing ADMS data and the Coastline Data shows that the changes to short term model results are +/- 0-3 % and the changes to long term model results are +/- 0-0.9 %.

The difference between the two model 'setups' are insignificant.

Nox – Hourly Mean, 99.79th Percentile						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	200	9.84	4.92	6.31	3.16	-1.76
Res 2	200	10.30	5.15	4.54	2.27	-2.88
Res 3	200	5.05	2.53	4.67	2.34	-0.19
Res 4	200	6.57	3.29	6.66	3.33	0.04
Res 5	200	5.56	2.78	5.71	2.86	0.08
Res 6	200	3.53	1.77	3.61	1.80	0.04
Res 7	200	3.23	1.62	2.99	1.50	-0.12
Res 8	200	1.99	1.00	3.75	1.88	0.88
Res 9	200	1.42	0.71	2.35	1.17	0.46
Res 10	200	1.97	0.99	2.00	1.00	0.01
Res 11	200	4.13	2.07	3.98	1.99	-0.07
Res 12	200	2.77	1.39	2.88	1.44	0.06
Rec 1	200	3.13	1.57	4.65	2.32	0.76
Rec 2	200	1.70	0.85	2.83	1.42	0.57
Rec 3	200	5.11	2.56	4.77	2.39	-0.17
AQMA P	200	1.09	0.55	1.24	0.62	0.08
AQMA H	200	0.70	0.35	0.81	0.41	0.05

Table 14.1

SO2 – 15min Mean, 99.9th Percentile						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	266	13.10	4.92	9.17	3.45	-1.48
Res 2	266	14.20	5.34	7.37	2.77	-2.57
Res 3	266	7.06	2.65	7.91	2.97	0.32
Res 4	266	10.00	3.76	9.53	3.58	-0.18
Res 5	266	9.18	3.45	9.20	3.46	0.01
Res 6	266	5.08	1.91	5.10	1.92	0.01
Res 7	266	4.75	1.79	4.25	1.60	-0.19
Res 8	266	3.31	1.24	6.63	2.49	1.25
Res 9	266	2.27	0.85	3.46	1.30	0.45
Res 10	266	2.96	1.11	2.93	1.10	-0.01
Res 11	266	5.66	2.13	5.56	2.09	-0.04
Res 12	266	4.24	1.59	3.99	1.50	-0.09
Rec 1	266	4.69	1.76	7.81	2.94	1.17
Rec 2	266	3.09	1.16	5.12	1.92	0.76
Rec 3	266	7.73	2.91	8.35	3.14	0.23
AQMA P	266	2.38	0.89	3.03	1.14	0.24
AQMA H	266	1.57	0.59	1.89	0.71	0.12

Table 14.2

PM10 – Daily Mean, 99.41st Percentile						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	50	0.20	0.40	0.10	0.19	-0.21
Res 2	50	0.10	0.21	0.05	0.09	-0.11
Res 3	50	0.16	0.32	0.11	0.21	-0.11
Res 4	50	0.22	0.45	0.14	0.28	-0.17
Res 5	50	0.11	0.23	0.11	0.21	-0.02
Res 6	50	0.18	0.37	0.15	0.31	-0.06
Res 7	50	0.20	0.39	0.15	0.30	-0.09
Res 8	50	0.06	0.11	0.07	0.14	0.02
Res 9	50	0.04	0.09	0.04	0.08	-0.01
Res 10	50	0.07	0.14	0.05	0.09	-0.05
Res 11	50	0.16	0.32	0.11	0.22	-0.10
Res 12	50	0.08	0.16	0.06	0.11	-0.04
Rec 1	50	0.02	0.05	0.03	0.06	0.01
Rec 2	50	0.05	0.11	0.05	0.10	0.00
Rec 3	50	0.11	0.21	0.06	0.11	-0.10
AQMA P	50	0.03	0.06	0.03	0.06	0.00
AQMA H	50	0.02	0.04	0.02	0.04	-0.01

