

OGN 200 Form 1B

Record of a Habitats Regulations Assessment

All staff using this form should be familiar with [OGN200](#) and should have had appropriate training in HRA.

A separate version of this form is available with guidance notes on how to complete it. You should refer to those notes when using this form.

Plan or project name, brief description or application reference number	PAN-029803 (EPR/BT4885IT/V015) Shotton Mill Limited Regulated facility location: Shotton Paper Mill, Weighbridge Road, Shotton, Deeside, Flintshire, CH5 2LL
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HRA iteration/version	1
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1 Plan or Project Details

Information about the plan or project		
1	Date application received	Duly Made 17/02/2026
2	Applicant details	Shotton Mill Limited PAN-029803
3	NRW team responsible for carrying out, or requiring to be carried out, the plan or project, and name of lead officer	N/A
4	Activity/ies proposed	The application is to vary an existing environmental permit for Shotton Paper Mill (ref. EPR/BT4885IT) to reflect the site's change in production from newspaper print to the production of containerboard from recycled fibre (750,000 tonnes per annum) and tissue paper from a mix recycled fibre and virgin fibre (70,000 tonnes per annual). This will result in the following changes to the site: • Addition of a new containerboard machine with associated facilities (including the driers). • New tissue production with associated facilities (including the driers). • New combined heat and power (CHP) plant which will initially comprise of 2 x 64 megawatt thermal (MW_{th}) gas turbines fuelled on natural gas each with a 75 metre stack. A third gas turbine is to be put in at a later date (not in scope of this variation). The CHP will also include 2 x 68 MW_{th} back-up boilers with a combined 30 metre stack. The backup boiler is only to be used when the main gas turbines are out of action of maintenance or repairs. • Modifications to the effluent treatment plant which will include the addition of a new anaerobic digestion plant, biogas storage and a biogas fuelled engines (both 5.8MW_{th}, each with a 24 metre stack). The effluent treatment plant will also have a new containment system installed.

		The changes in the effluent treatment plant will not result in any new emissions or increase of emissions limits and volumes to water over what is currently permitted. Removal of existing equipment used for newspaper production and the removal of older boilers (boiler 3 and boiler 6). The main changes to the site that will impact the designated site's features is through the emissions to air from the new items of plant being added to the site. If granted, the variation will involve the inclusion in the permit of the following new emission points to airs: • Two emission points (2 x 75 metre stacks) associated with the 2 x combined heat and power plants (64MW_{th} each) • One emission point (30 metre stack) associated with the back up boilers (2 x 68 MW_{th} going through a single stack. These boilers are to only be used when the main CHP is off line and for no longer that 730 hours per year • Two emission points associated with the biogas engines (2 x 5.8MW_{th} gas engines) • Dryers – The site will have drying using direct heating for gas fired burners. ○ One for the tissue process using a 6 MW_{th} gas fired direct (through 1 stack) and for the carboard production. ○ 14 x 1.74MW_{th} gas fired burners through a single emission stack. • Emergency Flare – The anaerobic digestion plant is equipped with an emergency flare to combust biogas when the gas engines are not available. It anticipated to operate for fewer than 100 hours per year. The site's existing biomass waste incinerator (referred to as boiler 7 in the current version of the permit) will be retained along with its associated emission point. This combustion unit is subject to Waste Incineration the emission limits on the incinerator are being reviewed in a parallel variation to assess this against the latest Best available techniques has been initiated by the proposed changes. The permit variation also includes changes to the effluent treatment plant. The only change to the water discharge is the monitoring for absorbable organic halogens (AOX) which is present in the form of Polyamide Epichlorohydrin. There are no other changes to emissions to water other than tighter emission limits on existing permitted substances being discharged to the River Dee after being held in the existing
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		onsite lagoon (lagoon 3). The maximum flow rates and daily averages will remain the same as the current permitted levels. The site currently has a permit under EPR for four installation activities. These four will still be in the permit after the variation: Primary Activity: Installation - Schedule 1 Activity Section 6.1, Part A(1)(b) – producing in an industrial plant, paper and board where the plant has a production capacity of more than 20 tonnes per day. Other Installation Schedule 1 Activities; • Section 1.1, Part A(1)(a) – burning any fuel in an appliance with a rated thermal input of 50MW or more. • Section 5.1, Part A(1)(b) – the incineration of non-hazardous waste in an incineration or co-incineration plant in a facility with a capacity exceeding 3 tonnes per hour. • Section 5.4, Part A(1)(a)(i) – disposal of non-hazardous waste in a facility exceeding 50 tonnes per day by biological treatment.
5	Relevant legislation or statutory basis	Environmental Permitting (England and Wales) Regulations 2016 Industrial Emissions Directive 2010/75/EU Medium Combustion Plant Directive
6	Location	Shotton Paper Mill, Weighbridge Road, Shotton, Deeside, Flintshire, CH5 2LL NGR SJ 30638 71478

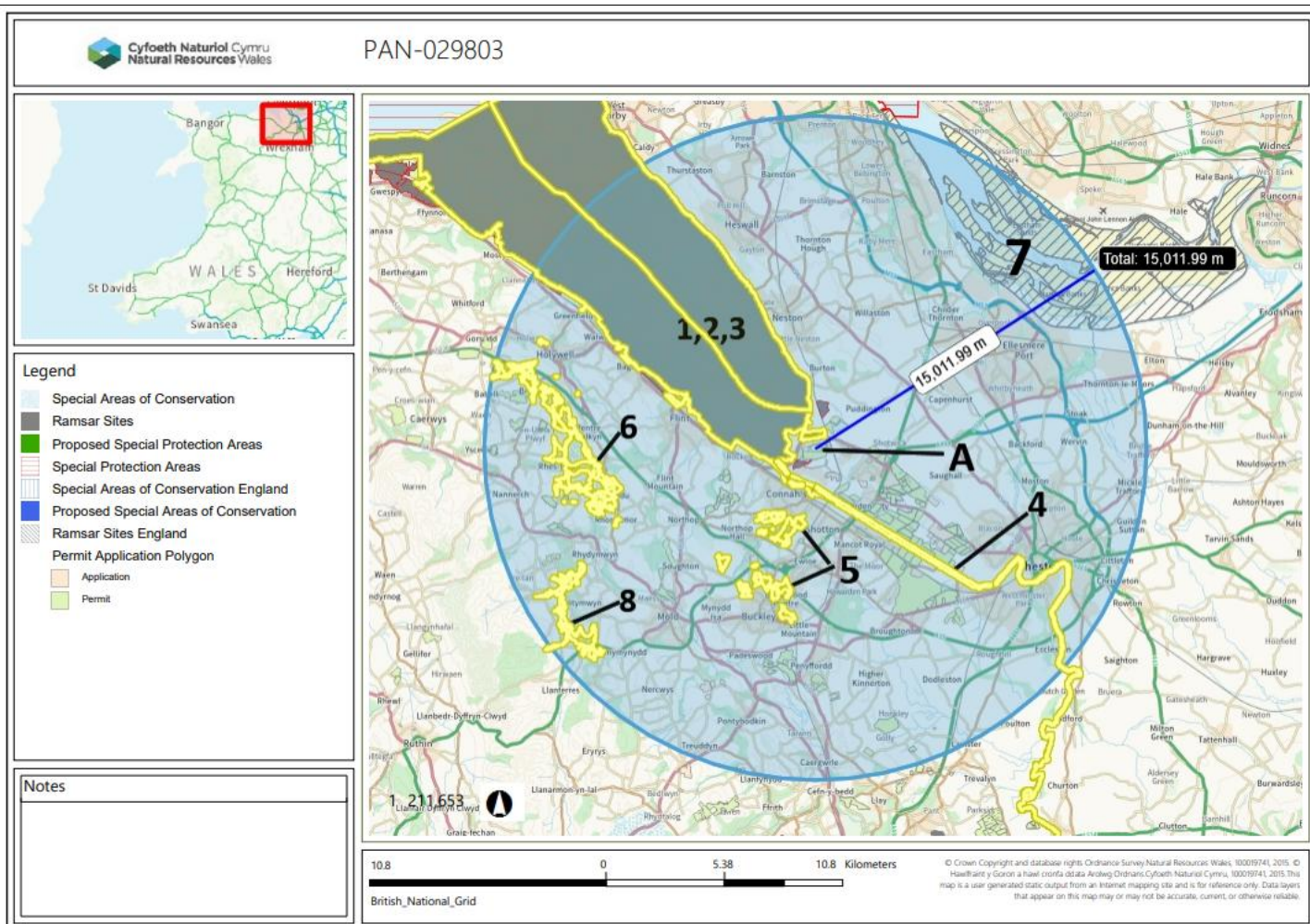


Figure 1a: Site plan showing Shotton Paper Mill (A) and sites within 15 km. Key A – Shotton Paper Mill 1-Dee Estuary/ Aber Dyfrdwy (UK0030131) (Wales and England) (SAC) 2- Dee Estuary/ Aber Dyfrdwy (UK9013011) (Wales and England) (SPA), 3-Dee Estuary/ Aber Dyfrdwy (UK0030131) (Wales and England) (RAMSAR), 4-River Dee and Bala Lake/Afon Dyfrdwy a Llyn Tegid SAC (Wales and England), 5- Deeside and Buckley Newt sites (UK0030132) (Wales), 6-Halkyn Mountains (Wales), 7-Mersey Estuary (England) and 8 - Alyn Valley Wood.

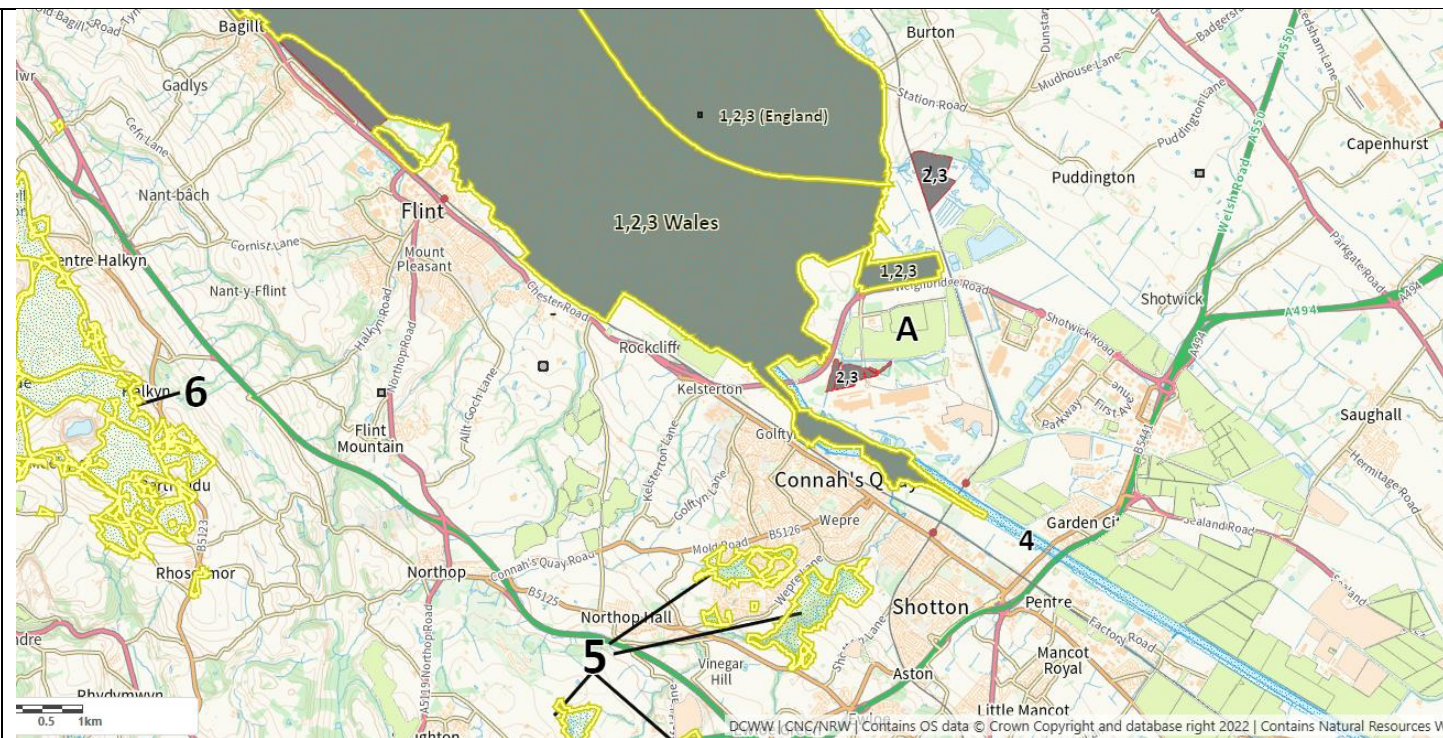


Figure 1b: Localised plan. Key A – Shotton Paper Mill 1-Dee Estuary/ Aber Dyfrdwy (UK0030131) (Wales and England) (SAC) 2- Dee Estuary/ Aber Dyfrdwy (UK9013011) (Wales and England) (SPA), 3-Dee Estuary/ Aber Dyfrdwy (UK0030131) (Wales and England) (RAMSAR), 4-River Dee and Bala Lake/Afon Dyfrdwy a Llyn Tegid SAC (Wales and England), 5- Deeside and Buckley Newt sites (UK0030132) (Wales), 6-Halkyn Mountains (Wales),

