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Consultation Responses - Ecology:

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This Technical Note has been produced and documents the responses to consultation comments received from the following organisations in response to ecological information submitted in support of the planning application, reference DNS/3136340 Consultation documents include –

- Natural Resource Wales – Ref CAS-124390-L9C72020 (DNS Reference: 3236340-000226)
- Local Impact Report for Cardiff Council – Ref 19/02588/MJR (DNS Reference: 3236340-000251)
- Residents against the CF3 Incinerator A response to Mor Hafren EDNA Surveys (DNS Reference :3236340-000214)

Responses and further supporting information are set out in the following sections relevant to the above consultation responses. E-mail correspondence re Nitrogen deposition, from NRW, is appended.

Declaration of compliance with professional code of ethics or conduct

The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bonafide opinions.

Every reasonable attempt has been made to comply with the relevant best practice guidelines and BS42020:2013 (Biodiversity: Code of practice for planning and development).

1. RESPONSE TO NRW REQUIREMENTS

1.1 Consultee Comments - NRW

1.1.1 NRW have made the following comments with regards to the Gwent Levels Site of Special Scientific Interest (SSSI)(page 3):

“With regards to the Gwent Levels designated sites, at statutory pre-application consultation stage, we noted the applicant used a nutrient nitrogen critical load of 20kgN/ha/yr. We advised that the nutrient nitrogen critical load for the Gwent Levels designated sites is 10–20kgN/ha/yr. We explained that a key part of the traditionally managed grazing marsh areas within the Gwent Levels are the traditionally drained fields via a system of grips. This can lead to the development of marshy grassland areas in these grips, generally dominated by species of Juncus (rush). On this basis, we advised the relevant critical load is 10-20kgN/ha/yr., i.e., to be assessed as a type of marshy grassland

We note the applicant’s response to our comments, however, we maintain our advice that the relevant nutrient nitrogen critical load is 10–20kgN/ha/yr. The reason for this is that the designated features of the Gwent Levels are in the reens. If the land adjacent to the reens experiences greater increases in nutrient, this will have an influence/consequence (for example through run-off) on the condition of the reens and in turn the designated features. It is important that the nutrient content of the reens be mesotrophic, and to help achieve this, we require the applicant to use the lower end of the 10-20kgN/ha/yr. range in their assessment.

As such, further assessment is required, using the correct nitrogen critical loads. Where the Process Contributions (PCs) are found to be above 1% and the Predicted Environmental Concentration (PECs) above 70%, detailed modelling and assessment will be required because these contributions cannot be screened out as insignificant.”

1.2 Applicant’s response

1.2.1 NRW have described the suite of Gwent Levels SSSIs (at 5856 hectares) as by far the largest complex of lowland SSSIs in a coastal and floodplain grazing marsh context in Wales (Poole). The UK Biodiversity Action Plan (BAP) priority habitat description of coastal and floodplain grazing marsh describes the habitat as *“Grazing marsh is defined as periodically inundated pasture, or meadow with ditches which maintain the water levels, containing standing brackish or fresh water. The ditches are especially rich in plants and invertebrates”* (Maddock, 2008). It is clear from this description that the ditches themselves are classed as part of the broad habitat type and not treated as a separate habitat. The Air Pollution Information Service (APIS) website provides a critical load range for nitrogen deposition of 20-30kgN/ha/yr. for coastal and floodplain grazing marsh. In line with the description of the habitat provided by NRW the critical load for nitrogen for coastal and floodplain grazing marsh was used for the air quality assessment.

1.2.2 NRW have suggested that a critical load of 10–20kgN/ha/yr. should be used due to the presence of a system of grips within the fields that drain water into surrounding ditches and reens. NRW highlight this

can lead to the development of marshy grassland areas in these grips, generally dominated by species of *Juncus* (rush). On this basis, NRW advised the relevant critical load is 10-20kgN/ha/yr., i.e., to be assessed as a type of marshy grassland.