Table 14.3

PM2.5 – Annual Mean						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	10	0.05	0.50	0.03	0.27	-0.23
Res 2	10	0.04	0.40	0.02	0.16	-0.24
Res 3	10	0.05	0.48	0.03	0.30	-0.18
Res 4	10	0.06	0.61	0.04	0.43	-0.19
Res 5	10	0.03	0.34	0.03	0.28	-0.06
Res 6	10	0.06	0.58	0.04	0.38	-0.20
Res 7	10	0.06	0.62	0.04	0.36	-0.26
Res 8	10	0.01	0.14	0.02	0.18	0.04
Res 9	10	0.01	0.12	0.01	0.10	-0.01
Res 10	10	0.02	0.24	0.01	0.13	-0.11
Res 11	10	0.05	0.46	0.03	0.29	-0.17
Res 12	10	0.02	0.20	0.02	0.18	-0.02
Rec 1	10	0.01	0.09	0.01	0.12	0.03
Rec 2	10	0.01	0.12	0.01	0.12	0.00
Rec 3	10	0.03	0.32	0.02	0.17	-0.15
AQMA P	10	0.01	0.08	0.01	0.07	0.00
AQMA H	10	0.01	0.07	0.01	0.05	-0.01

Table 14.4

CO – 8 Hour Running Mean, 100th Percentile						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	10	0.0019	0.02	0.0015	0.01	0.00
Res 2	10	0.0024	0.02	0.0010	0.01	-0.01
Res 3	10	0.0013	0.01	0.0009	0.01	0.00
Res 4	10	0.0015	0.02	0.0014	0.01	0.00
Res 5	10	0.0012	0.01	0.0011	0.01	0.00
Res 6	10	0.0009	0.01	0.0008	0.01	0.00
Res 7	10	0.0008	0.01	0.0007	0.01	0.00
Res 8	10	0.0005	0.00	0.0006	0.01	0.00
Res 9	10	0.0003	0.00	0.0003	0.00	0.00
Res 10	10	0.0004	0.00	0.0004	0.00	0.00
Res 11	10	0.0010	0.01	0.0009	0.01	0.00
Res 12	10	0.0006	0.01	0.0007	0.01	0.00
Rec 1	10	0.0005	0.00	0.0009	0.01	0.00
Rec 2	10	0.0003	0.00	0.0004	0.00	0.00
Rec 3	10	0.0009	0.01	0.0010	0.01	0.00
AQMA P	10	0.0002	0.00	0.0003	0.00	0.00
AQMA H	10	0.0001	0.00	0.0001	0.00	0.00

Table 14.5

HCI – Annual Mean						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	750	0.05	0.01	0.03	0.00	0.00
Res 2	750	0.04	0.01	0.02	0.00	0.00
Res 3	750	0.05	0.01	0.03	0.00	0.00
Res 4	750	0.06	0.01	0.04	0.01	0.00
Res 5	750	0.03	0.00	0.03	0.00	0.00
Res 6	750	0.06	0.01	0.04	0.00	0.00
Res 7	750	0.06	0.01	0.04	0.00	0.00
Res 8	750	0.01	0.00	0.02	0.00	0.00
Res 9	750	0.01	0.00	0.01	0.00	0.00
Res 10	750	0.02	0.00	0.01	0.00	0.00
Res 11	750	0.05	0.01	0.03	0.00	0.00
Res 12	750	0.02	0.00	0.02	0.00	0.00
Rec 1	750	0.01	0.00	0.01	0.00	0.00
Rec 2	750	0.01	0.00	0.01	0.00	0.00
Rec 3	750	0.03	0.00	0.02	0.00	0.00
AQMA P	750	0.01	0.00	0.01	0.00	0.00
AQMA H	750	0.01	0.00	0.01	0.00	0.00

Table 14.6

Nox – Annual Mean						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	40	0.20	0.50	0.11	0.27	-0.23
Res 2	40	0.16	0.40	0.07	0.16	-0.23
Res 3	40	0.19	0.48	0.12	0.30	-0.17
Res 4	40	0.24	0.61	0.17	0.42	-0.19
Res 5	40	0.13	0.34	0.11	0.27	-0.06
Res 6	40	0.23	0.58	0.15	0.37	-0.21
Res 7	40	0.25	0.62	0.14	0.36	-0.26
Res 8	40	0.06	0.14	0.07	0.18	0.04
Res 9	40	0.05	0.12	0.04	0.10	-0.02
Res 10	40	0.10	0.24	0.05	0.13	-0.11
Res 11	40	0.18	0.46	0.12	0.30	-0.16
Res 12	40	0.08	0.20	0.07	0.19	-0.01
Rec 1	40	0.04	0.09	0.05	0.12	0.03
Rec 2	40	0.05	0.13	0.05	0.12	-0.01
Rec 3	40	0.13	0.32	0.07	0.16	-0.16
AQMA P	40	0.03	0.08	0.03	0.07	-0.01
AQMA H	40	0.03	0.07	0.02	0.05	-0.01

