

Record of a Habitats Regulations Assessment of a project

OGN 200 Form 1

Document owner: Protected Sites Team, EPP

Version History:

Document Version	Date Published	Summary of Changes
1.0	March 2016	Document created
1.1	30 November 2017	References to the 2010 Habitats Regulations updated to reflect new consolidated version of the regulations which entered into force on 30 th November 2017; References to KSP and National Services Directorates updated to EPP
1.2	28 June 2018	With marked up changes in light of ruling in CJEU case c-323/17 'People over Wind'.
1.3	27 June 2019	With marked up changes in light of ruling in CJEU case c-323/17 'People over Wind'. See Guidance here

Next review date: April 2019

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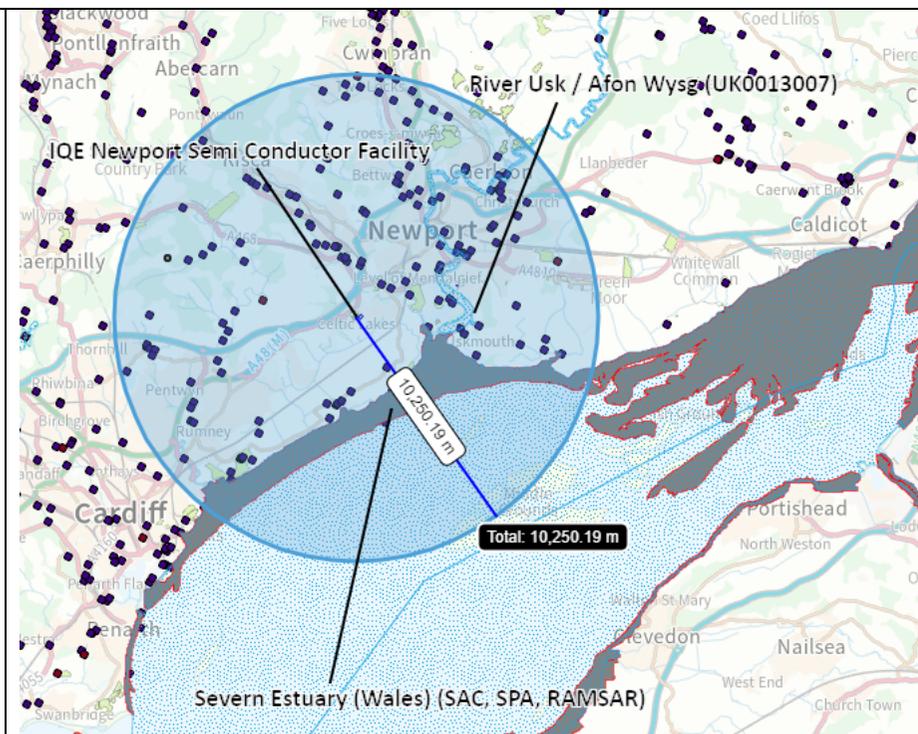
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1. Project Details

1(a): Project details where an external party has applied to NRW for any form of authorisation	
Application reference number (if applicable)	PAN-024249 (EPR/AB3893FZ/V003)
Date application received	<i>Duly Made 07/08/2024</i>
Applicant details	IQE Silicon Compounds Ltd
Activity proposed	<p>IQE Silicon Compounds Limited are applying to vary their EPR permit for Newport semiconductor manufacturing facility (permit number EPR/AB3893FZ) to increase production at the facility. This would consist of the following changes to the site:</p> <ul style="list-style-type: none"> • Increase the number of reactors (which consists of Gallium Nitride (GaN) and Gallium arsenide reactors) from 20 to 92 (increase of 72 reactors) which would result in additional point source to air (A4a and A5-A8). • Addition of 4 natural gas fired boilers (below 1 MWth input) (emission points A12-A15) with one of the boilers being used as a backup. • Addition to the permit of an existing but previously unlisted emission point A11 (for 4 existing boilers) • Addition of associated equipment including additional fans, transformers and chillers • Additional storage of raw materials on site including cooling water chemicals, chlorine gases, propane, silane and ammonia. • Addition of two backup diesel generators (emission points A9 and A10). These would only be used either when there is an emergency (loss of power in the area) or for testing and are expect to run for no more than 500 hours a year. • Increasing the site boundary with additional land to the south of the existing site <p>The changes will result in increase in emissions to air from the site which consist of the following substances:</p> <ul style="list-style-type: none"> • Oxides of Nitrogen (NO, NO₂ and N₂O expressed as NO_x) • Carbon monoxide • Ammonia • Chlorine • Arsine • Phosphine

	<ul style="list-style-type: none"> • Volatile organic compounds (including propane) • Trace amounts of metal organic compound <p>The site will have various abatement techniques in place to reduce the emissions of the substances (including plasma abatement and chemisorption) to reduce the emissions of the process substances to air. Of the above listed only NOx and ammonia have an ecological standard for assessment on impacts, although the other substances had been assessed for human health and deemed to have screened out as insignificant. The changes would also include new equipment located (including those outdoors) which will increase the noise levels being produced by the site.</p> <p>All process effluent is discharged to sewer under a trade effluent consent (where it would be treated at a waste water treatment works that would have existing limits in place). The only discharge to surface water is from uncontaminated rainwater runoff.</p>
Relevant legislation	Environmental permitting regulation 2016 Industrial emissions directive 2010 Medium combustion plant directive

Location



	 <p>Address : Newport Semi Conductor Facility, Imperial Park, Celtic Way, Newport, NP10 8BE Grid reference: ST 28227 84462</p>
Application documents	<i>Integral see DMS here:</i> EPR-AB3893FZ (sharepoint.com) External : Public register - Customer Portal (naturalresources.wales)
Environmental Statement	N/A
Pre-application correspondence	PPN-01116
NRW team responsible for drafting this HRA report, and name of lead officer	William Wallace Installation and RSR permitting