7	Plan or project documents, including any application documents	Internal : Documents on DMS folder External: On-line public Register here (PAN-029803 or application, BT4885IT for permit)
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8	Environmental Statement	Internal PAN-029803 - Environmental Statement.pdf External: https://publicregister.naturalresources.wales/Search/Download?RecordId=199163
9	Pre-application correspondence	PPN-01177 (under EPR/BT4885IT DMS or public portal folder)
10	NRW team responsible for preparing this HRA report, and lead officer	Installation and RSR permitting
11	Team or person responsible for approving the plan or project (competent authority role)	William Wallace, Senior Officer

2. Determining the need for a Habitats Regulations Assessment

2.1 Is there any possibility that the plan or project could negatively affect any European sites?	No
2.2 Is the whole of the plan or project directly and only connected with or necessary to the management of one or more European sites, for the purposes of conserving the habitats or species for which the European site(s) is/are designated?	No
2.3 Is there a possibility that the plan or project could affect any other feature of the European site(s) concerned, or of another European site, in a way that would	Yes

undermine that feature's conservation objectives?	
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3. Considering the likelihood of a significant effect (LSE)

3.1 Renewal of a project authorisation on the same or more restrictive terms as an extant authorisation

Is this a renewal of an extant authorisation which complies with NRW approved criteria for ruling out significant effects of renewals (see Part 2 of OGN200) without conducting a project-specific LSE test?	N/A
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3.2 Likelihood of significant effects (LSE) test

3.2.1 Which European sites might be affected by the plan or project?

(a)	Based on the plan or project specification, or information provided in the application, it is considered that these European sites have features which could be negatively affected by the plan or project	The operator had used a screening distance of 15 km, the standard screening distance for combustion units with a thermal input of 50MWth or more A. The following designated sites are within the 15 km. • Dee Estuary / Aber Dyfrdwy (UK0030131) (Wales and England) (SAC) • Dee Estuary / Aber Dyfrdwy (UK9013011) (Wales and England) (SPA) • Dee Estuary / Aber Dyfrdwy (UK0030131) (Wales and England) (RAMSAR) • River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (UK0030252) (SAC) • Deeside and Buckley Newt Sites (UK0030132) (England and Wales) • Halkyn Mountain / Mynydd Helygain (UK0030163) • Mersey Estuary (UK9005131) (England)
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		Alyn Valley Woods / Coedwigoedd Dyffryn Alun (UK0030078)
(b)	The potential for the plan or project to negatively affect these European sites was also initially considered, but can be ruled out without further consideration	N/A

3.2.2 Screening for likelihood of significant effect

Table 3.2.2 Screening assessment

Screening distance

The standard screening distance for an installation is 10 km, however for combustion units that have an thermal input of more than 50MWth, a screening threshold of 15 km applies.

Overview of impact pathways and likelihood of significant effects (LSE) test.

The main impact pathways from an installation including emission to air or water are as follows;

- Toxic contamination
- Nutrient enrichment
- Acidification
- Changes in salinity regime
- Changes in thermal regime
- Habitat loss
- Physical
- Smothering
- Turbidity
- Siltation
- Disturbance (noise)

Impacts from water discharge (including changes in salinity regime, changes in thermal regime, turbidity and siltation)

Among the changes is an upgrade effluent treatment plant. Effluent from the production process is sent to the effluent treatment plant for treatment. As per the existing/previous permitted operations, the effluent is discharge to the on-site lagoon (lagoon 3) and held in the lagoon before being pumped from the lagoon to the Dee via the white sand gutter listed as discharge point W1. All other discharge points (W2-W6) are existing permitted discharge of water runoff from surface drainage and are to remain unchanged as a result of the variation.

There will be no the changes to the permitted limits of flow rates in the existing permit (total flow, the maximum daily or the maximum tidal flow).

The only changes to emissions is the presence of epichlorohydrin based resin used for wet strength tissue monitored as absorbable organic halogens. For all other substances the only change will be the introduction of limits imposed on three substances (chemical oxygen demand, total phosphorus, total nitrogen). The previous version of the permit allowed discharge of these substances but were not subject to emission limits.

The site will have containment measures (secondary and tertiary) to prevent the accidental discharge of polluting liquids into the environment of potentially polluting liquids. The containment has been assessed and designed to the requirements outline in *CIRIA 736 Containment systems for the prevention of pollution, secondary, tertiary and other measures for industrial and commercial premises* which is considered best industrial standards.

As the only change in the variation (other than more stringent regulation the limits of substances already permitted discharge) in the presence of Polyamide epichlorohydrin, the only impact pathway is the toxic contamination. All other impact pathways from water discharge will not increase the impact over what is already permitted and have been seen screened out from likelihood of significant affects (pathways of Changes in salinity regime, Changes in thermal regime, Turbidity and Siltation).

Water - Toxic contamination

Polyamide epichlorohydrin does not have an environmental quality standard (EQS) or predicted no effects concentration (PNEC). The closest substance (epichlorohydrin) has a reported¹ PNEC of 1.06 µg/l (marine) to 10.6 µg/l (freshwater) which is also the limit of detection for monitoring of absorbable organic halogens (ISO 9562:2004). In the absence of any EQS or PNEC, the marine PNEC for epichlorohydrin of 1.06 µg/l, was used as the EQS to assess impacts of polyamide epichlorohydrin resin. The concentration was screened against the EQS/PNEC in line with the H1 guidance on water discharge to estuarine and coastal waters².

¹ [Safety data sheet Epichlorohydrin Themo Fischer Scientific](#)

² [Surface water pollution risk assessment for your environmental permit - GOV.UK](#)

Impact from air quality Air

The applicant has undertaken detailed and precautionary dispersion modelling of air emissions impacts, i.e. considering the highest/worst impact possible for a number of variables as explained in their submission³. This includes modelling with 5 years of meteorological data, and considering the highest modelled impact from different modelling “runs”. The modelling has been subject to detailed auditing by NRW experts, who are satisfied that the predictions within the applicant’s submitted report are suitable for use in permit determination.

Using the criteria described above, if on a site wide basis and considering the most sensitive feature, process contribution (PC) is insignificant, or Predicted environmental concentration (PEC) calculation shows that critical level and/or critical load is unlikely to be breached, then no likely significant effect (LSE) is concluded.

If site wide no-LSE cannot be concluded, then further information is provided, ready to inform appropriate assessment

This screening procedure is in accordance with permitting guidance “AQTAG 21” (2025) for determining likely significant effect.

Feature specific sensitivities to air pollutants are summarised below. This is followed by results for individual pollutants below, grouped by pollutant and by feature-specific sensitivity (or group)

Assessment of atmospheric concentration - Air emissions risk assessment for your environmental permit (Environment Agency guidance and adopted by NRW)

<https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>

Permitting guidance is that if the PC is <1% of the long term (annual average) Environmental standard (ES) – Critical level (CLE) or critical load (CLO) and <10% of the short term CLE (daily average) at receptors then the emission is insignificant, and will not impact the receptor, and no Likely significant effects (LSE) can be concluded. If not, then the Predicted Environmental Concentration (PEC) is considered. This is the expected concentration of the pollutant, taking into account existing “background” pollution and the proposed additional source. If the PEC is >70% of the ES, then no LSE can be concluded, as the level of pollution likely to cause harm to the site and/or its protected features is very unlikely to be reached.

³ Deeside Power Station. Air Dispersion Modelling Report. Version 4.0. 23 March 2025

The environmental standards are as follows;

Long Term (annual) NO_x, a long term (annual mean) critical level of 30 µg/m³ is used in line with the guidance

Short term (daily) NO_x; The critical level for short term (daily mean) NO_x is 75 µg/m³, but a upper limit of 200 µg/m³ can be used if the ozone levels are below the AOT critical level and the predicted environmental concentration of sulphur dioxide is below 10 µg/m³. For this assessment, the impacts are assessed against 75 µg/m³ but where it does not screen out at 75 µg/m³, the 200 µg/m³ is considered where evidence show it is appropriate, when ozone AOT40 and sulphur dioxide are below the critical level thresholds .

Annual SO₂ a long term (annual mean) critical level of 20 µg/m³ has been used unless otherwise stated (where either there is a site specific critical level, presences of ozone exceeds AOT40 level or there is presence of lichens)

Nutrient nitrogen and acid deposition Critical load, Unless otherwise stated the critical loads for nutrient nitrogen and acid deposition used in this assessment were taken from air pollution information system (APIS) [APIS app](#) | [APIS](#). The lowest critical load was used for the screening assessment for each feature (unless feature is not present within the section of the habitat/ screening distance of 15 km from the site).

Designated site feature	Relevant conservation objectives	Screening conclusion – SCREEN OUT’, ‘SCREEN IN’ or ‘IN COMB’	Explanation
European site name: Dee Estuary / Aber Dyfrdwy (UK0030131) SAC			
1. Estuaries	The Dee Estuary European Marine Site Natural England & the Countryside Council for Wales’ advice given under Regulation 33(2) of the	Screen In – Nutrient enrichment (Nitrogen Deposition)	All emission parameter are the highest predicted process contribution (PC) or predicted environmental concentration (PEC which is PC+ the background concentration) and therefore represents worst case scenario that would occur from this site.
2. mudflats and sandflats not covered by			

seawater at low tide	Conservation (Natural Habitats &c.) Regulations 1994	In-combination	
3. Salicornia and other annuals colonising mud and sand	Most sensitive critical level/load which can impact the features are outlined in APIS (APIS app APIS) and guidance Air emissions risk assessment for your environmental permit https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit	• Toxic contamination (NOx)	Toxic contamination
4. Atlantic salt meadow	Critical level NOx long term- 30 µg/m³ NOx Short term – 75 µg/m³ or 200 µg/m³ (the critical level of 200 µg/m³ can be used if ozone concentration is below AOT40⁴ level and ambient sulphur dioxide concentration is below 10 µg/m³) SO₂ – 10 µg/m³ Critical load Nutrient Nitrogen– 10 kgN/ha/Year	Screen out (all other parameters)	Emissions of NOx Short term (daily mean) The short-term process contribution (PC) was 17.6 µg/m³ (23.5% of the short-term critical level of 75 µg/m³) under combined heat and power plant and 22.8 µg/m³ (30.4% of the critical level) under back-up boiler. The applicant used an upper limit of 200 µg/m³ is applied be used⁵ where the sulphur dioxide predicted environmental concentration (PEC) does not exceed 10 µg/m³ and the ozone does not exceed the AOT40 limit for ozone. The PEC for sulphur dioxide was 2.95 µg/m³ or 29% of the critical level of 10 µg/m³. There was no exceedance of ozone above AOT40 in North Wales (as reported table 4-6 Annual Report 2024 Issue 1 Online Viewer - DEFRA UK Air - GOV.UK) As such, assessment against the higher level of 200 µg/m³ can be used in the screening of short-term concentration of NOx. Applying the upper critical level of 200 µg/m³, the highest short term PC is 11.6% of the critical level and the PEC is 38% of the upper critical level. Therefore the short-term atmospheric concentration of NOx from the site will not lead to adverse impacts on the designated features of the site.

⁴ Accumulated Ozone exposure over a Threshold of 40 ppb

⁵ [Air emissions risk assessment for your environmental permit - GOV.UK](#)

	Lower acid critical load – N/A for features located within the screening distance		Long term (annual mean) The process contribution of emissions of NO_x was 2.15 µg/m³ which is more than 1% (7.16%) of the critical level of 30 µg/m³. The operator's air quality impact assessment predicted environmental concentration (PEC) was 1.71 µg/m³, 57% of the critical level. However, this included the in-combination assessment (discussed in the relevant section). As under both CHP and back up boiler scenario detailed modelling showed the PEC is below 100% of the critical level (and less than 70% with the APIS background), the emissions screen out as insignificant. Emission of SO₂ The process contribution (PC) of SO₂ from the emissions from the site are 0.09 µg/m³ which is 0.86% of the SO₂ critical level of 10 µg/m³. As the PC is less than 1% of the critical level, the emissions screen out as insignificant. Nutrient enrichment - Nitrogen Deposition The nitrogen deposition process contribution was 0.22 KgN/ha/year which is 2.2% of the critical load of 10 KgN/ha/year. The PEC was 19.8 KgN/ha/year or 198% of the critical load and as such the emission does not screen out. Water The only changes water discharge is the presence of epichlorohydrin based resin in the discharge,
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			measured as absorbable organic halogens (AOX). The operator has provided evidence that the concentration would be at an annual average of 0.8 µg/l prior to discharge. The emissions are below the limit of detection and below 1 µg/l, discharge screens out from further assessment (as per H1 assessment for estuarine water) and would not cause impact alone or in-combination. Spot sample monitoring (at the limit of detection of 10 µg/l). Annual average limits and monitoring for AOX are place on the permit as required by best available technique for paper and pulp industries⁶. No other limits or volume discharged other than the implementation of emission limits to substances that had already been permitted in the discharge but not limited. Acidification – no impact pathway. The only acid sensitive features of this SAC are the sand dunes and dry heaths. These are located 21 km from the installation, outside the risk screening of 10-15 km. The features within screening distance do not have an acid critical load. (see Other qualifying features or features of interest within the SAC, SPA and Ramsar designations outside the European marine Site for details) Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime
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⁶ [COMMISSION IMPLEMENTING DECISION of 26 September 2014 establishing the best available techniques \(BAT\) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the production of pulp, paper and board](#)