Table 14.7

SO2 – Hourly Mean, 99.73rd Percentile						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	350	10.20	2.91	7.23	2.06	-0.85
Res 2	350	12.80	3.66	5.62	1.61	-2.05
Res 3	350	5.96	1.70	5.58	1.60	-0.11
Res 4	350	7.76	2.22	7.95	2.27	0.05
Res 5	350	6.71	1.92	6.69	1.91	-0.01
Res 6	350	4.39	1.25	4.46	1.27	0.02
Res 7	350	3.97	1.13	3.71	1.06	-0.07
Res 8	350	2.45	0.70	4.58	1.31	0.61
Res 9	350	1.70	0.49	2.86	0.82	0.33
Res 10	350	2.44	0.70	2.38	0.68	-0.02
Res 11	350	5.10	1.46	4.89	1.40	-0.06
Res 12	350	3.40	0.97	3.58	1.02	0.05
Rec 1	350	3.85	1.10	5.15	1.47	0.37
Rec 2	350	2.07	0.59	3.48	0.99	0.40
Rec 3	350	5.82	1.66	5.37	1.53	-0.13
AQMA P	350	1.33	0.38	1.53	0.44	0.06
AQMA H	350	0.88	0.25	0.97	0.28	0.03

Table 14.8

PM10 – Annual Mean						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	40	0.05	0.13	0.03	0.07	-0.06
Res 2	40	0.04	0.10	0.02	0.04	-0.06
Res 3	40	0.05	0.12	0.03	0.07	-0.05
Res 4	40	0.06	0.15	0.04	0.11	-0.05
Res 5	40	0.03	0.08	0.03	0.07	-0.01
Res 6	40	0.06	0.14	0.04	0.09	-0.05
Res 7	40	0.06	0.16	0.04	0.09	-0.06
Res 8	40	0.01	0.03	0.02	0.04	0.01
Res 9	40	0.01	0.03	0.01	0.03	0.00
Res 10	40	0.02	0.06	0.01	0.03	-0.03
Res 11	40	0.05	0.12	0.03	0.07	-0.04
Res 12	40	0.02	0.05	0.02	0.04	0.00
Rec 1	40	0.01	0.02	0.01	0.03	0.01
Rec 2	40	0.01	0.03	0.01	0.03	0.00
Rec 3	40	0.03	0.08	0.02	0.04	-0.04
AQMA P	40	0.01	0.02	0.01	0.02	0.00
AQMA H	40	0.01	0.02	0.01	0.01	0.00

Table 14.9

SO2 – Daily Mean, 99.18th Percentile						
60m Stack		Buildings and Terrain		Coastal Model		
Receptor ID	Benchmark *ug/m3)	PC	Percentage	PC	Percentage	% Change
Res 1	125	3.32	2.66	2.65	2.12	-0.53
Res 2	125	3.57	2.86	1.36	1.09	-1.76
Res 3	125	2.96	2.37	2.00	1.60	-0.77
Res 4	125	3.48	2.78	2.91	2.33	-0.46
Res 5	125	1.84	1.47	1.74	1.39	-0.08
Res 6	125	2.87	2.30	2.13	1.70	-0.59
Res 7	125	2.88	2.30	1.80	1.44	-0.86
Res 8	125	0.99	0.79	1.22	0.98	0.18
Res 9	125	0.68	0.55	0.53	0.42	-0.12
Res 10	125	1.52	1.22	0.89	0.71	-0.51
Res 11	125	3.07	2.46	1.94	1.55	-0.90
Res 12	125	1.48	1.18	1.56	1.25	0.06
Rec 1	125	0.83	0.67	1.04	0.83	0.17
Rec 2	125	0.64	0.51	0.66	0.53	0.02
Rec 3	125	2.52	2.02	1.20	0.96	-1.06
AQMA P	125	0.41	0.33	0.47	0.37	0.04
AQMA H	125	0.34	0.27	0.35	0.28	0.01