2. Determining the need for a Habitats Regulations Assessment

2.1 Is the whole of the project directly connected with or necessary to the management of one or more Natura 2000 sites, for the purposes of conserving the habitats or species for which the Natura 2000 site(s) is/are designated?	No
2.2 Is there a possibility that the project could affect a different Natura 2000 site to the one(s) the project is intended to conserve?	No
2.3 Is it necessary to carry out an HRA?	Yes

3. Considering the likelihood of a significant effect (LSE)

3.1 Renewal of a permission on the same or more restrictive terms as the extant permission

Is this project a renewal of a current permission which complies with NRW approved criteria for ruling out significant effects of renewals (see section 6.2A of OGN 200) without conducting a project-specific LSE test?	No
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3.2 Likelihood of significant effects (LSE) test

<p>3.2.1 Which Natura 2000 sites might be affected by the proposal?</p>	<p>Based on the project specification or information provided in the application, it is considered that the following Natura 2000 sites have features which could be affected by the project:</p> <ul style="list-style-type: none"> • Severn Estuary (Wales) (SAC, SPA, RAMSAR) (UK0013030) – <i>located 2.7 km to the south east and 3.6 km to the south of the facility</i> • River Usk / Afon Wysg (UK0013007) <i>located 3.5 km south east of the facility</i> <p>The potential for the project to affect the following Natura 2000 sites was also initially considered, but can be ruled out without further consideration:</p> <ul style="list-style-type: none"> • N/A 	
<p>3.2.2 Screening assessment</p>		
	<p>Assessment of likelihood of significant effect</p>	
	<p>I Relevant conservation objectives</p>	<p>II Potential impact pathway</p>
<p>Severn Estuary (SAC)</p>		
<p><i>SAC interest feature 1: Estuaries</i></p>	<p>Conservation objectives are outlined in the following document</p> <p><i>“Natural England & the Countryside Council for Wales’ advice given under Regulation 33(2)(a) of the Conservation (Natural Habitats, &c.) Regulations 1994, as amended. June 2009”</i></p>	<p>Toxic Contamination</p> <p>The variation will result in additional emissions of gas to atmosphere, including carbon monoxide, phosphine, arsenic, ammonia and nitrous oxides.</p> <p>However the only gases that has a quantifiable limit for ecological receptors are oxides of nitrogen (NO, NO₂ expressed as NO_x) and ammonia. However the other gases (CO, Phosphine and arsenic) were assessed for human health (of which the receptors are located closer to the installation) and the concentration were shown to be very low and and screened</p>

	<p>The Severn Estuary / Môr Hafren (naturalresources.wales)</p>	<p>out as insignificant. As such these are unlikely to cause any impact on the ecological receptors</p> <p>Nitrous oxide</p> <p>The applicant had modelled for 2 situations. The first is for normal operations and the second is for emergency operations, where the 2x diesel generators (5 MWth) will have to be operational to provide electricity to the site in the event of a power outage. As such the applicant has modelled for both scenarios, with both long and short term emissions considered for normal operation and short term only for emergency operation.</p> <p>For normal operation the highest concentration of NOx at the designated site would be 0.06 µg/m³ or 0.08% of the lower short term critical level of 75 µg/m³ and <0.01* µg/m³ (or <0.1% of the long term critical level of 30 µg/m³). As the process contribution of the emissions are below 10% of the critical level for short term emission and below 1% of the long term critical level, the emissions screen out as insignificant (for scenario 1) when considered alone.</p> <p>For emergency operations the process contribution (short term/daily average) was 7.6 µg/m³ which is 10.6% of the lower short term critical load. The short term predicted environmental concentration (PEC), using the APIS background of 23.5 µg/m³** the 31.1 µg/m³ which is 41.47% of the lower short term critical level of 75 µg/m³. As the short term PEC is less than 70% of the short term critical load, the emission screens out as insignificant when considered alone.</p> <p><i>*The applicant did not give a value (only gave values to 2 decimal places) and just quoted the PC is <0.1% of the critical level. It is therefore assumed that the highest process contribution is less than 0.01 µg/m³</i></p> <p><i>** Location used by applicant located between to grids with different background concentrations. One with a value of 23.5 µg/m³ and 11.8 µg/m³. We had chosen the higher background as a conservative approach</i></p> <p>Smothering</p> <p>See nutrient enrichment</p> <p>Nutrient Enrichment</p> <p>The variation will result in emissions to air of ammonia from the process and NOx from the combustion plant. This would result in emissions and deposition of nitrogen from NOx and ammonia from atmosphere on surfaces of vegetation and could cause damage to vegetation.</p> <p>Ammonia</p>
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		<p>The process contribution of ammonia deposition is 0.002 ng/m³ which is 2x10⁻⁴ % of the environmental assessment level of 1000 ng/m³. As the emission of ammonia is less than 1% of the EAL it screens out as insignificant and no further assessment was required.</p> <p>Nitrogen Deposition</p> <p>The nitrogen deposition would occur from deposition of atmospheric ammonia (from reactors) and NOx (from the combustion units).</p> <p>Deposition of N nitrogen was calculated from the long term annual NOx atmospheric concentration of <0.01 µg/m³. The highest process contribution was less than 0.001 KgN/Ha/Year. As this is less than 0.01% of the critical load of 10 KgN/Ha/Year the emission screens out as insignificant when considered alone.</p> <p>As the concentration of atmospheric ammonia from the emissions was so low (0.002 ng/m³) any deposition would be negligible and therefore there is no real likely impact pathway.</p> <p>Acidification</p> <p>Acidification would occur from the deposition of atmospheric NOx. The applicant did not provide any acidification values and the air pollution inventory system does not list any acid critical loads. However given that the process contribution for the long term atmospheric NOx was very low (<0.01 µg/m³) the acidity is not likely to be noticeable (approximately 0.0001 Keq/Ha/year). As such the proposal is unlikely to cause any impact to acidity that would cause damage to this designated feature.</p> <p>Changes in Salinity Regime</p> <p>No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Changes in Thermal Regime</p> <p>No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Habitat Loss</p> <p>No Impact Pathway- Site is located 2.7 km away from the edge of the SAC. There are no proposed activities that would lead to a habitat loss</p> <p>Physical Damage</p> <p>No Impact Pathway- Site is located 2.7 km away from the edge of the SAC.</p> <p>Turbidity</p> <p>No impact pathway. No direct discharge to surface water (other than rain water runoff). Process effluent is discharge to sewer under trade effluent consent.</p>
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		<p>Siltation No impact pathway. No direct discharge to surface water (other than rain water runoff).</p>
<p>SAC interest feature 2: Subtidal Sandbanks 1.13: Submerged marine habitats</p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation -See above</p>
<p>SAC interest feature 3: Intertidal mudflats and Sandflats 1.12: Estuarine & intertidal habitats</p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation -See above</p>
<p>SAC interest feature 4: Atlantic salt meadow 1.12: Estuarine & intertidal habitats</p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation -See above</p>
<p>SAC interest feature 5: Reefs 1.12: Estuarine & intertidal habitats 1.13 Submerged marine habitats</p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity</p>