- 1.2.3 In the Guidelines for the Selection of Biological SSSIs published by JNCC a table is provided showing the relationship between lowland grassland communities of high botanical nature conservation value identified in the National Vegetation Classification (NVC) and priority habitats for biodiversity conservation (Jefferson *et al*, 2019). The NVC communities MG1 c-e, MG2, MG5, MG7c, MG8, MG4 fall within the priority habitat lowland meadows (UK BAP) and M22-M26 communities within the purple moor grass and rush pasture priority habitat type. The document notes that some of the NVC communities that fall within these two priority habitat types also fit within the coastal and floodplain grazing marsh priority habitat.
- 1.2.4 For neutral grassland the APIS website gives a critical load range of 20-30 kg/N/ha/yr. for low and medium altitude hay meadows (Eunis code E2.2). This is the same critical load range as coastal floodplain and grazing marsh. A critical load range of 10-20 kg/N/ha/yr. is given for mountain hay meadows (Eunis code E2.3). The description of mountain hay meadows is “often species-rich mesotrophic to eutrophic hay meadows of the montane and subalpine levels of higher mountains of the nemoral and southern boreal zones”. This is clearly not relevant to habitats found at sites such as the Gwent Levels it is difficult to understand why NRW have advised a critical load range be used that does not relate to the habitats found within the Rumney and Peterstone SSSI.
- 1.2.5 NRW Phase 1 habitat mapping (<https://maps.cyfoethnaturiolcymru.gov.uk>) shows the habitats in the Rumney and Peterstone SSSI immediately north of the site to be a combination of bare ground (J4), improved grassland (B4), tall ruderal (C3.1) and neutral grassland (B2) with species recorded including docks (*Rumex* sp), thistles (*Cirsium* sp), ragwort (*Senecio* sp), crested dog’s-tail (*Cynosurus cristatus*), black knapweed (*Centaurea nigra*) and common bent (*Agrostis capillaris*). This is not the marsh grassland community B5 described in the handbook for Phase 1 habitat survey (NCC, 1990).
- 1.2.6 The handbook for Phase 1 habitat survey does note that B2 neutral grassland can support the soft rush (*Juncus effusus*) – Yorkshire fog (*Holcus lanatus*)/tufted hair grass (*Deschampsia cespitosa*) grassland communities (assume to refer to the MG9 and MG10 communities described in Rodwell, 1992) . It is assumed that the soft rush – Yorkshire fog/tufted hair grass communities were not recorded as the (limited) species note available on line do not mention any of these three species as being present.
- 1.2.7 NRW state that the relevant nutrient nitrogen critical load for Rumney and Peterstone SSSI is 10 – 20kgN/ha/yr. The reason for this is that the designated features of the Gwent Levels are in the reens. They state that if the land adjacent to the reens experiences greater increases in nutrient, this will have an influence/consequence (for example through run-off) on the condition of the reens and in turn the designated features.
- 1.2.8 Critical levels of air pollution and critical loads of pollutants have been identified by the United Nations Economic Commission for Europe (UNECE). Critical loads are defined as: “a quantitative estimate of

exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge”.

- 1.2.9 The land adjacent to the reens within Rumney and Peterstone SSSI is a mix of improved and neutral grassland. As set out above it is considered appropriate to apply a critical load range of 20 - 30kg/N/ha/yr. when assessing impacts on this broad habitat types. Background concentrations of nitrogen, both with and without the scheme, are far below the lower end of this critical load range. As exposure below 20kg/N/ha/yr. is not known to result in significant harmful effects on specified sensitive elements of the environment according to present knowledge, it is difficult to understand how the impact pathway identified by NRW would occur.
- 1.2.10 The habitat type, standing water, is a qualifying feature for Rumney and Peterstone SSSI. APIS provides one habitat type for Rumney and Peterstone SSSI: standing open water and canals. There is no site-specific critical load for nitrogen given it just notes that the habitat is sensitive to nitrogen. Under the broad habitat information for the same habitat type it is noted that deposition from ammonia, nitrate and other forms of nitrogen could (*our emphasis*) be an important source of nitrogen in mesotrophic standing waters; but detailed nitrogen budgets for mesotrophic lakes do not exist so the relative inputs from atmospheric deposition are unknown.
- 1.2.11 As recently as 2017 NRW were stating that incremental nitrogen deposition did not need to be considered for Rumney and Peterstone and St Brides SSSI: “the incremental nitrogen deposition rate within the Gwent Levels Rumney & Peterstone SSSI is 7kgN/ha/yr. and 0.07kgN/ha/yr. at the adjacent St Brides SSSI. There are no critical loads associated with the habitat type of standing open water and canals and therefore no further assessment is required” (NRW permitting decisions: IQE (Europe) Limited – St Mellons Semiconductor Plant Decision Document).
- 1.2.12 At the public inquiry into the M4 corridor around Newport scheme, the proof of evidence on water quality submitted by Dr Tristan Willmott Hatton-Ellis (NRW) states that “*Although there are a wide range of studies on the effects of different pollutants on freshwaters, relatively few of these have been carried out on ditch systems. This has limited NRW’s ability to provide specific advice that relates to impacts on ditches. I know of no information regarding the impact of pollutants on the SSSI feature species*”.
- 1.2.13 We are not aware of any new significant research that has been published since the end of the M4 corridor inquiry in March 2018 that would provide the evidence to support the use of a critical load range of 10 – 20kg/N/ha/yr. for Rumney and Peterstone SSSI.
- Assessment of impacts of the Scheme with 10kg/N/ha/yr. critical load.
- 1.2.14 Table 30 of the revised air quality assessment shows that nitrogen deposition from the facility will exceed 1% of the 10kg/N/ha/yr. critical load at two locations: Gwent Levels Rumney and Peterstone SSSI 2 and Gwent Levels Rumney and Peterstone SSSI 3. Deposition at Gwent Levels Rumney and Peterstone SSSI 2 would be 0.4472kg/N/ha/yr. and at Gwent Levels Rumney and Peterstone SSSI 3 it would be 0.2229kg/N/ha/yr. Background levels of nitrogen deposition at both these locations is 13.16kg/N/ha/yr. Figures 9 and 10 show the extent of deposition across the SSSI modelled for 2015 and 2018.