Table 14.10

60m Stack								
Pollutant	Averaging Period	Percentile	Benchmark *ug/m3)	Buildings and Terrain		Coastal Model		
				PC	Percentage	PC	Percentage	% Change
NO _x	Hourly Mean	99.79	200	14.1	7.05	6.66	3.33	-3.72
	Annual Mean	-	40	0.304	0.76	0.018	0.05	-0.72
SO ₂	15 min. Mean	99.9	266	19.3	7.26	9.76	3.67	-3.59
	Hourly Mean	99.73	350	17.4	4.97	7.95	2.27	-2.70
	Daily Mean	99.18	125	5.37	4.30	3.1	2.48	-1.82
Particulates (as PM ₁₀)	Daily Mean	90.41	50	0.254	0.51	0.198	0.40	-0.11
	Annual Mean	-	40	0.076	0.19	0.045	0.11	-0.08
Particulates (as PM _{2.5})	Annual Mean	-	10	0.076	0.76	0.045	0.45	-0.31
CO (mg/m ³)	8 hour running mean	100	10	0.003	0.03	0.0015	0.02	-0.02
VOC (as benzene)	Annual Mean	-	5	0.101	2.02	0.046	0.92	-1.10
HCl	Hourly Mean	-	750	0.076	0.01	0.0046	0.00	-0.01

Table 14.11

Receptor	Parameter	Units	PC	Buildings and Terrain		Coastal Model		
				Critical Load/ Objective	Percentage	PC	Percentage	% Difference
Pembrokeshire Marine SAC	Nitrogen Deposition	kg N/ha/yr	0.20	20	0.99	0.198	0.99	0.00
	Acid Deposition (N)	keq/ha/yr	N/A	N/A	N/A	N/A	N/A	N/A
	Acid Deposition (S)	keq/ha/yr	N/A	N/A	N/A	N/A	N/A	N/A
Broomhill	Nitrogen Deposition	kg N/ha/yr	0.02	10	0.24	0.04	0.40	0.16
	Acid Deposition (N)	keq/ha/yr	0.001	0.86	0.12	0.003	0.35	0.23
	Acid Deposition (S)	keq/ha/yr	0.003	4	0.08	0.005	0.13	0.05
Limestone Coast - Angle Bay	Nitrogen Deposition	kg N/ha/yr	0.02	10	0.17	0.021	0.21	0.04
	Acid Deposition (N)	keq/ha/yr	0.001	0.22	0.45	0.001	0.45	0.00
	Acid Deposition (S)	keq/ha/yr	0.003	4.5	0.07	0.003	0.07	0.00
Castlemartin Range	Nitrogen Deposition	kg N/ha/yr	0.02	10	0.17	0.034	0.34	0.17
	Acid Deposition (N)	keq/ha/yr	0.001	0.86	0.12	0.002	0.23	0.12
	Acid Deposition (S)	keq/ha/yr	0.003	4	0.08	0.004	0.10	0.03
Castlemartin Corse	Nitrogen Deposition	kg N/ha/yr	0.03	10	0.30	0.036	0.36	0.06
	Acid Deposition (N)	keq/ha/yr	0.002	0.44	0.45	0.003	0.68	0.23
	Acid Deposition (S)	keq/ha/yr	0.004	4.4	0.09	0.004	0.09	0.00
Hook Wood	Nitrogen Deposition	kg N/ha/yr	0.05	10	0.53	0.037	0.37	-0.16
	Acid Deposition (N)	keq/ha/yr	0.004	0.14	2.86	0.003	2.14	-0.71
	Acid Deposition (S)	keq/ha/yr	0.007	1.57	0.45	0.004	0.25	-0.19
Castlemartin Coast	Nitrogen Deposition	kg N/ha/yr	0.02	10	0.21	0.037	0.37	0.16
	Acid Deposition (N)	keq/ha/yr	0.001	0.22	0.45	0.003	1.36	0.91
	Acid Deposition (S)	keq/ha/yr	0.003	4.5	0.07	0.005	0.11	0.04
Angle Peninsula	Nitrogen Deposition	kg N/ha/yr	0.01	10	0.11	0.02	0.20	0.09
	Acid Deposition (N)	keq/ha/yr	0.001	0.22	0.45	0.001	0.45	0.00
	Acid Deposition (S)	keq/ha/yr	0.001	4.5	0.02	0.003	0.07	0.04

Table 14.12

An Environmental Permit will be required to operate the facility and this will establish emission criteria. The Environmental Permit will ensure that the operator complies with Best Available Technology at the time of the application and that the emission is monitored.