			No impact pathway- Installation is not hydrologically connected to the designated site
5. Annual vegetation of drift lines		In-combination • Toxic contamination (NOx) Screen Out All others	Toxic contamination Emissions of NOx Short Term NOx The short term process contribution was 17.6 µg/m³ (23.5% of the short term critical level of 75 µg/m³) under combined heat and power plant and 22.8 µg/m³ (30.4% of the critical level) under back-up boiler. An upper limit of 200 µg/m³ can be used⁷ where the sulphur dioxide (PEC) does not exceed 10 µg/m³ and the ozone does not exceed the AOT40 limit for ozone. The PEC sulphur dioxide was 2.95 µg/m³ or 29% of the critical level of 10 µg/m³. There was no exceedance of ozone above AOT40 in North Wales (as reported table 4-6 Annual Report 2024 Issue 1 Online Viewer - DEFRA UK Air - GOV.UK). As such, assessment against the higher level of 200 µg/m³ can be used to determine if the screening for short concentration of NOx. Applying the upper critical level of 200 µg/m³, the highest short term process contribution is 11.6% of the critical level and the PEC is 38% of the upper critical level. Therefore the short term atmospheric concentration of NOx from the site will not lead to adverse impacts on the designated features of the site. The long term NOx

⁷ [Air emissions risk assessment for your environmental permit - GOV.UK](https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit)

		The process contribution of emissions of NO_x was 2.15 µg/m³ which is more than 1% (7.16%) of the critical level of 30 µg/m³. The operator's air quality impact assessment predicted environmental concentration (PEC) was 1.71 µg/m³, 57% of the critical level. As under both situations detailed modelling showed the PEC is below 100% of the critical level (and less than 70% with the APIS background), the emissions screen out as insignificant Emission of SO₂ The process contribution (PC) of SO₂ from the emissions from the site are 0.09 µg/m³ which is 0.43% of the SO₂ critical level of 20 µg/m³. As the PC is less than 1% of the critical level, the emissions screen out as insignificant. Nutrient enrichment - Nitrogen Deposition No Critical load value – feature listed as not sensitive to nitrogen deposition (outlined in APIS) Acidification- See feature 1 Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime No impact pathway- Installation is not hydrologically connected to the designated site
6. Lampetra fluviatilis (river lamprey)	Screen Out All impact pathways	Toxic contamination, Nutrient Enrichment. Water – There only changes water discharge is the presence of epichlorohydrin based resin in the

7. Petromyzon marinus (sea lamprey)		Screen Out All impact pathways	discharge, measured as absorbable organic halogens (AOX). The operator has provided evidence that the concentration would be at an annual average of around 1 µg/l prior to further dilution at the on site lagoon prior to final, the emissions would be far below the limit of detection and are unlikely to be at any concentration that would cause impact alone or in-combination. Spot sample monitoring (limit of detection of 10 µg/l) and annual average limits are placed on the permit as required by best available technique for paper and pulp industries. Air- No direct impact pathway. Aquatic features are not sensitive to airborne concentrations of NO_x or SO₂ Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime No impact pathway- Installation is not hydrologically connected to the designated site Acidification Not directly impact but an impact pathways through acidification from associated features. APIS does not have an acid critical load for this feature. The sensitive habitats within range are not sensitive to acidity (see Features 1-4)
Other qualifying features or features of		Screen Out All impact pathways	All impact pathways The dunes systems are located within a region of the designated the SAC, at the Talacre Warren and

interest within the SAC, SPA and Ramsar designations outside the European marine Site - Fixed dunes with herbaceous vegetation ("grey dunes") - Embryonic shifting dunes - Humid dune slacks			Gronant Dune (which are also designated as a SSSI). These areas are located 21 km (north west) of the installation and the proposed emissions to air, outside the screening distance of 10 km (CHP) and 15 km (backup boilers). As such there is no impact pathway to damage these features and their extent/distribution due to the distance between the feature and the proposal. Source; SAC Hab map1 Appendix X
European site name: Dee Estuary / Aber Dyfrydwy (Wales and England) (RAMSAR)			
H1130 Estuaries	Features Listed in Revised draft Oct 2009 Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994	Screen in Nutrient enrichment In-combination Toxic contamination Screen Out All other parameters	See Dee Estuary / Aber Dyfrydwy (Wales and England) SAC feature 1
H1140 Mudflats and sandflats not covered by seawater at low tide		Screen in Nutrient enrichment In-combination Toxic contamination Screen Out All other parameters	See Dee Estuary / Aber Dyfrydwy (Wales and England) SAC feature 2
H1210 Annual vegetation of drift lines		Screen Out All impact pathways	See SAC Feature 5 Annual vegetation of drift lines

H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts		Screen Out All impact pathways	The vegetated sea cliffs habitat is noted in the conservation plan as being located at Hilbre Island, which is 18 km from the proposal. As such the feature is outside the risk screening distance of 15 km.
H1310 Salicornia and other annuals colonising mud and sand		Screen in Nutrient enrichment In-combination Toxic contamination Screen Out All other parameters	See Dee Estuary / Aber Dyfrydwy (Wales and England) SAC feature 3
H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritima)		Screen in Nutrient enrichment In-combination Toxic contamination Screen Out All other parameters	See SAC feature 5
H2110 Embryonic shifting dunes		Screen Out All impact pathways	Features are located 21 km away from the proposal, outside risk screening distance (15 km), See Dee Estuary / Aber Dyfrydwy (Wales and England) SAC (Other qualifying features or features of interest) for details.
H2120 Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")			
H2130 Fixed dunes with herbaceous vegetation ("grey dunes")			

H2190 Humid dune slacks			
European site name: UK9013011 Dee Estuary / Aber Dyfrdwy (SPA)			
Sandwich tern <i>Sterna sandicensis</i> A191	Natural England & the Countryside Council for Wales' advice given under Regulation 33(2) of the Conservation (Natural Habitats &c.) Regulations 1994 <i>Section 2.2 Interest features of the Dee Estuary European marine site under the EU Birds Directive</i> Critical Load: 10 KgN/Ha/Year** ** The Terns population species (little tern, Sandwich tern and common tern) have most sensitive supporting habitats to nutrient nitrogen listed as grey dunes with an associated critical load of 5 KgN/Ha/Year as listed on APIS. However as outlined in the Dee Estuary SAC for "other qualifying features)" the coastal dune habitats are located 21 km from the proposal and outside the screening distance.	Screen in Nutrient enrichment In-combination Toxic contamination-air Screen Out Toxic-water All other parameters	Although the SPA also covers the area south of the installation (also designated as a SSSI Shotton Lagoon and Reedbeds), the area of highest impact is in the same location as the Dee Estuary SAC. Water Toxic contamination The only changes water discharge is the presence of epichlorohydrin based resin in the discharge, measured as absorbable organic halogens (AOX). The operator has provided evidence that the concentration would be at an annual average of 0.8 µg/l prior to discharge. The emissions are below the limit of detection and below 1 µg/l, discharge screens out from further assessment (as per H1 assessment for estuarine water) and would not cause impact alone or in-combination. Spot sample monitoring (at the limit of detection of 10 µg/l). Annual average limits and monitoring for AOX are place on the permit as required by best available technique for paper and pulp industries⁸. No other limits or volume discharged other than the implementation of emission limits to substances that had already been permitted in the discharge but not limited.
Little tern <i>Sterna albifrons</i> A195			
Common Tern <i>Sterna Hirundo</i> A193			
Bar- Tailed Godwit <i>Limosa lapponica</i>			
Redshank <i>Tringa totanus</i>			
Shelduck <i>Tadorna tadorna</i>			
Teal <i>Anas crecca</i>			

⁸ [COMMISSION IMPLEMENTING DECISION of 26 September 2014 establishing the best available techniques \(BAT\) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the production of pulp, paper and board](#)

Pintail Anas <i>acuta</i>	The impact to bird populations from nitrogen deposition is through supporting habitats. As the supporting habitat in the area (within the screening distance) is the Atlantic salt marsh a critical load of 10 KgN/Ha/year has been applied for the screening threshold as this is the habitat type located within this area (which could impact bird populations).		Air Toxic contamination Emissions of NOx The short term process contribution was 17.6 µg/m³ (23.5% of the short term critical level of 75 µg/m³) under combined heat and power plant and 22.8 µg/m³ (30.4% of the critical level) under back-up boiler. An upper limit of 200 µg/m³ can be used⁹ where the sulphur dioxide (PEC) does not exceed 10 µg/m³ and the ozone does not exceed the AOT40 limit for ozone. The PEC sulphur dioxide was 2.95 µg/m³ or 29% of the critical level of 10 µg/m³. There was no exceedance of ozone above AOT40 in North Wales (as reported table 4-6 Annual Report 2024 Issue 1 Online Viewer - DEFRA UK Air - GOV.UK) As such, assessment against the higher level of 200 µg/m³ can be used to determine if the screening for short concentration of NOx. Applying the upper critical level of 200 µg/m³, the highest short term process contribution is 11.6% of the critical level and the PEC is 38% of the upper critical level. Therefore the short term atmospheric concentration of NOx from the site will not lead to adverse impacts on the designated features of the site. The process contribution of emissions of NOx was 1.58 µg/m³ which is more than 1% (5.3%) of the critical level of 30 µg/m³. The operator's air quality impact assessment predicted environmental concentration (PEC) was 1.68 µg/m³, 56.1% of the critical level. However this
Oystercatcher <i>Haematopus ostralegus</i>			
Grey Plover <i>Pluvialis squatarola</i>			
Knot <i>Calidris canutus islandica</i>			
Dunlin <i>Calidris alpina</i>			
Black-tailed godwit <i>Limosa limosa islandica</i>			
Curlew <i>Numenius arquata</i>			
Internationally important (>20 000 individuals) wintering water birds assemblage including the nationally important:			
• Wigeon • Sanderling • Cormorant			

⁹ [Air emissions risk assessment for your environmental permit - GOV.UK](https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit)

Great crested grebe			included the in-combination assessment (discussed in the relevant section). As under both situations detailed modelling showed the PEC is below 100% of the critical level (and less than 70% with the APIS background), the emissions screen out as insignificant. Emissions of SO₂ The process contribution (PC) of SO₂ from the emissions from the site are 0.09 µg/m³ which is 0.46% of the SO₂ critical level of 20 µg/m³. As the PC is less than 1% of the critical level, the emissions screen out as insignificant. Nutrient enrichment - Nitrogen Deposition The nitrogen deposition process contribution was 0.22 KgN/ha/Year which is 2.2% of the critical load of 10 KgN/ha/Year. The PEC was 19.8 KgN/ha/Year or 198% of the critical load and as such the emission do not screen out. Water – There are no changes to the discharge limits or volume discharged other than the implementation of emission limits to substances that had already been permitted in the discharge but not limited. Acidification The main acid sensitive features of this SPA was listed as the sand dunes and dry heaths. These are located 21 km from the installation, outside the risk screening of 10-15 km.
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			However the Reedbed (Shotton SSSI) are located with screening distance and have an acid critical load of 4.856 keq/ha/year. As this is the supporting habitat within screening range that has an acid critical load, this was assessed against for screening likelihood of impact. The process contribution of acid deposition from atmospheric NO_x and SO₂ was 0.03 keq/ha/year, which is 0.52% of the lower acid critical load and as such screens out as insignificant. Disturbance Disturbance could potentially occur from noise coming from the installation. However the risk of noise impact from the site is low as the variation is on an existing permitted site, and located in an already industries area. The site has existing operations similar to the proposal. The potential sources of noise from the site after the changes would not be significantly different than those currently present on site. The change in site operations would therefore unlikely cause any increase in noise disturbance over the existing operations. Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime No impact pathway - Installation is not hydrologically connected to the designated site. Habitat loss See Nutrient enrichment.
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			Physical damage No Impact pathway.
European site name: River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (UK0030252) (SAC)			
1. Watercourses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachium Vegetation	CORE MANAGEMENT PLAN INCLUDING CONSERVATION OBJECTIVES FOR River Dee and Bala Lake/Afon Dyfrdwy a Llyn Tegid SAC Approved by Davel Powelle 2022 CONSERVATION OBJECTIVES FOR N2K SITES (naturalresources.wales) Most sensitive critical level/load for that can impact the features are outline in APIS (APIS app APIS) Air emissions risk assessment for your environmental permit https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit Most sensitive lower critical level NOx long term- 30 µg/m³	In-combination – Emissions of NOx Screen Out – all other parameters	Air - Emissions of NOx Short term The short term process contribution was 7.6 µg/m³ 10.1% of the short term critical level of 75 µg/m³ and 3.8% of the upper critical level of 200 µg/m³ (applicable as SO₂ PEC is below 10 µg/m³ and there was no exceedance of ozone above AOT40 in North Wales (as reported table 4-6 Annual Report 2024 Issue 1 Online Viewer - DEFRA UK Air - GOV.UK). As the PC was less than 10% the emission screens out as insignificant. Long term The modelling showed that the worst-case long-term process contribution of NOx emission would be 0.37 µg/m³, which is 1.24 % of the critical level (30 µg/m³). The applicant had stated a PEC of 27.5 µg/m³ or 92% of the critical level, however their PEC included other plans and projects (PC+ background+ other plans and projects) which will be discussed in section 5.1. Using the 2021-2022 APIS background of 11.0 µg/m³, the PEC (PC + Background) is 15.1 µg/m³ which is 39.9% of the critical level. As such the emission screens out alone but is considered for in-combination. Emissions of SO₂