- 1.2.15 Table 38 of the revised air quality assessment shows that nitrogen deposition in-combination with other plans and projects at Gwent Levels Rumney and Peterstone SSSI 2 would be 0.539kg/N/ha/yr. and at Gwent Levels Rumney and Peterstone SSSI 3 it would be 0.353kg/N/ha/yr. Deposition at Gwent Levels Rumney and Peterstone SSSI 1 would be 0.187 kg/N/ha/yr. Figures 12 and 13 show the extent of deposition across the SSSI modelled for 2015 and 2018.
- 1.2.16 The Gwent Levels SSSI is under threat from scrub encroachment along the field ditch and ree edges, especially where it is present on both sides, which is shading out features of conservation interest such as aquatic plants. Traditionally, more of the ditches would have been kept open as wet fences to keep stock in, with occasional pollarded willows planted to help strengthen the banks. An increasing problem are the numbers of livestock brought into the area, rather than born and raised on the Levels. As a result, they are unaware of wet fences and farmers change practices to protect them.
- 1.2.17 A lack of responsibility of land owners to manage the field ditch edges threatens the whole area and may also exacerbate localised flood risk through scrub encroachment and ditch blocking by trees. The dominance of double hedged ditches and reens is increasingly threatening not only biodiversity, but also the ability of the drainage system to work and drain the land and protect it from localised flooding.
- 1.2.18 Over each SSSI at least 60% of field block units should be in 'favourable condition' for the site to be considered in favourable condition for that performance indication. For a field block to be in favourable condition the target is that each field block unit must have no more than 50% ditches to be category 2, 2d, 3 or 4c i.e., no more than 50% shaded ditches.
- Category 2 are ditches hedged both sides
 - Category 2d are ditches double hedged and dry
 - Category 3 are ditches with no hedge but ditch is dry
 - Category 4c are ditches with hedge along one site and intermittent hedging on the opposite bank
- 1.2.19 Only 34% of field blocks within Rumney and Peterstone SSSI have ditches where less than 50% falls within Category 2, 2d, 3 or 4c. The assessment of the condition of ditches within the SSSI shows that inappropriate land management is a key factor causing a reduction in the interest features of the reens. The heavy shading the ditches within the Rumney and Peterstone SSSI are subject to will suppress aquatic plant growth and also reduce the attractiveness of ditches to invertebrates, both are key interest features of the SSSI (Photograph 1 in Appendix).
- 1.2.20 The Gwent Levels are a managed system of grazing marshes, with the fields managed to provide grazing, or hay and silage crops for cattle and other livestock (Photograph 2 to 5 in Appendix). DEFRA guidance on Nitrate Vulnerable Zones provide figures for the amount of nitrogen produced an individual livestock unit per year. A single dairy cow (after first calf) will produce between 77 and 115 kg/N/ha/yr. depending on milk yield and beef cattle between 50 and 83 kg/N/ha/yr. depending on age and weight. A single sheep would produce between 7.6 and 11.6kg/N/ha/yr. depending on age and weight. A single horse would produce 21 kg/N/ha/yr.

- 1.2.21 Nitrogen applications for grass fields can be as high as 300 kg/N/ha. Higher rates may be applied where the objective is to produce a protein content of at least 16% of the dried product. A field visit confirmed that reseeded of some fields within the SSSI takes place consistent with the production of silage or hay, other fields show evidence of agricultural improvement indicating improvement of the grassland has taken place (Photographs 6 to 9).
- 1.2.22 To place the contribution of nitrogen deposition from the facility in context with inputs from agricultural activities Table 1.1 sets out the daily level of nitrogen deposition per ha from livestock compared to the modelled annual nitrogen deposition rate per ha from the facility (alone and in-combination with other plans and projects). The table uses the highest modelled deposition rates for the SSSI.

Table 1.1 Daily nitrogen volumes from livestock per ha compared to annual predicted contribution from proposed facility.

Source of nitrogen	Amount of N produced daily	Time taken to accumulate equivalent amount of nitrogen through grazing as facility contributes annually	
		Alone: 0.45kg/N/ha/yr.	In-combination: 0.54kg/N/ha/yr.
Dairy cow	0.21kg	2.15 days	2.6 days
Beef cattle	0.13kg	3.5 days	4.2 days
Horse	0.05kg	9 days	10.8 days
Sheep	0.02kg	22.5 days	27 days

- 1.2.23 As well as these direct inputs of nitrogen onto the Gwent Levels the APIS website shows agricultural activities are the largest contributor to aerial nitrogen deposition across the site. Emissions from agriculture and fertilizers account for 28% of the total N deposition (3.7kg/N/ha/yr.). Transboundary pollution (imports from Europe) is the next biggest contributor at 21%. Nitrogen deposition from both commercial industry, residential combustion and industrial combustion account for 0.4kg/N/ha/yr.
- 1.2.24 In itself, the predicted annual aerial deposition of nitrogen across the site from this project and in-combination with other plans and projects is insignificant compared to direct agricultural impacts from agriculture in the form of inputs of organic and inorganic fertilizers and excreta from livestock.
- 1.2.25 Although information on impacts of aerial nitrogen deposition on ditch habitats does not exist, it is worth noting that values of additional nitrogen deposition for various habitats that result in a reduction in the measured species richness by one do exist for some habitats (Caporn *et al*, 2016). For habitats where the background level of nitrogen deposition is between 5 and 10kg/N/ha/yr. (upland heath, lowland heath and acid grassland) and the nitrogen critical load is between 10-20kg/N/ha/yr. nitrogen increases of between 0.4 and 2kg/N/ha/yr. are necessary to result in the loss of a single species. Nitrogen deposition within the SSSI is largely below 0.3kg/N/ha/yr. making it unlikely that any impact on the flora of ditches would occur.
- 1.2.26 NRW note that during the period of summer penning levels the Gwent Levels are effectively a static water body (Poole, J). Summer penning levels are established through retaining water by blocking drains with boards to create wet fences to allow livestock to be managed during the summer months. During the

winter water levels are reduced (boards removed from drains) to create winter penning levels. The winter penning level allows flood water to drain from the land into the drainage network and discharge into the Severn Estuary. NRW (Willmott Hatton-Ellis) provided evidence to show that the driest months (least rainfall) in the Cardiff area occur between April and July and the wettest months between October and January.