15.0

GANT chart

NRW and PCC have requested an anticipated construction programme, detailing the types and proposed timings of works to be carried out.

A GANT chart was therefore prepared in July 2017.

Due to the suspension period granted for the application, the dates within the GANT chart are now unachievable with a number of key dates having passed.

NRW suggest that the GANT chart be conditioned in their correspondence of October 2017. Egnedol agree that, as the commencement date is currently unknown, a condition requiring a GANT chart is the most appropriate method for addressing this. We have however provided suggested amendments to the NRW GANT chart condition in section 18 of the Addendum.

The GANT chart should be agreed with NRW and PCC prior to commencement of any activities that could impact protected species and be in line with any EPSL granted for the site.

16.0

Protected Species

Bats

Draft EPSL

A draft EPSL has been prepared by the Applicant, which is attached as Appendix H to this Addendum.

The draft EPSL contains the survey data for the development, along with the impacts assessments and fully detailed mitigation proposals.

The Bat Survey data can be found in the draft EPSL contained in Appendix H of the Addendum. The data is located in Section C - Survey and site assessment on pages 9–62.

The complete mitigation proposals can be found in Section E Page 72-82 of the draft EPSL in Appendix H.

The HRA confirms that the implementation of the mitigation and the adoption of protocols detailed in the draft EPSL, will result in the development having No Likely Significant Effects.

NRW queried in their response of 8th September whether or not the biomass storage building had in fact been shortened to allow the majority of the blast wall to be retained. Whilst the Masterplan drawing EGW-01-001 confirms the dimensions in the text, this addendum includes drawing EGW-01-098 in Appendix E which is to scale and which shows that the storage building has been shortened from the original proposals to accommodate concerns from NRW and PCC with respect to protection of features associated with the Blast Wall arch.

Tree Survey

A tree survey was completed to identify potential bat roosts along the proposed access road. The results of the survey are included as Appendix J.

In comments of October 2017, NRW suggest that the mitigation measures set out in this report should be secure by condition and the Applicant would be happy to accept this.

Otters

Following comments received from NRW and PCC, an additional otter assessment was undertaken for the new access road to supplement the original survey work. The report outlining the survey and assessment is included in Appendix F.

The assessment reviewed the detailed route of the new access road with respect to otter habitats, presence and potential future impacts from operation.

The report suggested measures that would adequately mitigate for any potential impact.

Potential impacts from the new footbridge have also been assessed within the report dated March 2018 also included in Appendix F. The report concludes that the footbridge will not have an adverse effect on otters providing the mitigation proposed is implemented and the habitat shown in drawing EGW-01-106 is retained for otter use.

NRW suggest in their correspondence of 20th October 2017 that the mitigation outlined in this report and the original survey reports for otters should be secured by condition and the Applicant would be happy to accept this.

Badgers

An updated report outlining the badger survey is included in Appendix K.

The survey identified that all of the badgers on the site are part of one colony. Consequently the proposed locations of the new sets have been confirmed and it is proposed that these will be constructed to mitigate for sets which require closure.

The assessment of impact with respect to badgers confirmed;

1. The site is occupied by a single badger group, with Sett A as the present main sett.
2. Sett B is not in use at present, although was an active sett until early 2017.
3. The loss of Sett B for the proposed development should not affect the survival of the resident badger social group so long as Sett A remains intact and undisturbed, that a replacement sett is created as a fail-safe or back-up sett, and that as much as possible of the foraging habitats (i.e. rough grassland) are retained / created.
4. In order for badgers based at Sett A to gain access to foraging habitats (mainly the stream & reservoir valley and woodlands, and areas of rough grassland) it will be necessary to ensure that secure travel routes for badgers through the proposed development site are maintained / established.