		<p>Siltation -See above</p>
<p>SAC interest feature 6: River lamprey 2.5 Anadramous fish</p>		<p>Toxic Contamination – no impact pathway</p> <p>Aquatica features - not sensitive to air emissions of pollutants. As such there is no impact pathway from the proposal on these features</p> <p>All process water is discharge to sewer under a trade effluent consent. The trade effluent consent and the discharge limits in place a the sewer treatment works will remain protective to ensure that the substances discharge will not increase the impacts to the watercourse. All emissions to surface water consist of uncontaminated rainwater runoff</p> <p>Smothering No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Nutrient Enrichment No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Changes in Salinity Regime No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Changes in Thermal Regime No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Habitat Loss No Impact Pathway- Site is located 2.7 km away from the edge of the SAC. There are no proposed activities that would lead to a habitat loss</p> <p>Physical Damage No Impact Pathway- Site is located 2.7 km away from the edge of the SAC.</p> <p>Turbidity No impact pathway. No direct discharge to surface water (other than rain water runoff). Process effluent is discharge to sewer under trade effluent consent.</p> <p>Siltation No impact pathway. No direct discharge to surface water (other than rain water runoff).</p>
<p>SAC interest feature 7: Sea lamprey 2.5 Anadramous fish</p>		<p>Toxic Contamination Smothering Nutrient Enrichment</p>

		<p>Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation</p> <p>See SAC interest feature 6: River lamprey</p>
<p>SAC interest feature 8: Twaite shad 2.5 Anadramous fish</p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation</p> <p>See SAC interest feature 6: River lamprey</p>
Severn Estuary (SPA)		
<p>SPA interest feature 1: Bewick's Swan 3.4 Birds of lowland wet grasslands 3.6 Birds of lowland freshwaters and their margins 3.7 Birds of farmland 3.8 Birds of coastal habitats</p>	<p><i>"Natural England & the Countryside Council for Wales' advice given under Regulation 33(2)(a) of the Conservation (Natural Habitats, &c.) Regulations 1994, as amended. June 2009"</i></p> <p>The Severn Estuary / Môr Hafren (naturalresources.wales)</p>	<p>Toxic contamination Nitrous oxide</p> <p>The applicant had modelled for 2 situations. The first is for normal operations and the second is for emergency operations, where the diesel generators (5 MWth) will have to be operational to provide electricity to the site. As such the applicant has modelled for both scenarios, with both long and short term emissions considered for normal operation and short term only for emergency operation.</p> <p>For normal operation the highest concentration of NOx at the designated site would be 0.06 µg/m³ or 0.08% of the lower short term critical level of 75 µg/m³ and <0.01* µg/m³ (or <0.1% of the long term critical level of 30 µg/m³). As the process contribution of the emissions are below 10% of the critical level for short term emission and below 1% of the long term critical level, the emissions screen out as insignificant (for scenario 1) when considered alone.</p> <p>For emergency operations the process contribution (short term/daily average) was 7.6 µg/m³ which is 10.6% of the lower short term critical load. The short term predicted environmental concentration (PEC), using the APIS background of 23.5 µg/m³** the 31.1 µg/m³ which is 41.47% of the lower short term critical level of 75 µg/m³. As the short term PEC is less than 70% of the short term critical load, the emission screens out as insignificant when considered alone.</p>