- 1.2.27 Rainfall patterns in the local area suggest that levels of N deposition associated with rainfall or other forms of precipitation (wet deposition) will be lowest during the main growing season when accumulation of nutrients is most problematic due to the retention of water within the ditch network and the gradual decrease in volumes of water in the ditches over the summer resulting in increasing concentrations of pollutants (mg l^{-1}). The highest rates of wet deposition will occur during the wettest months when water drains from the Gwent Levels into the Severn Estuary and plant growth is reduced.
- 1.2.28 At the public inquiry into the M4 corridor around Newport scheme, the proof of evidence on water quality submitted by Dr Tristan Willmott Hatton-Ellis (NRW) includes a list of 31 plants considered to be widespread in the Gwent Levels. This list is reproduced in Table 1.2 with the Ellenberg indicator values for nitrogen shown (Hill *et al*, 1999). Table 1.3 provides the details of the Ellenberg scale for nitrogen; the scale can be viewed as a general indicator of soil fertility.

Table 1.2. Ellenberg indicator values for nitrogen for 31 plant species widespread in the Gwent Levels

Species	Ellenberg indicator values for nitrogen
<i>Alisma plantago-aquatica</i>	7
<i>Angelica sylvestris</i>	5
<i>Apium nodiflora</i>	7
<i>Berula erecta</i>	7
<i>Bolboschaenus maritimus</i>	7
<i>Butomus umbellatus</i>	7
<i>Callitriche stagnalis</i>	6
<i>Catabrosa aquatica</i>	7
<i>Ceratophyllum demersum</i>	7
<i>Ceratophyllum submersum</i>	8
<i>Glyceria fluitans</i>	6
<i>Glyceria maxima</i>	8
<i>Hydrocharis morsus-ranae</i>	7
<i>Lemna gibba</i>	8
<i>Lemna minor</i>	6
<i>Lemna trisulca</i>	5
<i>Myriophyllum verticillatum</i>	7
<i>Oenanthe fistulosa</i>	6
<i>Phragmites australis</i>	6
<i>Potamogeton berchtoldii</i>	5
<i>Potamogeton crispus</i>	6
<i>Potamogeton pectinatus</i>	7

<i>Potamogeton pusillus</i>	6
<i>Potamogeton trichoides*</i>	6
<i>Ranunculus omiophyllus</i>	4
<i>Sagittaria sagittifolia</i>	6
<i>Sparganium emersum</i>	6
<i>Sparganium erectum</i>	7
<i>Typha latifolia</i>	7
<i>Wolffia arrhizal*</i>	7
<i>Zannichellia palustris</i>	7

Table 1.3. Ellenberg scale for nitrogen

Ellenberg indicator score	Definition
1	Indicator of extremely infertile sites (<i>Agrostis curtisii</i> , <i>Clinopodium acinos</i> , <i>Drosera rotundifolia</i> , <i>Rubus chamaemorus</i>)
2	Between 1 and 3 (<i>Aira praecox</i> , <i>Carex panicea</i> , <i>Linum catharticum</i> , <i>Scabiosa columbaria</i>).
3	Indicator of more or less infertile sites (<i>Centaurea scabiosa</i> , <i>Galium saxatile</i> , <i>Pimpinella saxifraga</i> , <i>Teucrium scorodonia</i>).
4	Between 3 and 5 (<i>Agrostis capillaris</i> , <i>Cirsium palustre</i> , <i>Plantago lanceolata</i> , <i>Primula vulgaris</i>).
5	Indicator of sites of intermediate fertility (<i>Angelica sylvestris</i> , <i>Digitalis purpurea</i> , <i>Iris foetidissima</i> , <i>Trifolium pratense</i>).
6	Between 5 and 7 (<i>Cirsium arvense</i> , <i>Glyceria fluitans</i> , <i>Poa trivialis</i> , <i>Rumex crispus</i>).
7	Plant often found in richly fertile places (<i>Atriplex prostrata</i> , <i>Epilobium hirsutum</i> , <i>Stellaria media</i> , <i>Typha latifolia</i>).
8	Between 7 and 9 (<i>Beta vulgaris</i> , <i>Galium aparine</i> , <i>Lamium album</i> , <i>Urtica dioica</i>).
9	Indicator of extremely rich situations, such as cattle resting places or near polluted rivers (<i>Arctium lappa</i> , <i>Artemisia absinthium</i> , <i>Hyoscyamus niger</i> , <i>Rumex obtusifolius</i>).