The recommendations with respect to badger mitigation can be summarized as follows;

1. With the planned loss of Sett B it is recommended that Sett A is strictly protected from disturbance so that it can continue to act as a main sett. A management plan that places protection of the sett as its primary objective should be drawn up for the entire woodland (and not just the area around the sett).
2. An artificial sett should be constructed as a replacement to Sett B. However, the artificial sett should be considered as a potential back-up for Sett A, and not as an alternative. The priority must be to retain & protect Sett A. A suggested methodology for artificial sett construction and sett closure is given in the Appendix of the Badger report, together with details for artificial sett construction & methods of closing Sett B.
3. A number of badger paths into and through the main development area have been identified. It will be important to ensure that as many as possible of these badger paths remain accessible to badgers, and/or that potential badger paths are established through the development site to provide badgers with easy access between Sett A and the stream / reservoir woodlands, and the rough grasslands to the south. One possibility for retaining / creating badger travel paths will be to provide as much grassland as is feasible between buildings to establish a network of strips of vegetation through the site, rather than extensive hard landscaping.

NRW have not suggested in any of their correspondence that the mitigation outlined in this report should be secured by condition. However, the Applicant would be happy to accept such a condition.

17.0

Additional Comments Requiring Clarification

Foundation to Building 4

The Biomass Storage Building, which will serve the Biomass to Energy Facility (BtEF), is labelled Building 4 on the development masterplan.

A copy of the masterplan is included in Appendix E.

The area on which Building 4 will be constructed lies on previously developed land that was part of the former Royal Naval Armament Depot (RNAD) site and was occupied by buildings associated with its former use.

The area currently comprises compacted hardstanding, concrete, tarmac and areas of demolition rubble. During previous demolition work at the site, an earthwork embankment was created at the north eastern edge over some of the demolition rubble. This has created an embankment which has since become vegetated with grass, gorse/scrub and some small trees.

Earthworks will be necessary to re-grade the land back to its former development level. The proposed earthworks, together with existing and proposed cross sections are discussed in section 10 of the Addendum.

The Biomass Storage Building will utilise shallow pad foundations onto the underlying rock. We do not anticipate the need for piling at this location. This will minimise noise and vibration associated with construction.

New concrete slabs will be laid inside the building above the existing hardstanding surface.

Hardstanding which is external to the building in this area will be uncovered during the earthworks.

Hardstanding in good condition will be retained with repairs and new concrete hardstanding will also be laid where required to complete the external working surface.

Drawing EGW-01-098, which is included in Appendix E, shows the minimum protected buffer zones which have been proposed around each of the tunnels within which no development will occur. The drawing also shows that the corner of Building 4, which lies closest to the stone arch, is over 20m away from it.

Based on the above, Egnedol's specialist bat ecologists have concluded that the construction of Building 4 would not adversely impact the bat habitat created by the tunnels and stone arch and that the construction would not adversely affect bats.

Drawing EGW-01-098 included in Appendix E shows that the distance between the Blast Wall and Storage Building 4 exceeds 12m.

Retaining Wall

A retaining wall will be constructed to the North of Building 4, following the completion of earthworks.

Based on the findings of the trial pit exercise, discussed in Section 11 – Earthworks, the retaining wall foundations have also been located outside the area containing buried blockwork.

The retaining wall foundations will therefore not require any excavation of the underground block structures that could potentially be used by bats.

This is confirmed by drawing EGW-01-076 in Appendix E

Greenhouses

The greenhouses will not be internally lit. There will therefore be no light source which could cause any lighting impacts.

Cumulative Effects

The Cumulative Effects chapter of the EIA (Chapter 19) has been reviewed following the preparation of the Addendum and supporting documentation. The HRA concludes that, following the implementation of the mitigation proposed and the agreement and adoption of an EMP and CEMP for the works there will be no LSE.

An Environmental Permit, EPSL and Marine License will also all be required to undertake the works and operate the site. In light of the above assessment and control measures, there will be no residual or cumulative effects from the proposed development.

A revised Chapter 19 has therefore not been submitted.

NRW comments on ES (5th April 2018) together with Applicant responses in Green.

1. Introduction

1.1 The PPC team West Wales and Development Planning Team, asked the Air Quality Modelling and Risk Assessment Team (AQMRAT) to review an air quality impact assessment submitted by Egnedol Wales Ltd. The report is in support of a proposed 49.9MW Biomass to Energy facility (BtEf), near Milford Haven.

1.2 As this application is a planning submission, we will only make high level comments on the impact assessment report, such as their assessment methodology. We have not reviewed any dispersion modelling input files or undertaken check modelling ourselves. Additionally, the comments made in this report relate only to the operational phase of the proposed development.

1.3 It should be noted that we cannot rule out the possibility that further information may be required during a detailed risk impact assessment audit at the permitting stage.