		<p><i>*The applicant did not give a value (only gave values to 2 decimal places) and just quoted the PC is <0.1% of the critical level. It is therefore assumed that the highest process contribution is less than 0.01 µg/m³</i></p> <p><i>** Location used by applicant located between to grids with different background concentrations. One with a value of 23.5 µg/m³ and 11.8 µg/m³. We had chosen the higher background as a conservative approach</i></p> <p>Smothering The only impact pathway of smothering from the site is through deposition of atmospheric nitrogen. This only impacts</p> <p>Nutrient Enrichment</p> <p>Changes in Salinity Regime No impact pathway</p> <p>Changes in Thermal Regime No impact pathway</p> <p>Habitat Loss No impact pathway</p> <p>Physical Damage No impact pathway</p> <p>Turbidity No impact pathway</p> <p>Siltation No impact pathway</p> <p>Entrapment No impact pathway</p> <p>Disturbance (Noise) The changes to the site will result in an increase in noise coming from the site. Overwintering birds can be disturbed by sudden noise (see relevant conservation objectives) However when considered alone the noise from the site is unlikely going to cause impact to the features for the following reasons:</p>
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		<ul style="list-style-type: none"> • The site is located in an industrial area approximately 2780 meters from the closet point of the SPA. Given the decrease in sound pressure levels over distances, the additional sources of noise from the proposal are unlikely to have any notable increase at the SPA. • Many of the noise sources (transformers, chillers exhaust fans) would be continuous operations (operating 24 hours a day, 7 days a week). The site does not comprise of activities are likely to cause a sudden noise source. • The site is located within an existing industrial area and as such will not change the soundscape of the area. Given the presence of housing estates located between the installation and the designated site and other sources of noise between the SPA and the additional sources of noise are unlikely to impact the features of the site.
<p>SPA interest feature 2: European white-fronted goose 3.6 Birds of lowland freshwaters and their margins 3.7 Birds of farmland 3.8 Birds of coastal habitats 3.9 Birds of estuarine habitats</p>		<p>Toxic contamination Nitrous oxide See SPA feature 1 Smothering No impact pathway</p> <p>Nutrient Enrichment No impact pathway</p> <p>Changes in Salinity Regime No impact pathway</p> <p>Changes in Thermal Regime No impact pathway</p> <p>Habitat Loss No impact pathway</p> <p>Physical Damage No impact pathway Turbidity No impact pathway</p> <p>Siltation No impact pathway</p> <p>Entrapment No impact pathway Disturbance (Noise)</p>

		See SPA feature
<p>SPA interest feature 3: Dunlin 3.4 Birds of lowland wet grasslands 3.7 Birds of farmland 3.8 Birds of coastal habitats 3.9 Birds of estuarine habitats</p>		<p>Toxic contamination Nitrous oxide See SPA feature 1 Smothering No impact pathway</p> <p>Nutrient Enrichment No impact pathway</p> <p>Changes in Salinity Regime No impact pathway</p> <p>Changes in Thermal Regime No impact pathway</p> <p>Habitat Loss No impact pathway</p> <p>Physical Damage No impact pathway Turbidity No impact pathway</p> <p>Siltation No impact pathway</p> <p>Entrapment No impact pathway Disturbance (Noise) See SPA feature 1</p>
<p>SPA interest feature 4: Redshank 3.4 Birds of lowland wet grasslands 3.7 Birds of farmland 3.8 Birds of coastal habitats 3.9 Birds of estuarine habitats</p>		<p>Toxic contamination Nitrous oxide See SPA feature 1 Smothering No impact pathway</p> <p>Nutrient Enrichment No impact pathway</p>

		<p>Changes in Salinity Regime No impact pathway</p> <p>Changes in Thermal Regime No impact pathway</p> <p>Habitat Loss No impact pathway</p> <p>Physical Damage No impact pathway</p> <p>Turbidity No impact pathway</p> <p>Siltation No impact pathway</p> <p>Entrapment No impact pathway</p> <p>Disturbance (Noise) See SPA feature 1</p>
<p>SPA interest feature 5: Shelduck 3.6 Birds of lowland freshwaters and their margins 3.8 Birds of coastal habitats 3.9 Birds of estuarine habitats</p>		<p>Toxic contamination Nitrous oxide See SPA feature 1</p> <p>Smothering No impact pathway</p> <p>Nutrient Enrichment No impact pathway</p> <p>Changes in Salinity Regime No impact pathway</p> <p>Changes in Thermal Regime No impact pathway</p> <p>Habitat Loss No impact pathway</p>

		<p>Physical Damage No impact pathway</p> <p>Turbidity No impact pathway</p> <p>Siltation No impact pathway</p> <p>Entrapment No impact pathway</p> <p>Disturbance (Noise) See SPA feature 1</p>
<p>SPA interest feature 6: Gadwall 3.6 Birds of lowland freshwaters and their margins</p>		<p>Toxic contamination Nitrous oxide See SPA feature 1</p> <p>Smothering No impact pathway</p> <p>Nutrient Enrichment No impact pathway</p> <p>Changes in Salinity Regime No impact pathway</p> <p>Changes in Thermal Regime No impact pathway</p> <p>Habitat Loss No impact pathway</p> <p>Physical Damage No impact pathway</p> <p>Turbidity No impact pathway</p> <p>Siltation No impact pathway</p> <p>Entrapment No impact pathway</p>

		<p>Disturbance (Noise) See SPA feature 1</p>
<p>SPA interest feature 7: Internationally important assemblage >20,000 waterfowl 3.6 Birds of lowland freshwaters and their margins 3.8 Birds of coastal habitats 3.9 Birds of estuarine habitats</p>		<p>Toxic contamination Nitrous oxide See SPA feature 1 Smothering No impact pathway</p> <p>Nutrient Enrichment No impact pathway</p> <p>Changes in Salinity Regime No impact pathway</p> <p>Changes in Thermal Regime No impact pathway</p> <p>Habitat Loss No impact pathway</p> <p>Physical Damage No impact pathway Turbidity No impact pathway</p> <p>Siltation No impact pathway</p> <p>Entrapment No impact pathway Disturbance (Noise) See SPA feature 1</p>
<p>Severn Estuary (Ramsar)</p>		
<p>Ramsar interest feature 1: Estuaries 1.12 Estuarine & intertidal habitats</p>	<p><i>“Natural England & the Countryside Council for Wales’ advice given under Regulation 33(2)(a) of the Conservation (Natural Habitats, &c.)</i></p>	<p>See SAC interest feature 1 Estuaries above</p>