1.2.29 It is notable that 30 of the 31 species listed as widespread in the Gwent Levels occur at sites of intermediate fertility (Ellenberg score of 5) or above and over 50% of the species listed occur at richly fertile sites. It is also notable that both plant species that are independent qualifying features of the SSSI, hair like pondweed *Potamogeton trichoides* and rootless duckweed *Wolffia arrhizal*, have Ellenberg scores of 6 and 7 respectively.

1.2.30 The high percentage of plants listed above that occur at sites of intermediate fertility or on richly fertile sites would indicate the aerial depositions within the SSSI at the rates predicted by the air quality modelling would not have any adverse impacts on the interest features of the SSSI.

2. RESPONSES LOCAL IMPACT REPORT – CARDIFF COUNCIL

2.1.1 A number of detailed comments pertinent to ecology matters have been raised in various sections of the Local Impact Report. The council comments and applicant responses are set out in Table 2.1 below.

Table 2.1 LIR Comments and Applicant Responses – Ecology Matters

LIR Comments (inc section/para reference)	Applicant's response
<p>5.11 iii PEAR Section 1.3.1 makes reference to a 2009 version of Planning Policy Wales, which is long since obsolete. PPW 10 was released in December 2018 whereas the PEAR was drafted in July 2019, so there is ample scope for the PEAR to have considered the most up-to-date PPW.</p>	<p>It should be noted that the 2019 PEAR (DOC 39 Technical Appendix 10 Appendix 1.1) has been verified by an updated assessment and further species assessment that has formed the production of the Ecology Chapter (Chapter 10) in the Environmental Statement (ES) (DOC 34).</p> <p>The ES chapter adequacy rectifies some of the short comings identified in the PEAR by the Council. For example, the correct PPW is referenced in the ES chapter.</p>
<p>5.11 iii PEAR Section 1.3.1 makes reference to a 2009 version of Planning Policy Wales, which is long since obsolete. PPW 10 was released in December 2018 whereas the PEAR was drafted in July 2019, so there is ample scope for the PEAR to have considered the most up-to-date PPW.</p>	<p>It should be noted that the 2019 PEAR has been verified by an updated assessment and further species assessment that has formed the production of the Ecology Chapter in the ES.</p> <p>The ES chapter adequately rectifies some of the short comings identified in the PEAR by the Council. The correct PPW is referenced in the ES chapter.</p>
<p>5.11 iii In PEAR Section 3.6.2.2 the site is assessed as having low potential to support foraging and commuting bats, however no justification is given as to how this conclusion was reached. There may not have been any suitable roosting habitat on site, but this does not mean that the outgrown hedgerow / line of trees could not shelter foraging and commuting bats. The site is part of an extensive natural landscape in the form of the Gwent Levels SSSIs and although the nearby industrial installations may cause disturbance through noise and artificial lighting, there are no barriers to the open countryside which would prevent</p>	<p>The Ecology Chapter in the ES considers these points and should be viewed as the overall assessment of the Site value for bats as set out in 10.3.20. This value is then taken through the ecological impact assessment within the Chapter.</p> <p>A recent photograph of the tree line (Photograph 10 at Appendix) illustrates that this is not a significant tree-line and as such the feature could be adequately retained and enhanced at part of the proposed Scheme.</p>

<p>free movement of bats throughout this landscape.</p>	
<p>5.11 iii In PEAR Section 3.6.8 the site is assessed as having negligible potential for dormice, however this species has been detected very nearby to the south of the railway at Wentloog Avenue about 200m to the west and in direct ecological connectivity with the present site. In addition, there are habitats on the present site such as scrub and outgrown hedgerow which could support this species, therefore a full survey should take place before consent is granted.</p>	<p>As set out in the PEAR and also the EVA (DOC 40 Technical Appendix 10 Appendix 1.2) two consultants (REC and BMD) have assessed the site as low suitability for dormouse. The BMD ecologist who undertook the EVA is a licenced dormouse surveyor. Therefore, it is considered that the final assessment set out in Chapter 10 of the ES is considered valid. Further surveys are considered to not be a requirement due to poor habitat on site and limited connectivity to adjacent areas. This risk of dormouse presence has been assessed as very low and as such the general supervised site clearance works by eco clerk for works is considered sufficient as a precautionary approach to site clearance works to safeguard species in general. Photographs 11 to 13 show the scrub present at Site which clearly shows only small areas, isolated and of low value to dormouse with regard to limited species diversity, scale and structure.</p>
<p>5.11.iii Section 4 of the PEAR sets out the conclusions and recommendations, and Section 4.2.1.2 recommends that a full mitigation strategy is formulated based upon results of further recommended surveys. In this response he advises that further surveys in the form of bat flight surveys and a dormouse survey are carried out. Subsequently, and based upon the results of these and other surveys already completed, an assessment of the impact of the proposed scheme should be undertaken, and presented in the form of an EclA report. Only then can a mitigation strategy be formulated.</p>	<p>An EclA has been undertaken in Chapter 10 of the ES Chapter. Further surveys for bats and dormouse were not considered to be required. Due to the ditch feature being retained further bat surveys were not considered a requirement. The vegetation along the ditch is to be enhanced to improve the water quality of the ditch but this will be balanced with retention of the tree line to maintain a foraging route for bats. The PEAR only recommends surveys if the tree line is to be removed. The EV concludes similarly at Section 3.3. As such with the ditch feature retained/enhanced the need for bat activity surveys is not considered to be a requirement due to the overall low value of other habitats lost to development.</p>