	NOx Short term – 75 µg/m³ SO₂ – 10 µg/m³)* Critical load Nutrient Nitrogen– 10 kgN/ha/Year*** <i>***The only critical loads listed are for features outside the risk screening distance of 10-15 km. However the applicant has assessed against 10 kgN/Ha/Year. in the absence of any other load this value will be used for plant/habitats.</i> Lower acid critical load – N/A for features located within the screening distance		The process contribution (PC) of SO₂ from the emissions from the site was around 0.014 µg/m³ or 0.07% of the SO₂ critical level of 20 µg/m³. As the PC is less than 1% of the critical level, the emissions screen out as insignificant Water The only changes water discharge is the presence of epichlorohydrin based resin in the discharge, measured as absorbable organic halogens (AOX). The operator has provided evidence that the concentration, prior to discharge, would be at an 0.8 µg/l. The emissions are far below the limit of detection of 10 µg/l and are unlikely to be at any concentration that would cause impact alone or in-combination. Monitoring (at the limit of detection of 10 µg/l). Annual average limits and monitoring for AOX are place on the permit as required by best available technique for paper and pulp industries. No other limits or volume discharged other than the implementation of emission limits to substances that had already been permitted in the discharge but not limited. Nutrient enrichment The worst case scenario, the deposition is around 0.04 kgN/Ha/Year (0.37%) of the critical load of 10 KgN/Ha/Year and as such screens out as insignificant. Acidification
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			The highest process contribution of acid deposition was less than 0.01 Keq/Ha/year which is less than 0.1% of the lower acid critical load of 3.94 Keq/Ha/Year. As such the acidification screens out as insignificant. Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime No impact pathway- Installation is not hydrologically connected to the designated site Habitat loss, Physical damage No Impact pathway.
2. Atlantic salmon <i>Salmo salar</i>		Screen out	Toxic contamination Air; No impact pathway – there are no discharge to water. Aquatic features are not sensitive to airborne concentrations of NO₂. Water: No impact pathway – No changes to water discharge volumes and no increase on any emission limits Nutrient enrichment No impact pathway – The proposal will not involve any discharge to water Aquatic features have a low sensitivity to nutrient deposition from atmospheric nitrogen. Feature does not have any critical load values for nitrogen deposition. Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime No impact pathway- Installation is not hydrologically connected to the designated site

			Acidification The highest process contribution of acid deposition was less than 0.01 Keq/Ha/year which is less than 0.1% of the lower acid critical load of 3.94 Keq/Ha/Year. As such the acidification screens out as insignificant. Habitat loss, Physical damage No Impact pathway.
3. Floating water-plantain <i>Luronium natans</i>		Screen out	The extent of this designated feature and habitat management unit is located at Llyn Tegid, approximately 51 km from the proposal and therefore this feature, located outside the risk screening distance of 10 km. As such there is no impact pathway to damage this species or its extent/distribution within the lake.
4. Sea lamprey <i>Petromyzon marinus</i>		Screen out	See comments for 2. Atlantic salmon <i>Salmo salar</i>
5. Brook lamprey <i>Lampetra planer</i>		Screen out	See comments for 2. Atlantic salmon <i>Salmo salar</i>
6. River Lamprey <i>Lampetra fluviatilis</i>		Screen out	See comments for 2. Atlantic salmon <i>Salmo salar</i>
7. Bullhead <i>Cottus gobi</i>		Screen out	See comments for 2. Atlantic salmon <i>Salmo salar</i>
8. European otter <i>Lutra lutra</i>		In-combination – Toxic contamination Screen out- all other parameters	Air - Emissions of NOx Short Term The short term process contribution was 7.6 µg/m³ 10.1% of the short term critical level of 75 µg/m³ and 3.8% of the upper critical level of 200 µg/m³ (applicable as SO₂ PEC is below 10 µg/m³ and there

			was no exceedance of ozone above AOT40 in North Wales (as reported table 4-6 Annual Report 2024 Issue 1 Online Viewer - DEFRA UK Air - GOV.UK). As the PC was less than 10% the emission screens out as insignificant. Long term The modelling showed that the worst-case long-term process contribution of NOx emission would be 0.37 µg/m³, which is 1.24 % of the critical level (30 µg/m³). The applicant had stated a PEC of 27.5 µg/m³ or 92% of the critical level, however their PEC included other plans and projects (PC+ background+ other plans and projects) which will be discussed in section 5.1. Using the 2021-2022 background of 11.0 µg/m³, the PEC (PC + Background) is 15.1 µg/m³ which is 39.9% of the critical level. As such the emission screens out alone but is considered for in-combination Emissions of SO₂ The process contribution (PC) of SO₂ from the emissions from the site was around 0.014 µg/m³ or 0.07% of the SO₂ critical level of 20 µg/m³. As the PC is less than 1% of the critical level, the emissions screen out as insignificant Nutrient enrichment Not directly impacted but an impact pathway could occur through loss of habitat. The worst case scenario, the deposition is around 0.04 kgN/Ha/Year (0.37%) of the critical load of 10
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			KgN/Ha/Year and as such screens out as insignificant. Acidification Not directly impacted but an impact pathway could occur through loss of habitat. The highest process contribution of acid deposition was less than 0.01 Keq/Ha/year which is less than 0.1% of the lower acid critical load of 3.94 Keq/Ha/Year. As such the acidification screens out as insignificant. Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime No impact pathway- Installation is not hydrologically connected to the designated site Disturbance, Habitat loss, Physical damage No Impact pathway.
European site name: Deeside and Buckley Newt sites (UK0030132)			
1. Great crested newt <i>Triturus cristatus</i> (EU Species Code: 1166)	CORE MANAGEMENT PLAN INCLUDING CONSERVATION OBJECTIVES FOR Deeside and Buckley Newt Sites Special Area of Conservation (SAC) 2013 02 06 Deeside & Buckley Newt Sites SAC Management Plan Eng	Screen In – Acidification (See feature 2) All other parameters Screen out	Air (toxic contamination) The main impact pathway is through emissions to air of oxides of nitrogen (NOx), sulphur dioxide (SO₂), deposition of atmospheric nitrogen and acidification from NOx and SO₂. The short term process contribution is 2.97 µg/m³ which is 4% of the lower short term critical level (75 µg/m³). As the process contribution is below the screening threshold of 1% long term and 10% short

			term, the atmospheric concentration screens out as insignificant. Atmospheric oxides of nitrogen had a long term process contribution of 0.11 µg/m³ (CHP scenario) which is 0.37% of the long term critical level. Atmospheric SO₂ had a long term process contribution of less than 0.03% of the sulphur critical level (20 µg/m³). Nutrient enrichment and Acidification (deposition) Although not directly impacted through acidification from deposition, the feature can be indirectly impacted through acidification of the habitat features (see feature 2 for details). Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime No impact pathway- Installation is not hydrologically connected to the designated site Disturbance, Habitat loss, Physical damage No Impact pathway.
2. Old sessile oak woodland with Ilex and Blechnum (EU Habitat Code 91AO)		Screen In – Acidification Screen out – all other impact	The main impact pathway is through emissions to air of oxides of nitrogen (NO_x), sulphur dioxide (SO₂), deposition of atmospheric nitrogen and acidification from NO_x and SO₂. Air (toxic contamination)

		Screen out - See Feature 1 Great crested newt <i>Triturus cristatus</i> (EU Species Code: 1166) for details. Nutrient enrichment The process contribution of the nitrogen deposition from emissions were 0.01 KgN/ha/year which is 0.11% of the critical load of 10 KgN/ha/year. As process contribution is less than 1% the nitrogen deposition from the proposal screen out as insignificant. Acidification The process contribution of was predicted by the applicant as 0.03 Keq/Ha/Year, which was more 2% of the lower acid critical level and the predicted environmental concentration was more than 150%* of the lower acid critical level. As such the impacts do not screen out and have to be assessed at appropriate assessment. <i>*150% using APIS background for forest (105% using grassland).</i> Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime No impact pathway - installation is not hydrologically connected to the designated site. Habitat loss, Physical damage No Impact pathway.
European site name: Mersey Estuary (UK9005131)		

Common shelduck (Non-breeding) <i>Tadorna tadorna</i>	Relevant conservation objectives listed in “Mersey Estuary Conservation objectives SPA and Mersey Estuary SPA Citation”	Screen out	The main impact pathway that could cause damage to the features is through the emissions of oxides of nitrogen and deposition and acidification from the atmospheric nitrogen. Air pollution information system (APIS) has a critical load for the features of 10 kg/ha/year.
Eurasian teal <i>Anas crecca</i>			
Northern pintail <i>Anas acuta</i>	Natural England		
European golden plover <i>Pluvialis apricaria</i>	European Site Conservation Objectives for Mersey Estuary SPA - UK9005131		The air emission risk assessment and modelling carried out by the operator under both “boiler and CHP” scenarios showed that the following worst case scenarios for the relevant impact pathways:
Dunlin <i>Calidris alpina alpina</i> ;	Most sensitive critical level/load for relevant features outline in APIS (APIS app APIS) and guidance Air emissions risk assessment for your environmental permit https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit		Air (toxic contamination) Atmospheric oxides of nitrogen had a long term process contribution of 0.06 µg/m ³ (CHP scenario) which is 0.2% of the long term critical level. The short term process contribution is 1.0 µg/m ³ which is 1.3% of the short term critical level (75 µg/m ³). As the process contribution is below the screening threshold of 1% long term and 10% short term, the atmospheric concentration screens out as insignificant.
Black-tailed godwit <i>Limosa limosa islandica</i>			
Common redshank <i>Tringa totanus</i>	Most sensitive lower critical level NOx long term- 30 µg/m ³ NOx Short term – 75 µg/m ³ SO ₂ – 10 µg/m ³)* Critical load Nutrient Nitrogen– 10 kgN/ha/Year Lower acid critical load – 4.856 Keq/Ha/Year (<i>applicant</i>)		Atmospheric SO ₂ , had a long term process contribution of less than 0.002 µg/m ³ which is less than 0.01% of the sulphur dioxide critical level (20 µg/m ³). Nutrient enrichment The nitrogen deposition process contribution under main CHP operation and boiler operation were less than 0.01 kgN/Ha/year (0.06%) of the critical load of 10 kg N/ha/yr during CHP operation)

	<i>used a more stringent total acid critical load of 1.863 keq/ha/year)</i>		Acidification Acidification was predicted as less than 0.01 keq/ha/year which was 0.02% of the lower acid critical load*. <i>*applicant used a more stringent total acid critical load of 1.863 keq/ha/year.</i> Disturbance There is no conceivable impact from that noise from the proposal to the designated site to cause any disturbance at the Mersey Estuary given the distance of 10 km. Turbidity, Siltation, Changes in salinity regime and Changes in thermal regime No impact pathway - installation is not hydrologically connected to the designated site. Habitat loss, Physical damage No Impact pathway.
European site name: Halkyn Mountain / Mynydd Helygain (UK0030163)			
1.Calaminarian grassland of the <i>Violetalia calaminariae</i> type (6130)	2013 02 06 Halkyn Mountain - Mynydd Helygain SAC Management Plan Eng Most sensitive critical level/load for that can impact the features are outline in APIS (APIS app APIS) and guidance Air	Screen out	The main impact pathway that could cause damage to the features is through the emissions of oxides of nitrogen and deposition and acidification from the atmospheric nitrogen. Air pollution information system (APIS) has a critical load for the features of 10 kg/ha/year. The site is not hydrologically connected to the discharge so no impacts from water discharge. Air emission (toxic contamination)

	emissions risk assessment for your environmental permit https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit Most sensitive lower critical level NOx long term- 30 µg/m³ NOx Short term – 75 µg/m³ SO₂ – 20 µg/m³ Critical load Nutrient Nitrogen– 10 kgN/ha/Year Lower acid critical load – 4.856 Keq/ha/Year for Calaminarian grassland of the Violetalia calaminariae and 0.924 Keq/ha/Year for European dry heath.	Atmospheric oxides of nitrogen had a long term process contribution of 0.02 µg/m³ (CHP scenario) which is 0.08% of the long term critical level. The short term process contribution is 0.74 µg/m³ which is 0.99% of the lower short term critical level (75 µg/m³) and the PEC is 59% of the critical level (less than 70%). As the process contribution is below the screening threshold of 1% long term and 10% short term, the atmospheric concentration screens out as insignificant. Atmospheric SO₂, had a long term process contribution of less than 0.01 µg/m³ which is less than 0.05% of the sulphur critical level (20 µg/m³). Nutrient Enrichment The nitrogen deposition process contribution under main CHP operation and boiler operation were less than 0.002 kgN/Ha/year, (0.02% of the critical load of 10 kg N/ha/yr during CHP operation). As this is far below 1% of the critical load, the emission screens out as insignificant. Acidification Acidification was predicted as less than 0.01% of the lower acid critical load of 4.856 Keq/Ha/Year. As such the emission screens out as insignificant. Habitat loss, Physical damage No Impact pathway.
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2.Great crested newt <i>Triturus cristatus</i>		Screen out	The main impact pathway is through emission to air and damage of NO_x and SO₂ to supporting habitat from nitrogen deposition and acidification. The air quality impact assessment showed that the impacts from air emissions and deposition screened out as insignificant. See Feature 1 for detailed assessment.
3.Annex I habitats present as a qualifying feature, but not a primary reason for site selection includes: • European dry heath • Semi-natural dry grassland and scrubland facies on calcareous substrate • Molinia meadows on calcareous peaty or clayey-silt-laden soils (<i>Molinia caerulea</i>)		Screen out	All other parameters see Feature 1. Acidification The highest process contribution of acidification was predicted as less than 0.0004856 keq/ha/year** which is less than 0.05% of the lower acid critical load of 0.924 Keq/Ha/Year. <i>** The Air quality impact assessment has assessed against the critical load of 4.856 Keq/Ha/Year. The had rounded 2 decimal places but based on their assessment that the impact were less than <0.01% of 4.856) it can be calculated, the highest the process contribution can be 0.0004856 Keq/Ha/Year (rounded to 0.0005).</i> Habitat loss, Physical damage No Impact pathway.
Alyn Valley Woods / Coedwigoedd Dyffryn Alun (UK0030078)			