Ramsar interest feature 2: Assemblage of migratory fish species 2.5 Anadramous fish	<i>Regulations 1994, as amended. June 2009”</i>	See SAC interest features 6, 7 & 8	
Ramsar interest feature 3: Bewick 's Swan	The Severn Estuary / Môr Hafren (naturalresources.wales)	See SPA interest feature 1	
Ramsar interest feature 4: European white-fronted goose		See SPA interest feature 2	
Ramsar interest feature 5: Dunlin		See SPA interest feature 3	
Ramsar interest feature 6: Redshank		See SPA interest feature 4	
Ramsar interest feature 7: Shelduck		See SPA interest feature 5	
Ramsar interest feature 8: Gadwall		See SPA interest feature 6	
Ramsar interest feature 9: Internationally important populations of waterfowl		See SPA interest feature 7	
River Usk / Afon Wysg SAC (UK0013007)			
Feature 1: Sea lamprey <i>Petromyzon marinus</i>		CORE MANAGEMENT PLAN INCLUDING CONSERVATION OBJECTIVES FOR Afon Wysg / River Usk SAC (naturalresources.wales)	<p>Toxic Contamination – no impact pathway</p> <p>Aquatica feature- not sensitive to air emissions of pollutants.</p> <p>All process water is discharge to sewer under a trade effluent consent. The trade effluent consent and the discharge limits in place a the sewer treatment works will remain protective to ensure that the substances discharge will not increase the impacts to the watercourse.</p> <p>All emissions to surface water consist of uncontaminated rainwater runoff</p> <p>Smothering No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Nutrient Enrichment No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Changes in Salinity Regime No impact pathway. Water is discharge to sewer under trade effluent consent.</p>

		<p>Changes in Thermal Regime No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Habitat Loss No Impact Pathway- Site is located 2.7 km away from the edge of the SAC. There are no proposed activities that would lead to a habitat loss</p> <p>Physical Damage No Impact Pathway- Site is located 2.7 km away from the edge of the SAC.</p> <p>Turbidity No impact pathway. No direct discharge to surface water (other than rain water runoff). Process effluent is discharge to sewer under trade effluent consent.</p> <p>Siltation No impact pathway. No direct discharge to surface water (other than rain water runoff).</p>
<p>Feature 2: Brook lamprey <i>Lampetra planeri</i></p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation -See above</p>
<p>Feature 3: River lamprey <i>Lampetra fluviatilis</i></p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation -See above</p>

<p>Feature 4: Twaite shad <i>Alosa fallax</i></p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation -See above</p>
<p>Feature 5: Allis shad <i>Alosa alosa</i></p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation -See above</p>
<p>Feature 6: Atlantic salmon <i>Salmo salar</i></p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation -See above</p>
<p>Feature 7: Bullhead <i>Cottus gobio</i></p>		<p>Toxic Contamination Smothering Nutrient Enrichment Changes in Salinity Regime Changes in Thermal Regime Habitat Loss Physical Damage Turbidity Siltation -See above</p>

Feature 8: European otter *Lutra lutra*

Toxic Contamination

The variation will result in additional emissions of gas to atmosphere, including carbon monoxide, phosphine, arsenic, ammonia and nitrous oxides.

However the only gas that has a quantifiable limit for ecological receptors are oxides of nitrogen (NO, NO₂ expressed as NO₂) and ammonia. However the other gases (CO, Phosphine and arsenic) were assessed for human health (of which the receptors are located closer to the installation) and the concentration were shown to be very low and insignificant. As such these are unlikely to cause any impact on the ecological receptors.

Nitrous oxide

The applicant had modelled for 2 situations. The first is for normal operations and the second is for emergency operations, where the diesel generators (5 MWth) will have to be operational to provide electricity to the site. As such the applicant has modelled for both scenarios, with both long and short term emissions considered for normal operation and short term only for emergency operation.

For normal operation the highest concentration of NO_x at the designated site would be 0.05 µg/m³ or 0.1% of the lower short term critical level of 75 µg/m³ and <0.01 µg/m³ (or <0.1% of the long term critical level of 30 µg/m³). As the process contribution of the emissions are below 10% of the critical level for short term emission and below 1% of the long term critical level, the emissions screen out as insignificant (for scenario 1) when considered alone.

For emergency operations the process contribution (short term/daily average) was 1.1 µg/m³ which is 1.5% of the lower short term critical level of 75 µg/m³ and as such screens out as insignificant.

Smothering

This feature is not affected by nitrogen deposition from atmospheric NO_x and ammonia and as such no impact pathway