2. Comments

2.1 The applicant's report is brief and does not contain the detail we would expect to see within an environmental permit application. – *As noted above in 1.2 the information provided was to support a Planning Application and is not intended to be of sufficient detail to satisfy the required Environmental Permit. Raw input and output data will be provided during the Permit application.*

2.2 The applicant has used dispersion modelling software ADMS 4.2. There is a newer version of the software available – the current version of ADMS is 5.2. – *Both ADMS 4.2 and 5.2 use the same modelling principles, namely the atmospheric boundary layer depth and monin-obukhov length. The difference between the two versions of software are additional features, such as wind turbine modelling, ADMS mapper functionality and hourly time varying emissions enhancements rather than a change to the modelling itself. The results from both versions are therefore equally reliable and use the same fundamental modelling principles.*

2.3 Should the proposed plant fall under the classification of incineration or co-incineration, the applicant should review the pollutants list and the emission limit values prescribed in IED. The assessment should include the assessment of short and long-term emissions. – If the plant is classified by NRW as incineration or co-incineration during the permit application, then further assessment will be undertaken based on the limits that are relevant at the time. The assessment has already been undertaken on both short and long term emissions and the output from this analysis is included in the original ES submission.

2.4 The applicant has proposed a stack height of 60m, however they have not provided the modelling predictions to justify their selection of stack height. – During the initial phase of the ES, varying stack heights and diameters were modelled to assess the required height to conservatively achieve anticipated permitted emission levels. The output from this study was utilised to determine the stack height and diameter for inclusion in other elements of the ES, predominantly visual impact. The data from the additional models that were run is available and will be provided as part of the environmental permit application if required.

2.5 The applicant has predicted the air concentration of dioxins and assessed against the COT tolerable daily intake value of 2 pg WHO-TEQ/day. Where there are emissions of dioxins and dioxin-like-pcbs, a full dioxin impact assessment should be undertaken which considers all intake exposure pathways. This is especially pertinent if existing or proposed agriculture/food businesses in the near vicinity are likely to be exposed to emissions. – Due to the presence of the comprehensive synthetic gas cleaning system and strictly controlled combustion mechanisms the facility will not release dioxins or furans to the environment. The information supplied in the ES was provided as a guide to what would be the case if the facility was operated to the upper limit for Dioxins and Furans outlined in the Incineration Directive. Notwithstanding the above, it is stated within the COT report that the average exposure to Dioxins is 1.8 pg TEQ/day and that this is declining year on year. If this average exposure level of 1.8 pg TEQ/day were to be adopted in an impact assessment, and if it was to be also assumed that the maximum modelled value (assuming maximum allowable ID emission concentrations) of 0.0008 pg TEQ/day is inhaled or ingested, then the resultant dose would be 1.8008 pg TEQ/day. This would still be well below the tolerable daily intake of 2 pg TEQ/day.

2.6 The applicant has not undertaken any assessment of the impact of heavy metals against the relevant Environmental Assessment Levels. – The comprehensive cleaning of the Synthetic gas prior to catalytic conversion or controlled combustion removes all contaminants from the synthetic gas such as heavy metals, halides and particulates. Therefore the post combustion emission will not contain any heavy metals and there was no need to assess this.

2.7 The background values used in the assessment at human health receptors have been taken from AURN measurements. Both the AURN monitors used are not in the near vicinity of the proposed installation. Representative background values should be used in the impact assessment. – None of the emissions exceeded 10% of the short term values or 1% of the long term values at all residential receptors and therefore no further assessment has been required for the planning application.

2.8 In section 8.4 of the report, the applicant lists the habitat sites considered in their impact assessment. The applicant should follow guidance on GOV.UK, Air emissions risk assessment for your environmental permit, which states you should assess the impact on all SAC, SPA and Ramsar sites within 10km, and all SSSI and non-statutory sites within 2km. – All of the relevant sites within 10km of the site have been assessed.

2.9 Direct.Gov also lists the relevant assessment levels for the impact on conservation sites. This includes critical levels for HF and daily NO_x, which has not been included by the applicant in their report. – The permitted level shown on direct.gov.uk for HF and daily NO_x for conservation sites are 5 and 75 ug/m³ respectively. The maximum ground level concentration modelled for HF at any of the conservation sites is 0.0047ug/m³, which is 0.094% of the permitted value. For NO_x, the maximum

24 hour concentration modelled at any of the conservation sites is 0.187ug/m³, which is only 0.25% of the permitted level.