1. Mixed woodland on base-rich soils associated with rocky slopes - Tilio-Acerion forests of slopes, screes and ravines	CORE MANAGEMENT PLAN INCLUDING CONSERVATION OBJECTIVES FOR Alyn Valley Woods/ Coedwigoedd Dyffryn Alyn SAC	Screen out	Air emission (toxic contamination) Atmospheric oxides of nitrogen had a long term process contribution of 0.05 µg/m³ (CHP scenario) which is 0.16% of the long term critical level. The short term process contribution is 3.4 µg/m³ which is 4.5% of the lower short term critical level (75 µg/m³). As the process contribution is below the screening threshold of 1% long term and 10% short term, the atmospheric concentration screens out as insignificant. Atmospheric SO₂, had a long term process contribution of less than 0.01 µg/m³ and is less than 0.01% of the sulphur dioxide critical level (10 µg/m³)* and as such screens out as insignificant. <i>*(Lichens present under Feature 3 and therefore the critical level of 10 µg/m³ is applicable to this site)*</i> Nutrient Enrichment The nitrogen deposition process contribution under main CHP operation and boiler operation was 0.01 kgN/Ha/year (0.2% of the critical load of 5 kgN/ha/yr during CHP operation). As this is far below 1% of the critical load, the emission screens out as insignificant. Acidification Acidification was predicted as less than 0.01 keq/ha/year which is less than 0.6%* of the lower acid critical load. As this was below 1% of the critical load the emission screens out as insignificant. <i>*(APIS Critical load values lower total acid critical load of 1.752 Keq/ha/Year (Air quality impact assessment assessed against 1.863 Keq/ha/Year). We have screened against the more stringent value. The applicant has</i>
2. Alder woodlands on Floodplains - Alluvial forests with Alnus glutinosa and Fraxinus excelsior (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)			
3. Dry grasslands and scrublands on chalk or limestone - Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>)			

		provide a PC of 0.02% of the critical load of 1.863 (approximately 0.00037 Keq/ha/Year which would be 0.0216% of critical load of 1.752 Keq/ha/Year) Habitat loss, Physical damage No Impact pathway.
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TABLE 3.2.3 Screening decision of the plan or project 'alone'	
~~(a) If the screening conclusion for <u>all</u> features for all sites in Table 3.2.2 is 'SCREEN OUT'~~	~~The plan or project is not likely to have a significant effect on any European site, and no further consideration under the Habitats Regulations is required in order to determine the approval/application.~~
(b) If the conclusion for <u>any</u> features in Table 3.2.2 is 'SCREEN IN'	The plan or project is likely to have a significant effect on one or more European sites and therefore an appropriate assessment is required.
~~(c) If there are <u>no</u> features in Table 3.2.2 that are 'SCREEN IN' and <u>any</u> features that are 'IN COMB'~~	~~The plan or project is not likely to have a significant effect on any European sites when considered alone, but the possibility of significant effects in combination with other plans and projects needs to be considered.~~

4. Appropriate assessment of the plan or project when considered alone

4.1 Assessment of plan or project as defined

Table 4.1 Appropriate assessment			
European site feature/s	Description of impacts	Assessment in view of conservation objectives	Can adverse effect on site integrity be ruled out? 'YES' or 'NO'
European site name: Dee Estuary/ Aber Dyfrdwy (UK0030131) (Wales and England) (SAC) • Dee Estuary/ Aber Dyfrdwy (UK9013011) (Wales and England) (SPA) • Dee Estuary/ Aber Dyfrdwy (UK0030131) (Wales and England) (RAMSAR)			
Dee Estuary SAC, SPA and Ramsar SAC/Ramsar: 1. Estuaries 2. mudflats and sandflats not covered by seawater at low tide 3. Salicornia and other annuals colonising mud and sand	Nutrient Enrichment (Nitrogen Deposition) The nitrogen deposition process contribution was 0.138 KgN/ha/Year which is 1.38% of the critical load of 10 KgN/ha/Year. The PEC was 19.6 KgN/ha/Year or 196% of the critical load and as such the emission do not screen out. As the process contribution is above 1% of the critical load and the PEC is above 100% of the critical load, the emissions do not screen out and have to be assessed in more detail to determine likelihood of adverse impacts.	The following conservation objectives of the SAC can be found here but the key ones that can be impacted through nutrient enrichment are as follows; Feature 1 i. the aggregate total extent of all estuarine communities within the site is maintained; ii. the spatial distribution of estuarine communities within the site is maintained; iii. the extent of individual estuarine habitat features within the site is maintained;	Yes

4. Atlantic salt meadow 5. Annual vegetation of drift lines SPA/Ramsar: • Sandwich tern <i>Sterna sandicensis</i> • Little tern <i>Sterna albifrons</i> • Common Tern <i>Sterna Hirundo</i> • Bar- Tailed Godwit <i>Limosa lapponica</i> • Redshank <i>Tringa tetanus</i> • Shelduck <i>Tadorna tadorna</i> • Teal <i>Anas crecca</i> • Pintail <i>Anas acuta</i> • Oystercatcher <i>Haematopus ostralegus</i> • Grey Plover <i>Pluvialis squatarola</i> • Knot <i>Calidris canutus islandica</i> • Dunlin <i>Calidris alpina</i>	The applicant's PECs includes other plans and projects and used 2019-2021 background which is higher (at 18.3 KgN/ha/Year) compared to the latest background 2022-2024 of 14.3 KgN/ha/Year.	v. the variety and extent of any notable subtidal sediment communities is maintained; vi. the variety and extent of notable intertidal hard substrata communities is maintained; vii. the spatial and temporal patterns of salinity, suspended sediments and nutrients concentrations are maintained within limits sufficient to satisfy the requirements of statements (i) to (vi) above. (iv – not included as this objective is not impact through emissions to air) Feature 2 i. the total extent of mudflat and sandflat communities within the site is maintained; ii. the proportions of individual mudflat and sandflat communities within the site are maintained; iv. The abundance of typical species of the mudflat and sandflat feature within the site is maintained. (iii – not included as this objective is not impact through emissions to air)	
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• Black-tailed godwit <i>Limosa limosa islandica</i> • Curlew <i>Numenius arquata</i> • Internationally important (>20 000 individuals) wintering water birds assemblage including the nationally important: ○ Wigeon ○ Sanderling ○ Cormorant ○ Great crested grebe		Feature 3 Salicornia and other annuals colonising mud and sand i. the total extent of pioneer saltmarsh vegetation communities within the site is maintained; ii. the presence of pioneer saltmarsh vegetation communities as part of transitions from intertidal sediment communities to higher saltmarsh are maintained; iii. the abundance of the typical species of the pioneer saltmarsh vegetation communities is maintained; iv. the abundance of the notable species of the pioneer saltmarsh vegetation communities is maintained. and, regardless of natural processes , condition (v) is also met: v. the overall extent and abundance of common cord grass <i>Spartina anglica</i> is not increasing within the pioneer saltmarsh zone. Feature 4 i. The total extent of Atlantic salt meadow vegetation communities within the site is maintained;	
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		ii. The proportions of individual Atlantic salt meadow vegetation communities within the site are maintained; iii. the zonation of Atlantic salt meadow vegetation communities and their transitions to fresh water and terrestrial vegetation are maintained; iv. The morphology of saltmarsh creeks and pans and the process of their evolution are maintained; v. The extent of ungrazed areas of salt meadow within the estuary is maintained and there is no increase in grazing intensity over the rest of the salt meadow; vi. The relative abundance of the typical species of the Atlantic salt meadow vegetation communities is maintained; vii. The abundance of the notable species of the Atlantic salt meadow vegetation communities is maintained. The conservation objectives for the SPA can potentially be impacted through the loss of supporting habitat.	
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		The worst case area occurs in part of the site - referred to locally as the “Kop” located less than 330 metres to the north of the paper mill. The survey of the Kop (see appendix 9) confirmed presence of <i>Urtica dioica</i>-<i>Cirsium arvense</i> community, which thrives in nutrient rich environments and therefore an indicator of possible exceedances of nutrient nitrogen in this area. Deposition of nitrogen can cause enrichment. Notably conservation objectives for feature for salt marsh (feature 3) can be heavily impacted from the increase in nitrogen depositions, particular cord grass taking over in the presence of enrichment. As such there deposition has potential to cause some impacts to the site. However the following context is considered for the site: a) Assessment against highest metroglacial data – The air quality impact assessment had assessed against 5 year metrological data. For the initial screening, the	
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		highest impact year (2019) was used, which had a deposition of 0.22 KgN/ha/Year. However the other years (2016-2018 and 2020), showed a highest impact of 0.17 KgN/ha/Year to 0.19 KgN/ha/Year, with the 5 year average (mean) of 0.188 KgN/ha/Year. b) Backup boiler Scenario - The applicant has modelled the impact from the backup boiler on the assumption that the it would be running full time. In reality this would only be the case for the initial 6 months before the CHPs are online and the boiler would only be running less than 1 month per year (730 hours per year). As such the Process contribution (1.59% of the critical load) would not likely occur as this has assumed full time. Adjusting the backup process contribution to 730 hours the long term nitrogen deposition would be 0.01 KgN/ha/Year (0.1% of the critical load). A limitation will be put into the permit for the boiler to run only when the CHPs are not fully online.	
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		c) Variation to an existing permitted site - It should also be noted that this proposal is a variation is to an existing permit that is already permitted for emissions from combustion plants including associated equipment on site and two boilers (boiler 3 and boiler 6) that have a thermal input of 38MW and 45MW, giving total of 83MWth. The old boilers had emission limits of 150 mg/m³ compared to the lower value of 30 mg/m³ for the new CHPs that are being put in place. In this context the new CHPs are of a lower impact (rather than the applicant using the old boilers). The CHP will have continuous monitoring in place The site was running under these conditions until 2021, and therefore the latest APIS background (from 2021) would have captured emissions from the site's existing operation emissions within background. d) Changes to the existing biomass boiler (boiler 7) - the changes to the site (as a substantial variation)	
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		has also initiated NRW to review the existing biomass boiler (boiler 7), including emission parameter against the Waste Incineration BRef and current BAT-AELs. This would reduce NOx emissions from the existing biomass boiler to 180 mg/m³ from the currently permitted 200 mg/m³ which was a major contributor to the NOx loading from the existing site. Compliance with the BAT conclusions as well as additional techniques to reduce impacts further are to be carried out in a parallel application (PAN-032826). Given that the new CHP and backup boilers are replacing existing permitted process and changes to the emission from the existing biomass boiler (boiler 7). The changes to the site are unlikely to lead to an increase in impact over what was previously permitted. As such, although the proposed change would not result in an exceedance at this part of the designated site, given the context of the existing permitted activities, the precautionary approach (over modelling emission) and the review of emissions from the existing waste incinerator, the increase in likelihood of	
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		damage over the existing permitted emissions from the site when it operated as a newsprint production site are relatively small and the variation would not likely result in an increase in impact over the existing site. The PEC would have also doubled counted contributions from the existing site (including the waste incinerator which is decreasing the NOx emission limit)	
European site name: Deeside and Buckley Newt sites (UK0030132)			

		as a mixture or in single aged groups • Plentiful native tree seedlings throughout the site will develop into saplings in the open glades • The field and ground layers will contain such species as ivy, bramble, honeysuckle, broad-buckler fern, male fern and greater wood-rush • Exotic species such as rhododendron and cherry laurel will not be tolerated within the woodland • There will be abundant dead and dying trees with holes and hollows, rot columns, torn off limbs and rotten branches throughout the woodland • All factors affecting the achievement of these conditions are under control In addition, the following conservation objectives for Great Crested Newt <i>Triturus cristatus</i> found under 4.1 of the management plan could be affected by impacts to the oak woodland; The terrestrial habitat surrounding breeding ponds will comprise of refuge areas for newts foraging areas, areas of	
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		hibernacula and corridors which will aid the dispersal of Great Crested Newts; Off site habitats that function as stepping stone or corridors located between SAC compartments will be maintained for migration, dispersal, foraging and genetic exchange purposes. The oak woodland (feature 2) is listed as a key habitat in management units 48 and 51 which are located at the Connah's Quay proportion of the SAC. This is also the location of the highest impacts from the proposal are predicted to occur and as such there is an impact pathway. Acidification did not screen out as insignificant. To determine if predicted rates of acidification are high enough to potentially cause adverse affects to the features, the emissions were assessed against the upper end of the appropriate acid critical loads for the features. When assessed against the upper acid critical load (of 2.99 Keq/Ha/Year) the process contribution is at 1% and the PEC (using a higher background on APIS) is 2.54 Keq/Ha/Year or 84% of the upper critical load. As the PEC is below 100% of the upper acid critical load, significant adverse	
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		effects are not likely to occur as a result of acid deposition. In addition the following factors are also considered to lower the likelihood of adverse impacts: • The boiler scenario also has an impact above 1% of the critical load. However the modelling was done on the basis that this will be operating all year. While the back-up boiler under normal operation, it will permitted to run for fewer than 730 hours per year. Given that the PEC for acidification is below 100% of the upper critical load and the fact that the modelling was under worst case scenario, significant adverse impacts are unlikely to occur and can be ruled out.	
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4.2 ~~Appropriate assessment of the plan or project taking into account additional conditions or restrictions imposed by the competent authority~~