Nutrient Enrichment

No impact pathway

Changes in Salinity Regime

No impact pathway

Changes in Thermal Regime

No impact pathway

Habitat Loss

		<p>No impact pathway</p> <p>Physical Damage No impact pathway</p> <p>Turbidity No impact pathway</p> <p>Siltation No impact pathway</p>
<p>Feature 9: Watercourses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation</p>		<p>Toxic Contamination</p> <p>The variation will result in additional emissions of gas to atmosphere, including carbon monoxide, phosphine, arsenic, ammonia and nitrous oxides.</p> <p>However the only gas that has a quantifiable limit for ecological receptors are oxides of nitrogen (NO, NO₂ expressed as NO_x) and ammonia. However the other gases (CO, volatile organic compounds (propane), Phosphine, silane and arsenic) were assessed for human health (of which the receptors are located closer to the installation) and the concentration were shown to be very low concentration and considered insignificant. As such these are unlikely to cause any impact on the ecological receptors.</p> <p>Nitrous oxide</p> <p>The applicant had modelled for 2 situations. The first is for normal operations and the second is for emergency operations, where the diesel generators (5 MWth) will have to be operational to provide electricity to the site. As such the applicant has modelled for both scenarios, with both long and short term emissions considered for normal operation and short term only for emergency operation.</p> <p>For normal operation the highest concentration of NO_x at the designated site would be 0.05 µg/m³ or 0.1% of the lower short term critical level of 75 µg/m³ and less than 0.01 µg/m³ (or <0.1% of the long term critical level of 30 µg/m³). As the process contribution of the emissions are below 10% of the critical level for short term emission and below 1% of the long term critical level, the emissions screen out as insignificant (for scenario 1) when considered alone.</p> <p>For emergency operations the process contribution (short term/daily average) was 1.1 µg/m³ which is 1.5% of the lower short term critical level of 75 µg/m³. As this is less than 10% of the short term critical level, the emissions screen out as insignificant.</p>

		<p>Smothering and Nutrient Enrichment</p> <p>The variation will result in emissions to air of ammonia from the process and NOx from the combustion plant. This would result in emissions and deposition of nitrogen from NOx and ammonia from atmosphere on surfaces of vegetation and could cause damage to vegetation.</p> <p>Ammonia</p> <p>The process contribution of ammonia deposition is 0.001 ng/m³ which is 6x10⁻⁵ % of the environmental assessment level of 1000 ng/m³. As the emission of ammonia is less than 1% of the EAL it screens out as insignificant and no further assessment was required.</p> <p>Nitrogen Deposition</p> <p>There is no assigned critical load for nitrogen deposition for this designated site. Given that these features (<i>Ranunculion fluitantis and Callitricho-Batrachion vegetation</i>) are water based vegetation, these features are likely to have a low sensitivity to atmospheric deposition of nitrogen. Therefore this feature is unlikely to be impacted through this impact pathway</p> <p>Acidification</p> <p>All emissions The main impact pathway for acidification is either from deposition of SO₂ and NOx . All process effluent is discharged to sewer under a trade effluent consent (and treated at a waste water treatment works which will maintain pH its existing discharge permit). The only surface water discharge is uncontaminated surface water runoff.</p> <p>As with the case for nitrogen deposition, as the features <i>Ranunculion fluitantis and Callitricho-Batrachion vegetation</i> are water based, these features are unlikely to be sensitive to acidification from atmospheric deposition. As such these features are unlikely to be impacted through this impact pathway. In any case given the very low long term process contribution from concentration of NOx (less than 0.01 µg/m³) at this point, it is highly unlikely that any acid deposition would be noticeable.</p> <p>Changes in Salinity Regime</p> <p>No impact pathway. Water is discharge to sewer under trade effluent consent.</p> <p>Changes in Thermal Regime</p> <p>No impact pathway. Water is discharge to sewer under trade effluent consent.</p>
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		<p>Habitat Loss No Impact Pathway- Site is located 2.7 km away from the edge of the SAC. There are no proposed activities that would lead to a habitat loss</p> <p>Physical Damage No Impact Pathway- Site is located 2.7 km away from the edge of the SAC.</p> <p>Turbidity No impact pathway. No direct discharge to surface water (other than rain water runoff). Process effluent is discharge to sewer under trade effluent consent.</p> <p>Siltation No impact pathway. No direct discharge to surface water (other than rain water runoff).</p>
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3.2.3 Screening decision of the project 'alone'

(a) If ALL rows in column II of Table 3.2.2 are GREEN	The project is not likely to have a significant effect on any Natura 2000 site, because there is no impact pathway from the project to any Natura 2000 features, and no further consideration under the Habitats Directive/Regulations is required in order to determine the application.
(b) If there are NO rows coloured RED in column II of Table 3.2.2, and there are ANY rows which are BLUE	The project is not likely to have a significant effect on any Natura 2000 sites when considered alone, but the possibility of significant effects in combination with other plans and projects needs to be considered.
(c) If ANY rows in Column II of Table 3.2.2 are RED	The project is likely have a significant effect on one or more Natura 2000 sites and therefore an appropriate assessment is required.

5 In combination assessment

5.1 Identifying possible in combination effects

<p>BLUE impact pathway from Table 3.2</p> <p>and/or</p> <p>Residual effect (from appropriate assessment in section 4)</p>	<p>Natura 2000 site feature(s) concerned</p>	<p>Other plans/projects with effects that might interact with the effects of the project to render its effects significant (if any)</p>	<p>Nature of the in-combination effect (if any)</p>	<p>Is there likely to be any significant in-combination effect, in view of the site's conservation objectives?</p>
<ul style="list-style-type: none"> Toxic Contamination 	<p>Severn Estuary (SAC)</p> <ul style="list-style-type: none"> SAC interest feature 1: Estuaries SAC interest feature 2: Subtidal Sandbanks 1.13: Submerged marine habitats SAC interest feature 3: Intertidal mudflats and Sandflats SAC interest feature 4: Atlantic salt meadow SAC interest feature 5: Reefs <p>Seven Estuary (SPA)</p> <ul style="list-style-type: none"> SPA interest feature 1: Bewick's Swan SPA interest feature 2: European white-fronted goose 	<ul style="list-style-type: none"> PAN-024107 Saica Pack UK Ltd PAN-019560 CWL13 Data Centre PAN-026552 Newport Data Centre PAN-026558 MSFT MCIO Limited) 	<p>PAN-024107 Saica Pack UK Ltd None</p> <p>-No in combination effects This is a permit application to bring an existing medium combustion plant into regulation. As the site has been operational since 2017, any emissions of NOx would have already been captured under the background data.</p> <p>PAN-019560 CWL13 Data Centre PAN-026552 (Vantage data centre CWL11/12) and PAN-026558 (MSFT MCIO Limited)</p> <p>These sites (two existing and one new) are for the use of diesel (and other heavy fuels) generators as emergency backup generators at data centre in the event of a power outage. As with IQE, the diesel generators, classed as medium combustion plants (MCP)s at these site are only used in emergency situations and testing. These are to operate no more than</p>	<p>No – Toxic Contamination</p> <p>Given the size difference between the data centres Vantage CWL11/12 (202 x MCPS) and CWL 13 (60x MCPS) compared to IQE (only 2x 5 MWth), the and the fact that these would only act in combination in during an extended power outage (under possible but very rare situations) over a short term period, potential impacts from IQE are unlikely to lead to any</p>