<p>5.11.iii</p> <p>Section 4.5.1.1 states that the site has moderate potential for foraging and commuting bats, which contradicts section 3.6.2.2 which assessed low potential. However, he is pleased to see that bat flight surveys are proposed. He also supports the proposal that a sensitive lighting scheme should be introduced as part of the development.</p>	<p>The EV provides a further assessment of bat potential confirming the site value to be 'low'.</p> <p>The surveyor who undertook the EVA is a licenced bat worker and has made the judgement based on best practice using Wrey et al (2010)</p> <p>The PEAR is erroneous at this section as the report states elsewhere that surveys would only be needed if the tree-lined ditch is to be lost.</p> <p>The EVR concludes similarly on this point.</p> <p>Therefore, with the ditch retained and enhanced the need for bat surveys is not considered to be a requirement in this case.</p> <p>Impacts to bat foraging will be managed through retention/enhancement of the ditch feature and sensitive lighting (which can be secured through appropriately worded condition).</p>
<p>5.11.iii</p> <p>4.5.3.2 recommends a reptile survey, which he supports, and he notes that a reptile survey report dated June 2020 has been provided. He has a number of concerns over the methodology used in this reptile survey, and does not support the conclusions that it has reached, though this would not necessarily alter the appropriate mitigation. His concerns are as follows -</p>	<p>As it has been confirmed that the concerns expressed regarding methodologies would not alter the proposed mitigation, detailed responses have not been set out below. Further information has been provided for clarification against the relevant points raised.</p>
<ul style="list-style-type: none"> The survey report refers to the use of refugia surveys, but does not mention visual encounter surveys. Combination surveys involving both direct observation and use of artificial refugia are the most effective at detecting the presence of reptiles (e.g. DMRB, NARRS). Therefore, combination surveys should have been undertaken 	<p>The methodology of the reptile report (ADAS, 2020) (DOC 43 Technical Appendix 10 Appendix 1.5) states the following –</p> <p><i>“On each survey, the surveyor walked slowly around the site and checked the refugia and any other natural refugia, such as the damaged reptile fencing and debris for reptiles.”</i></p> <p>As such direct observations would appear to have been undertaken as part of the artificial refugia checks and also checks of a range of existing refugia present on Site as per best practice methods.</p>
<ul style="list-style-type: none"> All sources of guidance listed in the Council’s SPG recommend using a range of materials for refugia surveys, not just roofing felt on its own 	<p>Noted, but as per the above there were a range of natural refugia and debris present on Site which were also checked during the survey so not reliant on just the artificial refugia placed on site</p>

<ul style="list-style-type: none"> The minimum size of refugia recommended is 0.5m² (e.g. FAS 10, DMRB). Note that KRAG and NARRS interpret this as about 0.7m x 0.7m (or 1m x 0.5m), not 0.5m x 0.5m (see e.g. KRAG 2003), although Sewell 2013 does recommend a minimum 0.5m x 0.5m. Inns suggests 1m x 1m, and Reading suggests about 0.76m x 0.65m, although this is for corrugated sheet steel. Smaller refugia may not be as effective at detecting larger animals such as adult Grass Snakes (e.g. DMRB). A range of sizes is likely to be most effective (DMRB), so it is recommended that either a range of sizes, or roughly equal numbers of two different sizes, are used 	<p>Noted, but as per the above there were a range of natural refugia and debris present on Site which were also checked during the survey.</p>
<ul style="list-style-type: none"> Refugia were left to bed in for 6 days in this instance but normally refugia should be left to 'bed in' for about 2 weeks for reptiles to find them and become used to using them. DMRB recommends a minimum of a week before 1st inspection, although RHHM 2010 states:- 'There is some evidence that refuges are more attractive to reptiles if they are left to 'bed in' for several weeks. At low population densities, it can take weeks or months for animals to start using refuges 	<p>Noted, but as per the above there were a range of natural refugia and debris already present on Site which were also checked during the survey.</p>
<p>Table 1 which sets out the dates and weather conditions of the reptile survey visits. However, the times of day that the surveys took place are not given. For example, the start / finish temperature of the 27/05 survey is quoted as 17C. However, this was in the middle of the late May heatwave, so reptiles may not have been active or using refugia, unless the survey was conducted very early in the morning or late in the evening</p>	<p>The key survey conditions were provided which confirms that surveys were conducted during the correct weather. As per the report – <i>"All seven reptile surveys were undertaken at appropriate times of day and under suitable weather conditions."</i></p>
<p>Given these caveats, he accepts the conclusion that there is a low population of Common Lizards</p>	<p>This view is noted; however, a number of site visits been conducted over 2020 including</p>