Table 4.2 ~~Appropriate assessment of the plan or project taking into account additional conditions or restrictions~~				
European site name:				
European site Feature	Adverse effect(s)	Can adverse effect(s) be mitigated by additional imposed conditions or restrictions? 'YES' or 'NO'	Additional imposed mitigation measure(s)	Can adverse effect on site integrity be ruled out? 'YES' or 'NO'
European site name:				

4.3 Concluding the appropriate assessment of the plan or project alone

Table 4.3 Conclusion of the appropriate assessment alone	
(a) If Table 4.1, or the right hand column of Table 4.2 if applicable, is 'YES' for all features	It has been ascertained that the plan or project, when considered alone, will not adversely affect the integrity of any European sites.
~~(b) If there are any 'NO's in the right hand column of Table 4.2~~	~~It has not been ascertained that the plan or project, when considered alone, will not adversely affect the integrity of one or more European sites.~~
~~(c) Are there are any residual effects of the plan or project (not of mitigation measures) which, though not adverse on their own, could be significant when considered in combination with the effects of other plans or projects?~~	

5. In combination assessment

Table 5.1 Identification and assessment of in combination effects				
European site name: - European site name: Dee Estuary / Aber Dyfrdwy (UK0030131) (Wales and England) (SAC) - Dee Estuary / Aber Dyfrdwy (UK9013011) (Wales and England) (SPA) - Dee Estuary / Aber Dyfrdwy (UK0030131) (Wales and England) (RAMSAR)				
‘INCOMB’ impacts from screening Table 3.2.2 and/or residual effect from appropriate assessment in section 4	European site feature(s) concerned	Other plans or projects with effects that might interact with the effects of the plan or project to render its effects significant/adverse (if any)	Nature of the in combination effect (if any) and assessment in view of conservation objectives	Can significant or adverse in combination effects be ruled out for all features?
Toxic contamination atmospheric	Dee Estuary SAC, SPA and Ramsar SAC/Ramsar: 1. Estuaries 2. mudflats and sandflats not covered by seawater at low tide 3. Salicornia and other annuals colonising mud and sand	The following sites have been identified within 10 km screening distance (standard screening of installation site and therefore could act in-combination at these designated sites), that could have an in-combination contribution; 1. Deeside Power Station Variation to change an existing permit from a Combined Cycle Gas	The air quality impact assessment submitted with this application outlines that where predicted environmental concentrations (PEC) have been quoted, these include in-combination with other plans and projects, not including Deeside SPV, Connah’s Quay and Knauf . The CHP scenario represents the worst case scenario (as this has the higher impacts under normal/full time operation). NOx - Short term	Yes

	4. Atlantic salt meadow 5. Annual vegetation of drift lines SPA/Ramsar: • Sandwich Tern <i>Sterna sandicensis</i> • Little Tern <i>Sterna albifrons</i> • Common Tern <i>Sterna Hirundo</i> • Bar-Tailed Godwit <i>Limosa lapponica</i> • Redshank <i>Tringa tetanus</i> • Shelduck <i>Tadorna tadorna</i> • Teal <i>Anas crecca</i> • Pintail <i>Anas acuta</i> • Oystercatcher <i>Haematopus ostralegus</i>	Turbine (CCGT) to 11no. natural gas-fired reciprocating engines as a peaking plant. 2. Industrie Cartarie Tronchetti UK Limited emissions related to this application for Phases 1 and 2 of the development only. (The site has not yet been constructed and so emissions are not considered to form part of the background concentration.) 3. Castle Cement Limited emissions related to this application to add a carbon capture plant to the permit only. (The carbon capture plant has not yet been constructed and so emissions are not considered to form part of the background concentration.) 4. Deeside SPV Limited emissions related to this application for a new anaerobic digestion plant.	The applicant's PEC has considered other plans and projects; Park Adfer, Industrie Cartarie Tronchetti and Deeside power. The PEC was 89.6 µg/m³ which exceeded the lower critical level of 75 µg/m³ but would screen out as 44.5% of the upper for higher critical level of 200 µg/m³. Given that the in-combination PEC is <100% of the upper critical level, the sites will not cause any adverse impacts through in-combination. NOx - Long Term The main site of concern that would act in combination with this site is Deeside Power Station. The applicant's modelling considers in-combination with other plans and projects in their PEC. The long term PEC (including other plans and projects) for Shotton Mill is 22.6 µg/m³ or 75.4% of the critical level of 30 µg/m³. As the combined emissions are below 100% of the long term critical level, there is no adverse impact through in-combination impacts. Conclusion - Toxic contamination	
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	• Grey Plover <i>Pluvialis squatarola</i> • Knot <i>Calidris canutus islandica</i> • Dunlin <i>Calidris alpina</i> • Black-tailed Godwit <i>Limosa limosa islandica</i> • Curlew <i>Numenius Arquata</i> Internationally important (>20 000 individuals) wintering water birds assemblage including the nationally important: • Wigeon • Sanderling • Cormorant • Great Crested Grebe	5. Enfinium Parc Adfer Operations Limited – emissions related to this application to add a carbon capture plant to the permit only. 6. Uniper UK Limited Connah's Quay Low Carbon Power Project 7. Knauf Insulation Limited new mineral fibres production facility with submerged arc furnace. The following sites are in range of the subject site for in-combination but air quality dispersion modelling studies were not included in the applications; 4. Deeside SPV Limited – Applicant had not included in the in-combination as the air quality impact assessment was not completed at the time. 6. Connah's Quay Low Carbon Power Project- Applicant had not included in the in-	As the PEC, when taking into account the other relevant plans or projects, is less than 100% of the both the upper short term critical level and the long term critical level, adverse impact and in-combination can be ruled out.	
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		combination as the air quality impact assessment for Connaught Quay power station was not completed at the time of Shotton's air quality impact assessment. As such an in-combination assessment could not be carried out. The in-combination assessment from Connaught Quay power station will include emissions from this variation for Shotton paper mill 7. Knauf Insulation Limited Application for planning and permitting was submitted after the applicant had carried out in-combination impacts. As such an in-combination assessment could not be carried out. The in-combination assessment from Knauf insulation will include emissions from this variation for Shotton paper mill		
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Nutrient enrichment (Nitrogen Deposition)	Dee Estuary SAC, SPA and Ramsar SAC/Ramsar: 1. Estuaries 2. mudflats and sandflats not covered by seawater at low tide 3. Salicornia and other annuals colonising mud and sand 4. Atlantic salt meadow 5. Annual vegetation of drift lines. SPA/Ramsar: • Sandwich Tern <i>Sterna sandicensis</i> • Little Tern <i>Sterna albifrons</i> • Common Tern <i>Sterna Hirundo</i> • Bar-tailed Godwit	• Deeside Power Station • Industrie Cartarie Tronchetti UK Limited • Castle Cement Limited • Deeside SPV Limited • Enfinium Parc Adfer. • Uniper UK Limited • Knauf Insulation Limited Of the remaining sites (above) the site, the main one that has an in-combination impact with is Deeside Power.	The application's air quality impact assessment outlines that where predicted environmental concentrations (PEC) have been quoted, this takes into account in-combination with other plans or projects. The key features that can be undermine are list in section 4.1 (adverse impacts). The PEC was 19.6 KgN/Ha/Year 196%, with 0.138 KgN/Ha/Year (or 1.38%) and the rest coming from the background, other plan/projects and relevant road relevant by-receptor road traffic emission¹⁰ (which are usually not considered for point source emissions assessment). The background using the applicant assessment from 2019-2021, where as the latest background (2020-2022) used by other plans and projects decrease the background at this square grid from 18.35 KgN/Ha/Year to 16.3 KgN/Ha/Year (184% to 163% of the critical level). As other plans and projects have used the 2020-2022 backgrounds,	Yes
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¹⁰ [PAN-029803 Air Emissions Risk Assessment Section 3.9](#)

	<i>Limosa lapponica</i> • Redshank <i>Tringa tetanus</i> • Shelduck <i>Tadorna tadorna</i> • Teal <i>Anas crecca</i> • Pintail <i>Anas acuta</i> • Oystercatcher <i>Haematopus ostralegus</i> • Grey Plover <i>Pluvialis squatarola</i> • Knot <i>Calidris canutus islandica</i> • Dunlin <i>Calidris alpina</i> • Black-tailed godwit <i>Limosa limosa islandica</i> • Curlew <i>Numenius Arquata</i> Internationally important (>20 000 individuals) wintering water birds		we have used these background for applicability with other plans/projects. In addition the applicant had included the following in the in-combination assessment: • Some of the emissions from Parc Adfer (at 200 mg/m³ which had been reduced to 150mg/m³) and the biomass boiler had been in operation before latest in background and therefore the impacts from these may have been doubled counted. • receptor road traffic emission which are usually not considered for point source emissions assessment, but was added by the applicant for completeness. The main site that will have in-combination impact is Deeside Power Station. Deeside Power Station is located adjacent to the west of Shotton Mill (see Figure 4 in Section 9. - Appendix). Both sites have their highest impact at the patch of land north of the A548 know as the “Kop”. This area has a mixture of features including marsh land.	
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	assemblage including the nationally important: • Wigeon • Sanderling • Cormorant • Great Crested Grebe		Previous surveys conducted in the area confirmed presence of nutrient-loving species. Given the two sites' close proximity, and the modelling from both showing highest impacts in this area, there is a potential for in-combination impacts. The cumulative PC taken from the air quality impact assessments of Deeside Power and Shotton Papermill was 0.11 KgN/Ha/year. including Deeside. The PC from shotton is 0.138 KgN/Ha/Year and the combined would be 0.248 KgN/Ha/Year or 2.48% of the critical load of 10 KgN/Ha/Year. The combined impacts are above 1% of the critical load however there are Shotton Papermill site was previously fully operating as a news paper print sites until 2021, with the biomass boiler running since then. The APIS background data from 2021, would have included missions from this site when it was operating as a newspaper print. The change in site impacts (comparison to the permitted emissions before and after the variation) would be minimal	
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			relative to the site's previous operation before the change. The site previously had 3 boilers One 38MW gas / light fuel oil (LFO) fuelled boiler and a 45 MW gas / LFO fuelled boiler. The variation is to replace these with two new 64 MWth gas turbines (and two x 68 MWth backup boiler), which have more stringent emission limits, (with the gas turbines having an emission limit of 30 mg/m³ from a 75 metre high stacks where as the old boilers had an emission limit of 150 mg/m³ from 25 meter high stack). The gas turbines also have continuous monitoring. As such the In addition the variation will also decrease the emissions of NOx from the waste incinerator (boiler 7) from 200 mg/m³ to 180 mg/m³ and a review of the waste incinerator (in a parallel application) will look into applying best available techniques to reduce impact further. This would partially reduced the cumulative impacts from in-combination. Although Deeside Power Station is an existing permitted site that is being varied, the site has not undertaken fossil fuel combustion since 2018. The variation is	
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			changing the site from a Combined Cycle Gas Turbine (CCGT) baseload power station with a net rated thermal input of 927MW to a peaking power plant with 11 engines (9.91MW each) with a combined aggregated thermal input of 109MW. The existing permits for both sites allow a much higher emission loading than their subsequent variations. As such the variation present a decrease in loading of substances over what was allowed under the previous permit (V013) Under the back boiler scenario The boiler is primarily expected to run only up to 1 month (730 hours) per-year. Given that the boiler will not be running for more than 730 hours and nitrogen deposition is measured over an annual basis, there would be no long term in-combination impacts for this scenario compared with the other plans or projects. Conclusion Both Deeside Power Station and Shotton Mill sites have an in-	
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			combination overlap at an area of the Dee Estuary protected site that is located to the north of the sites (See Figure 2 in Section 9 – Appendix) . However both of these sites are permit variations that decrease the maximum potential emissions loading over the previous permit versions. In the case of Shotton Paper Mill, the NOx emission limits for the waste incinerator are to be decrease which would reduce the in-combination affects arising from the two sites.	
European site name: River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (UK0030252) (SAC)				
Toxic contamination	- Calaminarian grassland of the <i>Violetalia calaminariae</i> type (6130) - European otter <i>Lutra lutra</i>	The following sites are identified as having an in-combination impact 8. Deeside Power Station Variation to change an existing permit from a Combined Cycle Gas Turbine (CCGT) to 11no. natural gas-fired reciprocating engines as a peaking plant. 9. Industrie Cartarie Tronchetti UK Limited emissions related to this application for Phases 1	NOx - Long Term The main site of concern that would act in combination are Deeside power station, Industrie Cartarie Tronchetti UK Limited and Park Adfer. The applicant's modelling considers in-combination with other plans and projects in their PEC. The long term PEC (including other plans and projects) for Shotton Mill is 27.6 µg/m³ or 92% of the critical level of 30 µg/m³. As the combined emissions are below 100% of the	Yes