	<ul style="list-style-type: none"> • SPA interest feature 3: Dunlin • SPA interest feature 4: Redshank • SPA interest feature 5: Shelduck • SPA interest feature 6: Gadwall • SPA interest feature 7: Internationally important assemblage >20,000 waterfowl <p>Seven Estuary (Ramsar)</p> <ul style="list-style-type: none"> • (see affected feature of SPA and SAC above) <p>River Usk / Afon Wysg (SAC)</p> <ul style="list-style-type: none"> • Feature 8: European otter <i>Lutra lutra</i> • Feature 9: Watercourses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation 		<p>500 hours per year but in reality these would only operate for brief periods of time for testing and/or they are required due to a total power failure in the area. Therefore the installations would only act in combination for the short term emissions and long term impacts from the emissions are unlikely to occur.</p> <p>CWL13 Data Centre (PAN-019560) was a permit issued in 2022 for 60 x 2.98 MWth backup generators</p> <p>Vantage data centre (CWL 11/12) has an existing permit for 202 x backup generators but there is a permit application to varying (PAN-026552) the permit to change the 71 of the backup generators reducing the number to 194.</p> <p>MSFT MCIO Limited PAN-026558 is a new bespoke application for 28 diesel generators at site.</p> <p>Air impact assessments for the data centres applications shows that the maximum process contribution for testing are below 1% of the critical level and as such no in-combination during testing.</p> <p>As such the for in combination we assume worst case scenario where all sites are operating due to power failure in the area and assumed that all sites would be impacted by the outage ^{footnote1}.</p> <p>Severn Estuary</p>	<p>notable increase in in combination impacts compared to the other sites. As such IQE is unlikely to cause any notable contribution that could cause damage to the designated features.</p>
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¹ PAN-026558 air quality impact assessment (*CWL11/CWL12 Environmental Permit Variation Application Air Quality Impact Assessment*)
www.naturalresources.wales

			<p>For a 1 hour Emergency shut down the worst case for the three sites as follows (CWL11/12) and CWL 13 would have a combined total of 17.8 µg/m³ ^{footnote 1} and MSFT 1.4 µg/m³ ^{footnote 2} . PAN-027048 Vital Energi Ltd Newport ERF which operates continuously has a process contribution of 9.6 µg/m³</p> <p>If combined with IQE (7.6 µg/m³) and a background of 23.5 µg/m³ then the total would be 59.9µg/m³ or which is 79.9% of the lower critical level of 75 µg/m³ and 29.95% of the higher critical load of 200.</p> <p>However for 72 hour situation CWL11/12) and CWL 13 would have a process contribution of 623 µg/m³ (830% of the lower critical level of 75 µg/m³ and 320% of the higher critical level of 200 µg/m³ ^{footnote 3} .</p> <p>Although there is an in-combination, IQE emissions under these situations would be 7.6 µg/m³ which would only represent around 1.2% of the emissions of the combined emission.</p> <p>An outage for such an extended period of time is possible but very rare. Given the small process contribution from IQE's operate two 5 MWth Medium combustion plants compared, while there is an in-combination affect IQE's would represent a small percentage and would not significantly change the combined impact.</p>	
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² PAN-026552 air quality impact assessment (Air Quality Assessment Microsoft Newport Quinn Environmental Permit Assessment – Permit Variation)

³ [Air emissions risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](http://www.gov.uk)
www.naturalresources.wales

			<p>As such IQE would not cause any notable increase in impact on the receptors when considered in-combination with the other sites.</p> <p>River Usk As with the Severn Estuary under emergency operation (72 hours) the process contribution from the data centres would be significantly higher than the process contribution from IQE (1.1 µg/m³ or 1.5% of the lower critical level of 75 µg/m³).</p> <p>As such any in-combination contribution from IQE's proposal would be insignificant compared to the impact from the site</p>	
<ul style="list-style-type: none"> • Smothering • Nutrient Enrichment • Acidification 	<p>Severn Estuary (SAC)</p> <ul style="list-style-type: none"> • SAC interest feature 1: Estuaries • SAC interest feature 2: Subtidal Sandbanks 1.13: Submerged marine habitats • SAC interest feature 3: Intertidal mudflats and Sandflats • SAC interest feature 4: Atlantic salt meadow • SAC interest feature 5: Reefs <p>Seven Estuary (Ramsar)</p>	<ul style="list-style-type: none"> • PAN-024107 Saica Pack UK Ltd • PAN-019560 CWL13 Data Centre • PAN-026552 Vantage data centre • PAN-026558 MSFT MCIO Limited • PAN-027048 Vital Energi Ltd Newport ERF 	<p>PAN-024107 Saica Pack UK Ltd None as with the nitrogen emissions the site has been operational since 2017 therefore all contributions from this site would be already included in the background.</p> <p>PAN-019560 CWL13 Data Centre, PAN-026552 Vantage data centre and PAN-026558 MSFT MCIO Limited PAN-027048 Vital Energi Ltd Newport ERF.</p> <p>None Nitrogen deposition and acidification from nitrogen deposition are measured over a long term basis (Kg/N/Ha/Year for nitrogen deposition and Keq/Ha/Year). The data centres would only be operating under</p>	No