<p>present, and that Adders and Slow-worms are probably absent, however, he does not accept the view that Grass Snakes are likely to be absent. The reptile fencing referred to is largely destroyed, giving access for this species to the site, and Grass Snakes are ubiquitous on the Gwent Levels generally. The refugia used were too small to reliably detect adult Grass Snakes, and much of the survey took place during a heatwave when activity would naturally have been low.</p> <p>Therefore, he advises that it should be assumed that the site supports both Grass Snakes and Common Lizards, and that any mitigation methodology should proceed on that basis</p>	<p>verification, reptile, eDNA visits and botanical survey. No grass snakes have been recorded incidentally during such visits. As grass snakes are a far-ranging species there is always a risk of transient individuals in some of the more peripheral areas of the Site. The majority of areas that offer some habitat to grass snake are being retained (e.g. the ditch feature) with the main habitat loss considered to be low value habitat for reptiles due to grazing pressure and lack of structured mosaics (see Photograph 2 in the reptile report).</p> <p>The Ecological Impact Assessment at Chapter 10 of the ES sets out the approach to reptiles in general (so consideration of both lizard and grass snake) through standard measures of phased clearance to disperse any reptile to retained areas and also supervised works by an ecologist during the site clearance. This is set out in detail at Section 10.5.12. of the ES Chapter.</p>
<p>5.11.iv</p> <p>A subsequent report has been produced entitled 'Ecological Verification Assessment' (EVA) which largely verified the results and conclusions of the PEAR, with some minor changes proposed. Section 3.3.5 of the EVA states that a bat flight survey is not necessary because the applicant will control lighting in accordance with current lighting. In his view, there is the potential for other factors arising from the proposed development to impact upon bats, such as noise and aerial pollution. If WG could secure, by planning condition, a lighting scheme which would demonstrate that there would be no artificial light spillage above 1.0 lux onto the retained tree-line, then it may be acceptable to omit a bat survey if this were the only potential source of disturbance. However, if there is potential for noises from operation of the facility or emissions from exhaust flues etc to disturb</p>	<p>As set out above, both the PEAR and the EVA conclude that if the tree-lined ditch is retained then further surveys are not required.</p> <p>It is considered that detailed measures to further ensure no indirect impacts to the feature can be secured through appropriately worded condition and corresponding management plan to ensure the feature continues to provide a foraging resource to local bat species.</p>

<p>bats foraging along the hedgerow, then a bat flight survey should be undertaken.</p>	
<p>5.11.v Section 3.10.3 of the EVA is equally incorrect as it assesses the value for the site for dormice as negligible and does not advocate a survey. As above, a dormouse survey should be undertaken.</p>	<p>As stated above, the EVA was undertaken by a suitably qualified and licenced dormouse ecologist. The potential for dormouse was considered to be low by professional judgement and based on habitat conditions. We therefore maintain that further surveys are not needed with supervised site clearance providing a precautionary approach to the low level of risk at the Site with areas of scrub/trees retained on the peripheries of the Site. The EV concludes similarly to the conclusions of the PEAR.</p>
<p>5.11.vii Therefore, he would say that the decision-maker in respect of this application must also adhere to this guidance and to the Section 6 duty under the Environment (Wales) Act</p>	<p>With regard to enhancement, proposed enhancements to the tree-lined ditch feature are proposed for the scheme, as well as new landscaping around the peripheries of the Site.</p>
<p>5.11.viii The likely ecological impacts of the development: Negative effect</p>	<p>The EclA set out in Chapter 10 of the ES concludes that no significant ecological effects will remain after appropriate mitigation and enhancement. The issues raised by the Council are considered to be addressed and set out in detail through the EclA presented at Chapter 10 of the ES.</p>
<p>5.21 With respect to the report produced in accordance with emissions derived at the outlet of the stack/ chimney, it is noted that potential adverse impacts are expected to be calculated for Nitrogen deposition at ecological receptors (Gwent Levels Rumney & Peterstone SSSI 2, Wentloog Industrial Park SINC). The predicted environmental concentrations (PEC) at these two receptors indicate exceedances of the critical load limit value. The report outlines that the PEC value calculated for each of these receptors is heavily influenced by current background concentrations. The Shared</p>	<p>Wentloog Industrial Park SINC is semi-improved neutral grassland. The citation for the site notes that this grassland habitat is distinct from the reed habitat of the SSSI although the designations overlap. For neutral grassland the Air Pollution Information System website gives a critical load range of 20-30 kg/N/ha/yr. for low and medium altitude hay meadows (Eunis code E2.2). Background concentrations of nitrogen, both with and without the scheme, are far below the lower end of this critical load range. As exposure below 20kg/N/ha/yr. is not known to result in significant harmful effects on specified sensitive elements of the environment</p>

<p>Regulatory Services (SRS) (Air Quality) Officer considers that the applicant needs to review and provide further understanding for the impacted areas. He suggests that it would be beneficial for an ecologist to assess these impacted areas and make a conclusion</p>	<p>according to present knowledge, no adverse impacts on this site are predicted</p>
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3. RESIDENTS AGAINST THE CF3 INCINERATOR

3.1 Consultee Comment – Residents Against the CF3 Incinerator

3.1.1 The Residents against the CF3 Incinerator have made the following comments with regards to eDNA surveys for great crested newt. –

“We note and comment that the EDNA surveys are incomplete due to access issues to Ponds 4 and 5. The applicant states in their Conclusions and Recommendation section page 4, paragraph 2 and 3

“Therefore, although all waterbodies sampled tested negative for great crested newts, it will not be possible to conclusively determine absence of great crested newts at the site without surveying Pond 4 and Pond 5.

If it is not possible to gain access and undertake eDNA surveys on Pond 4 and Pond 5 prior to the end of the survey season (30th June 2020), presence of great crested newts must be assumed within the area and a precautionary approach must be adopted. Therefore, it is recommended that a non-licensed method statement for great crested newts is produced and followed during any works within 150m of the site.”