		and 2 of the development only. (The site has not yet been constructed and so emissions are not considered to form part of the background concentration.) 10. Castle Cement Limited emissions related to this application to add a carbon capture plant to the permit only. (The carbon capture plant has not yet been constructed and so emissions are not considered to form part of the background concentration.) 11. Deeside SPV Limited emissions related to this application for a new anaerobic digestion plant. 12. Enfinium Parc Adfer Operations Limited – emissions related to this application to add a carbon capture plant to the permit only.	long term critical level, there is no likelihood of adverse impact through in-combination impacts. The background used was from 2020-2022 which has a much higher background level (11.0 µg/m³) compared to present (2022-2024) level of 9.9 (11.0 µg/m³) Conclusion No in-combination impacts as the combined impact is less than 100% of the critical level.	
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		13. Uniper UK Limited Connah's Quay Low Carbon Power Project 14. Knauf Insulation Limited new mineral fibres production facility with submerged arc furnace. The following sites are in range of the subject site for in-combination but air quality dispersion modelling studies were not included in the applications; 4. Deeside SPV Limited – Applicant had not included in the in-combination as the air quality impact assessment was not completed at the time. 6. Connah's Quay Low Carbon Power Project- Applicant had not included in the in- combination as the air quality impact assessment for Connahs quey power station was not completed at the time of		
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		Shotton's air quality impact assessment. As such an in-combination assessment could not be carried out. The in-combination assessment from Connah Quay power station will include emissions from this variation for Shotton paper mill 7. Knauf Insulation Limited Application for planning and permitting was submitted after the applicant had carried out in-combination impacts. As such an in-combination assessment could not be carried out. The in-combination assessment from Knauf insulation will include emissions from this variation for Shotton paper mill		
(a) If the right hand column is 'YES' for all rows		The plan or project, when considered in combination with other plans and projects, is either not likely to have a significant effect on, or will not adversely affect the integrity of, any European site.		

~~(b) If any rows in the right hand column are 'NO'~~	~~The plan or project is likely to have a significant effect on, or an adverse effect on, European site/s in combination with other plans or projects.~~
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Table 5.2 Addressing in combination effects

In combination effect	Additional imposed mitigation measures,	Taking into account any additional measures identified and how they would be applied, can adverse effects on site features from in combination effects be ruled out? 'YES' or 'NO'
In combination assessment: conclusion		
(a) If the right hand column is 'YES' in all cases	It can be concluded that the plan or project will not adversely affect the integrity of any European sites, either alone or in combination with other plans or projects.	
(b) If any row is 'NO' in the right hand column	It <u>cannot</u> be concluded that the plan or project will not adversely affect the integrity of any European sites, when considered in combination with other plans or projects.	

6. Conclusion

~~HRA is not required because there is no conceivable impact on any European sites. (As documented in section 2.1)~~	
~~HRA is not required because the whole of the plan or project is directly connected with or necessary to the management of one or more European sites, for the purposes of conserving the habitats or species for which the site(s) is/are designated, <u>and</u> the plan or project is not likely to have a significant effect on any other European sites. (As documented in section 2.2 and 2.3)~~	
~~This project is a renewal of a current permission which complies with NRW agreed criteria for ruling out likely significant effects of a renewal without conducting a project-specific LSE test. Therefore, it is considered not likely to have a significant effect on any European sites, either alone or in combination with other plans or projects. (As documented in section 3.1 of this form)~~	
~~The plan or project has been screened for likelihood of significant effects and is considered not likely to have a significant effect on any European sites. (As documented in section 3.2 of this form, and section 5 if applicable)~~	
In light of the conclusions of an appropriate assessment it has been established that the plan or project will not adversely affect the integrity of any European sites, taking into account any conditions or restrictions as applicable, either alone or in combination with other plans or projects. (As documented in section 4 of this form, and section 5 if applicable)	X
~~In light of the conclusions of the appropriate assessment, it has <u>not</u> been ascertained that the plan or project will not adversely affect the integrity of any European sites, as documented in section 4 of this form, and section 5 if applicable. Approval for the plan or project <u>cannot</u> be given unless either: - the plan or project specification, and/or the terms under which it might be approved, are modified so as to remove the risk of adverse effects, and a revised HRA is prepared, or - the plan or project (not being an SSSI consent*) satisfies the requirements for a derogation and a Derogation Notice is prepared and submitted for consideration by the appropriate authority, normally Welsh Ministers (*SSSI consents cannot be given as derogations)~~	
Signed: W Wallace	

Name: William Wallace

Position: Senior Officer, Installation and RSR Permitting

Date: 04/06/2026 (original version)

19/10/2026 (Version 3)

Was this HRA conclusion an escalated decision? YES or NO

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7. Consultation with the ANCB and how sections 2, 3, 4 and 5 of this HRA report (as applicable) take into account that advice.

Relevant section of the HRA report	Correspondence and/or meetings with the ANCB	Description of how the comments from the ANCB have been taken into account
2		
3		
4 5	Meeting with Neil Smith on 12/05/2026 and meeting with Heather Lewis on 13/05/2026	Discussion around the of species present in the area of the Dee Estuary where the highest impacts of on this application (PAN-029803) and Deeside Power Station (PAN-028461) occur. Specifics of discussion included the Phase 2 Saltmarsh Survey¹¹ and the distribution of saltmarsh, swamp and grassland habitat types within this area, and the conclusion that this distribution was indicative of transitional saltmarsh habitat type.
	Meeting with Michele Hardwick and Natural England's response 21/07/2026	Noise: <i>"Where there is a change in use, there should be an assessment of noise impacts on sensitive features (such as SPA/Ramsar bird populations) during the demolition, construction and operation phases. This should include information on noise producing works, existing baseline noise levels, and predicted noise levels (measured in LA_{eq} and La_{max}). Note that as a rule of thumb, we advise that an increase of 3dB (at receptor) from baseline to predicted noise levels should be considered as significant and subject to further assessment."</i> Considerations in HRA: Construction and demolition are out of scope of the EPR permit. In terms of continuous operations, the noise impact assessment was not used in the HRA as it was completed to BS4142 standard which is designed for impacts to human receptors and not bird species. However comparison noise impact assessments from 2021 and the current application showed that the variation will result in a 1dB-2dB increase over the 2021 report (less than the 3dB screening advice above). As outlined in Section 3.2 of the HRA, the new

¹¹ Dargie, T. 2001. [NVC survey of the saltmarsh and other habitats in the Dee and Clwyd estuaries 2000](#). CCW Contract Science Report no. 450. Countryside Council for Wales, Bangor.

		activities are similar to the previous ones (as the site is converting from newspaper print to production of cardboard and tissue paper) and therefore the sources and types of noise would not be different over what would have been previously emitted from the site. Air quality: <i>“Looking at the most recent information you sent through, and bearing in mind our previous comments still stand, I think our main comments would relate to the changes in the technologies being deployed at the site and the need for a robust and up to date assessment of the impacts from these changes. In particular, the introduction of new emission sources and their impacts on deposition on the Dee Estuary SAC/SPA/Ramsar and Inner Marsh Farm SSSI, both alone and in combination.</i> <i>Since the original planning application in 2024 there have been a number of subsequent planning applications that have been approved and development is moving at pace in the area (e.g. Connahs Quay, Parc Adfer, Knauf etc). Many of these applications have deposition impacts, alone or in combination, on the Dee Estuary and our concerns relate to the potential damage this could do to the areas of saltmarsh that are known to be sensitive to changes in small changes in chemistry.</i> <i>We would want to see evidence that the proposed permit variation had clearly assessed the impact of its new additional emissions in combination with these other developments to demonstrate that.”</i> Considerations in HRA: Sections 4 and Section 5 consider the impacts alone and in-combination and in context of the site (as a result of the variation and as previously permitted). As outlined in Section 5, at the time of duly making, the air quality impacts assessments for <i>Connah’s Quay and Knauf</i> were not completed and as such the applicant was not able to complete an in-combination assessment that included impacts from those sites. Dispersion modelling for the Connah’s Quay Low Carbon Power Project will provide the baseline in-combination with all other plans and projects. The applicant for Connah’s Quay has included the latest air quality impact assessment used for Shotton Mill.
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8. Countersignature

I have reviewed the HRA documented in this form and confirm that I agree*/do not agree* with the conclusion recorded in section 6. (*delete as applicable)

Additional comments (if any):

Signed:

Name:

Position:

Date:

9. Appendix - Supporting information

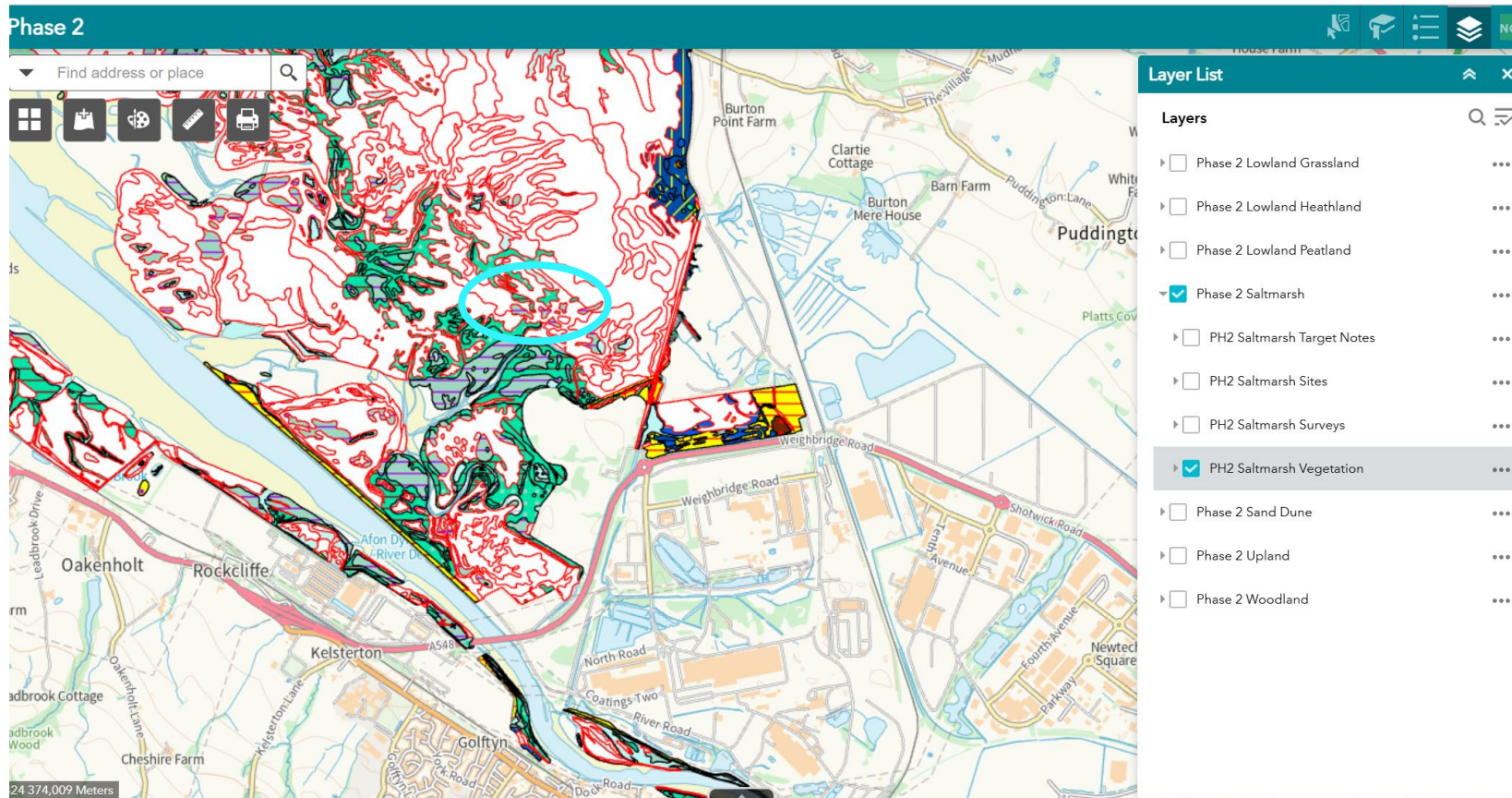


Figure 2: Area of the SAC with the highest impact from nitrogen deposition.