	<p>see affected feature of SAC above</p> <p>River Usk</p> <ul style="list-style-type: none"> Feature 9: Watercourses of plain to montane levels with the Ranunculus fluitans and Callitriche-Batrachium vegetation 		<p>emergency situation (when there is a sudden power failure in the area) and would not operate for more than 500 hours a year. Given the limited hours and the short term nature of the in combination, there is unlikely that the proposal would have an in combination) impact (over a long time period) on the nitrogen deposition and therefore no impact pathway to cause damage to the features of this site.</p>	
<ul style="list-style-type: none"> Noise (disturbance) 	<p>Seven Estuary (SPA) SPA interest feature 1: Bewick's Swan SPA interest feature 2: European white-fronted goose SPA interest feature 3: Dunlin SPA interest feature 4: Redshank SPA interest feature 5: Shelduck SPA interest feature 6: Gadwall SPA interest feature 7: Internationally important assemblage >20,000 waterfowl</p> <p>Seven Estuary Ramsar (same as SPA)</p>	<ul style="list-style-type: none"> PAN-019560 CWL13 Data Centre PAN-026552 Vantage data centre PAN-026558 MSFT MCIO Limited PAN-027048 Vital Energi Ltd Newport ERF 	<p>During emergency operations the diesel generators from the two existing data centres, the proposed data centre and IQE could act in combination to increase the sound levels at the SPA. However (as mentioned for the air quality impact) the likelihood of such a situation occurring is very low and would only occur under emergency situations where the backup diesel generators would need to be used for a very short period of time.</p> <p>The noise impact assessments (NIA) for these sites were done for human receptors and as such may not be applicable to birds species which would interpret sounds differently. However using the NIAs to estimate the increase in noise under such situations, the loudest would be from Vantage data centre (up to 52.0 dB(A) Given that noise would be dominated from the loudest sound, under worst case scenario IQE is unlikely to increase the noise level at the receptor and given the distance any contribution from in combination are unlikely to be notable over the other sites.</p>	No

<p>(a) If the right hand column is 'NO' for all rows</p>	<p>The 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 Natura 2000 site.</p>
<p>(b) If any rows in the right hand column are 'YES' or 'DON'T KNOW'</p>	<p>The project is likely to have a significant effect in combination with other plans or projects.</p>

6. Conclusion

<p>HRA is not required because the whole of the project is directly connected with or necessary to the management of one or more Natura 2000/Ramsar sites, for the purposes of conserving the habitats or species for which the site(s) is/are designated, and the project is not likely to have a significant effect on any other Natura 2000/Ramsar sites. (As documented in section 2.1 and 2.2 of this form)</p>	
<p>HRA is not required because there is no conceivable impact pathway to any Natura 2000/Ramsar site (As documented in section 2.3 of this form)</p>	
<p>This project is a renewal of a current permission which complies with NRW agreed criteria for ruling out 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 Natura 2000/Ramsar sites, either alone or in combination with other plans and projects. (As documented in section 3.1 of this form)</p>	
<p>The project has been screened for likelihood of significant effects and, taking account of the advice received from protected sites advisors, is considered not likely to have a significant effect on any Natura 2000/Ramsar site (As documented in section 3.2 of this form, or section 5 if applicable)</p>	<p>X</p>
<p>In light of the conclusions of an appropriate assessment, and taking account of the advice received from protected sites advisors, it has been established that the project will not adversely affect the integrity of any Natura 2000/Ramsar site, taking into account any conditions or restrictions as applicable, either alone or in combination with other plans and projects. (As documented in section 4 of this form, and section 5 if applicable)</p>	
<p>In light of the conclusions of the appropriate assessment, it has <u>not</u> been ascertained that the project will not adversely affect the integrity of any Natura 2000/Ramsar site, as documented in section 4 of this form, and section 5 is applicable.</p> <p>Approval for the project cannot be given unless either:</p> <ul style="list-style-type: none"> • the 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 report is prepared, or • the project satisfies the requirements of Article 6(4) of the Habitats Directive, an Article 6(4) Statement of Case is prepared (OGN 200 Form 3) and submitted for consideration by the appropriate authority, normally Welsh Ministers 	

Signed: W Wallace

Name: William Wallace

Position: Senior Officer, Installations and RSR permitting

Date: 23/09/2024

7. Consultation with protected sites advisor(s) 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	Date(s) of correspondence* and any meeting(s) with protected sites advisor(s)	Description of how the comments from protected sites advisors have been taken into account
2		
3		
4		
5		

8. Conservation Technical Specialist's comments

I have reviewed the HRA documented in this form and confirm that I agree/~~do not agree~~* with its findings.
(*strike out as applicable)

Additional comments (if any):

I have reviewed the HRA report submitted 23/09/2024 and the updated version dated 30/09/2024 and confirm that I agree with the content and conclusions of the HRA report that the project is considered not likely to have a significant effect on any Natura 2000 site.

Signed: S.A.Higgett

Name: Sophie Higgett

Position: Natura 2000 Sustainable Management Advisor

Date: 01/10/2024