We cannot find any information or details to confirm if the EDNA surveys of Pond 4 and Pond 5 were completed before the end of the survey season (30th June 2020). We therefore request that this point is taken into consideration during the determination of the planning application.”

3.2 Applicant’s Response

3.2.1 It can be confirmed that access to the ponds was not possible at the time of the survey as the ponds are offsite and under a separate landownership.

3.2.2 Due to this, as set out in the recommendations of the eDNA report (ADAS, 2020) (DOC 42 Technical Appendix 10 Appendix 1.4) a non-licensed method statement would be required to safeguard amphibians during any works within 150m of those ponds. This area would cover the southern portion of the Application Site and include precautionary methods for both amphibians and reptiles.

3.2.3 This requirement is set out in detail in the Ecology Chapter (Chapter 10) of the supporting Environmental Statement in mitigation section 10.5, specifically at 10.5.12 with a detailed series of Reasonable Avoidance Measures listed, in order to safeguard both amphibians and reptiles

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APPENDIX

Supporting Photographs



Photograph 1: Looking west from railway bridge (ST225 809). View shows hedgerows lining ditches contributing to poor condition of SSSI. Semi-improved rush pasture in foreground with improved grassland visible towards Wentloog Industrial Park (also see Photograph 9).



Photo 2: View looking north west from B4239 (ST265 806) showing sheep grazing.



Photo 3: View looking south from railway bridge (ST225 809) showing sheep grazing.



Photo 4: Over wintering cattle within SSSI in fields between Ton-y-Pill and Church Farms (ST270 799).



Photograph 5: Overwintering cattle and stored silage looking north towards Sluice Farm (ST254 791).



Photograph 6: Improved grassland within SSSI looking south from ST247 815.



Photograph 7: Improved grassland within SSSI looking north from ST276 805.



Photograph 8: Difference between improved (western field) and semi-improved fields (eastern field). Looking north from ST258 793.



Photo 9: Improved fields east of site and west of Torwick Reen. Looking south from ST246 803.



Photograph 10: tree-lined ditch along western Site boundary, view looking north.



Photograph 11: Bramble scrub along bund on southern side of site bordering Newlands Road (looking west along Newlands Road).



Photograph 12: Open areas with scattered bramble clumps. View of site looking west from SE corner of site



Photo 13: View of site looking N along eastern edge of site showing open areas and narrow bramble scrub edge.

APPENDIX - E_MAIL FROM NRW

From: Evans, Annabelle <[REDACTED]>
Sent: 15 January 202
To: Maureen Darrie [REDACTED]
Cc: South East Planni [REDACTED]
Subject: FW: DNS MOR HAFREN ENERGY RECOVERY FACILITY CAS-133020-K8R1

Hello Maureen

Further to my email below, here is our further rationale for using 10 – 20kgN/ha/yr.

In our previous advice to PINS we advised a nitrogen critical of 10–20kgN/ha/yr instead of 20-30kgN/ha/yr, and we explained that the designated features of the Gwent Levels are in the ditches and the reens. We would like to note that the mesotrophic condition in the reens and the ditches must be maintained in order to avoid negative effects on the aquatic habitat and damage on the special features of this SSSI.

APIS states that nitrogen from the atmosphere could be an important source of this nutrient in mesotrophic aquatic environments, but we note that there are no detailed nitrogen budgets of mesotrophic aquatic habitats are provided, and the relative inputs from atmospheric deposition are considered unknown. However, we would like to note that this evidence is currently under review. It will be updated soon in APIS and we will advise more specific targets for these type of environments.

In the case of the Gwent Levels, and based on the review of the nutrient data, we consider that it is very likely that phosphorus is available in excess throughout the year, but Nitrogen is below the limit of detection in summer. It is therefore likely that Nitrogen is currently the limiting nutrient for plant growth (including algae) at this time. This is ecologically important. Given the high nutrient loadings already on the Levels, any critical load used would need to ensure that total nitrogen loadings in summer are not increased, so we advised the relevant critical load is 10-20kgN/ha/yr, for this habitat. (Please note that we are examining a more comprehensive set of data and should this change our position we will advise you of this.)

Many reens and ditches are in poor condition in the Gwent Levels - Rumney and Peterstone SSSI and, among other factors, keeping the nutrient load low is essential to avoid a further decline in condition and achieve recovery. This also supports our position that the Nitrogen critical load of 10 – 20kgN/ha/yr must be used for the assessment in order to protect the mesotrophic status of the reens, so the features that they support can be recovered or maintained in favourable condition.

In our previous communications we also noted that traditionally managed grazing marsh areas within the Gwent Levels lead to the development of some forms of marshy grassland. The critical load for the more acid forms of marshy grassland and a range of acid mire/wetland types is 10-20

kgN/ha/yr. On this basis, we advised the relevant critical load is also 10-20kgN/ha/yr, for this type of marshy grassland.

We must also point out that the protection of aquatic habitats of the Gwent Levels may not be possible without the protection of its terrestrial habitats.

Finally, we would like to note that the critical load of 10 – 20kgN/ha/yr advised for the for the Gwent Levels drainage system is consistent with the advice we have provided for other proposals with potential effects on this protected site, such as the M4 corridor.

I trust the above is of assistance.

Kind regards

Annabelle