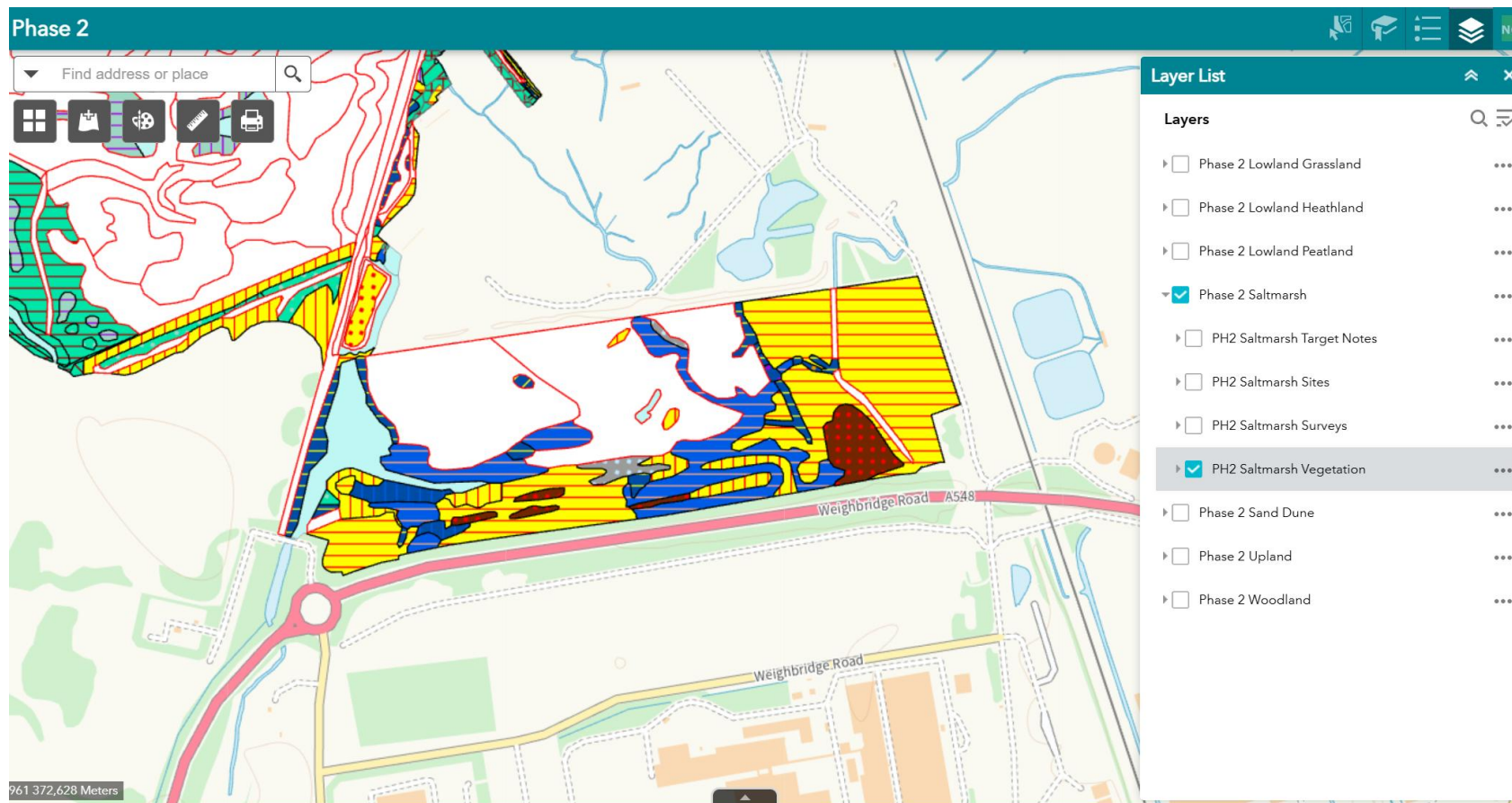


Figure 3: Features located within the area of impact based on local surveys.

Table 1: NVC codes taken from NVC Names Codes spreadsheet on JNCC website on 12/05/2026 (available [here](#)).

 MG1a	Arrhenatherum elatius grassland, Festuca rubra sub-community
 MG1b	Arrhenatherum elatius grassland, Urtica dioica sub-community

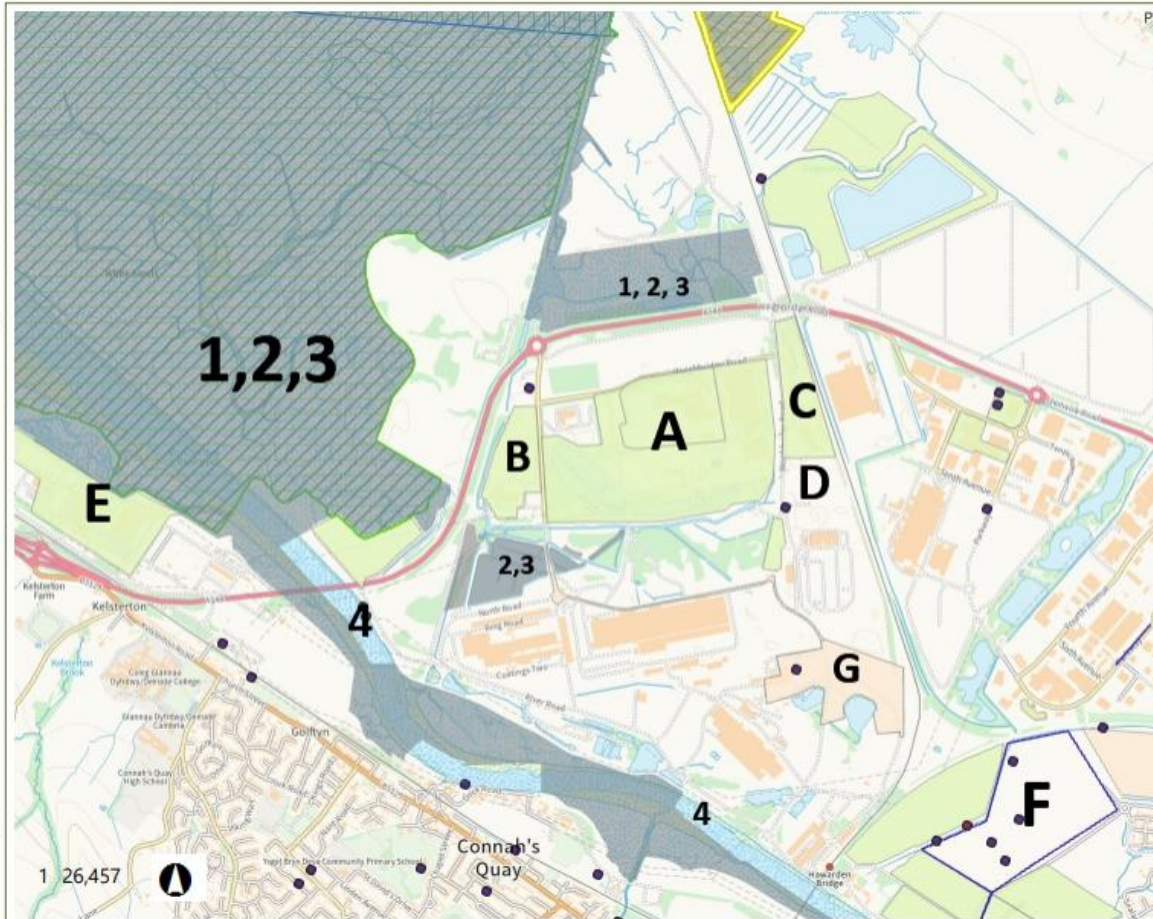
 S4a	Phragmites australis swamp and reed-beds, Phragmites australis sub-community
 S19a	Eleocharis palustris swamp, Eleocharis palustris sub-community
 OV25	Urtica dioica-Cirsium arvense community
 W1	Salix cinerea-Galium palustre woodland
 S21a	Scirpus maritimus swamp, Scirpus maritimus sub-community
 S28	Phalaris arundinacea tall-herb fen



Legend

- Special Areas of Conservation
- Ramsar Sites
- Special Protection Areas England
- Proposed Special Protection Areas
- Special Areas of Conservation England
- Ramsar Sites England
- Permit Application Point
 - Application
 - Permit
- Permit Application Line
 - Application
 - Permit
- Permit Application Polygon
 - Application
 - Permit

Notes



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Hawlfraint y Goron a hawl cronfa ddata Arrolwg Orddans Cyfoeth Naturiol Cymru, 100019741, 2015. This
map is a user generated static output from an Internet mapping site and is for reference only. Data layers
that appear on this map may or may not be accurate, current, or otherwise reliable.

Figure 4: Map showing designated habitats with other plans and other projects. Key – Plans/projects: A-Shotton Paper Mill, B-Deeside power, C-Park Adfer, D-Deeside SPV, E- Uniper UK Limited and Connah's Quay power station, F- Industrie Cartarie Tronchetti UK Limited and G-Knauf Insulation Limited. Habitats: 1- Dee Estuary SAC, 2 and 3 Dee Estuary SPA and Ramsar and 4 River Dee and Bala Lakes (SAC)

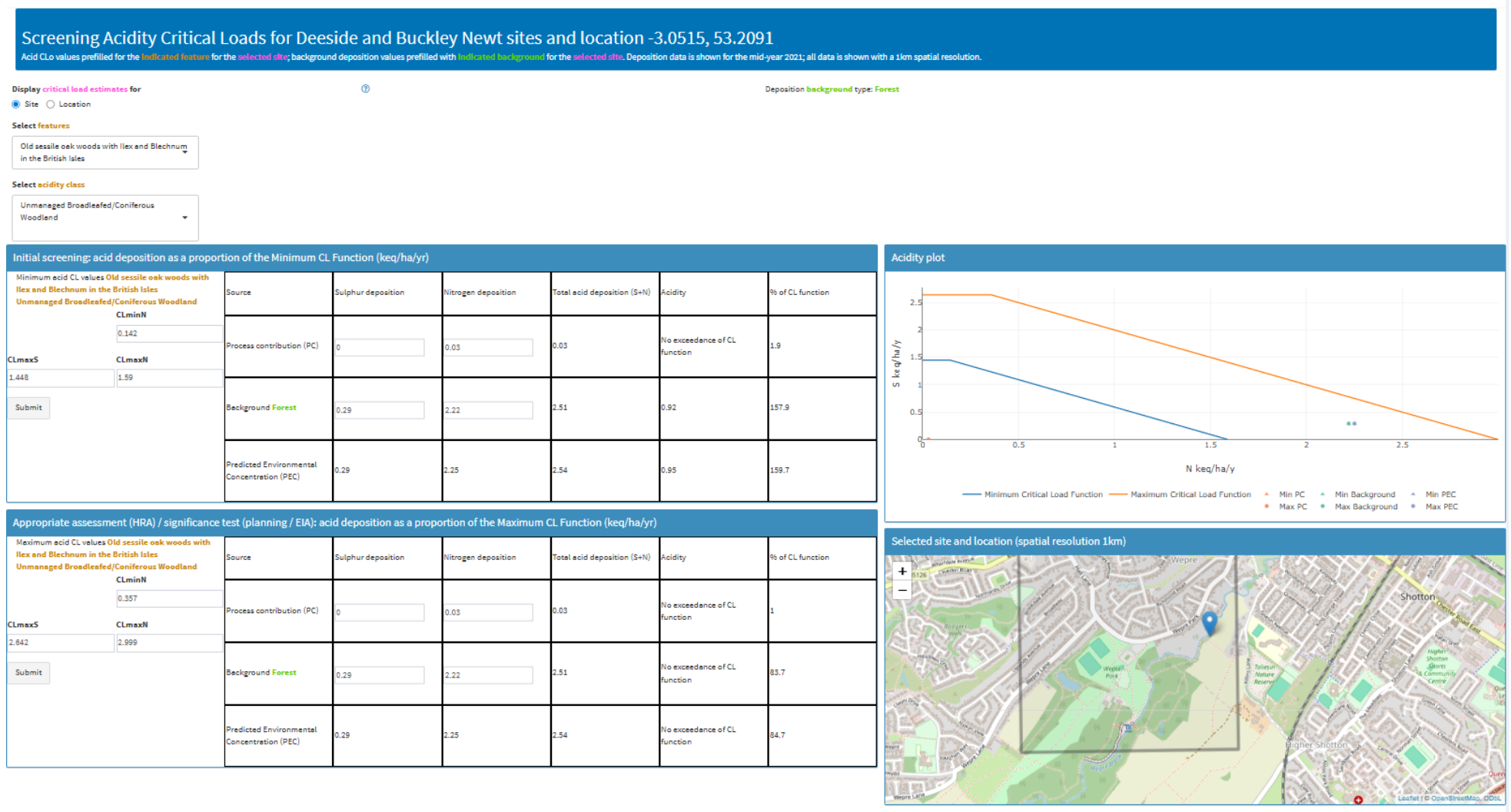


Figure 5: Screen shot of acid deposition calculator form APIS for the acid critical loads at Deeside and Buckley Newt sites SAC.