2.10 When assessing the impact of deposition on habitat sites, the applicant should refer to APIS for critical loads. In assessing the impact of acid deposition, the applicant should use the critical load function. Emissions of hydrogen chloride should be included in the assessment of acid deposition. – APIS has been used to determine the critical loads of the sites being assessed. As shown in the ES, the SSSI with the most significant impact from Acid Deposition is Hook Wood. For Acid Deposition (N) the critical load is 0.14keq/ha/yr and the calculated value from our model was 0.004keq/ha/yr which equates to 2.87% of the critical load. If we assume all HCl is deposited in Acid form then the modelled value for HCl for this site is 0.0013keq/ha/yr; therefore, if both of these keq values are used we have 0.0053keq/ha/yr which is equivalent to 3.79% of the critical load. As this is the most affected habitat site it can safely be assumed that if we also take HCl deposition into consideration it is not going to increase the impact significance.

2.11 The applicant states “surface roughness was set at a value of 0.01”.The applicant should review the ADMS suggested surface roughness values for different land types. ADMS also has a feature that makes it possible to define a distribution of surface roughness over the domain. – This was the approach that was adopted. The suggested value from ADMS was the value adopted within the models.

2.12 Where proposed mitigation measures, such as SCR for NO_x, result in a release of NH₃, the impact of these emissions should be assessed. – The permitted levels stated on the direct.gov.uk website for Ammonia are 180ug/m³ for long term and 2500 ug/m³ for short term exposure. The chosen SCR system for this project uses Urea injection. Although Ammonia is formed as an intermediate compound during the SCR process and should therefore react fully and not be released, we have modelled a 10ppm to ammonia slip. The result of this model is a short term level of 0.082 ug/m³ which is 0.003% of the short term limit and a long term level of 0.048 ug/m³ which is 0.026% of the long term limit.

18.0 Proposed Conditions

In their correspondence of 20 October 2017, NRW suggested conditions that could be applied to any permission granted. The applicant have reproduced these below and provided comments.

Item	NRW/LPA suggested condition to DNS	Egnedol comment
NRW Proposed Conditions – Appendix D to letter dated 20th October 2017		
Lighting Strategy	See Lighting Strategy condition proposed by NRW.	This condition is acceptable. A revised lighting strategy has been submitted with the Addendum and could be subject to condition in the approval.
European Protected Species License	See NRW European Protected Species License condition	We would request that the wording of this proposed condition is modified. Currently the condition requires us to provide the EPSL to PCC prior to ANY works. We request that is modified to: “Prior to the commencement of any works <i>that require an EPSL</i> , a copy will be provided to the LPA” Notwithstanding the above, NRW state in their letter of 22nd March 2018 that this condition will no longer be required.
Bat Mitigation	See NRW Bat Mitigation condition	Egnedol accept that PCC are integral in agreeing a final scheme of bat mitigation, however this will be detailed within the EPSL which is covered above. We therefore do not think the first part of this condition is required. Egnedol accepts the condition relating to the implementation of the recommendations of Section 4 of our ground based tree survey report.
Otters	See NRW Otters condition	Egnedol agree with the condition as written.
Ecological Management Plan	See NRW Ecological Management Plan condition	Egnedol agree with the condition as written.
Construction Environmental Management Plan	See NRW CEMP condition	Egnedol agree with the condition as written.
GANT Chart	See NRW GANT Chart condition in Appendix D - NRW 20th	Part i and ii are acceptable conditions.
	October response.	The Applicant will not be able to make the bats move into the new habitat. We will construct the new bat house facility as proposed and this will provide significant enhancement of habitat. However, as the existing roosts in the tunnels and in the blast arch are being fully retained, there will be no incentive for the bats to move to the new enhanced facility. This condition should be reworded to state that the mitigation features must be constructed prior to commencement and monitored for use and the results provided to PCC. Egnedol are happy with the additional condition wording and where there are any changes to the works programme that require a revision to the GANT chart in respect of works concerning protected species these shall be discussed with the Local Planning Authority and Natural Resources Wales, and a revised GANT chart provided to the Local Planning Authority within one week of the discussions occurring for its written approval. We also note NRW's comments regarding amending the wording of part iii of this condition in their letter of 22nd March 2018.



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