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19th January 2021

To whom it may concern,

RE: Islandmagee-gas-storage-project-December-2020-Advertisement Period-AIL & Consent to Discharge - Islandmagee Gas Storage TC 041/20 & AIL/2012/0033.

Ulster Wildlife is Northern Ireland's largest local nature conservation charity with over 14,000 members. Our vision is for a healthy, well-cared for natural environment which contributes to enjoyment, quality of life, prosperity, health and well-being. On Islandmagee, we manage the Isle of Muck nature reserve which is the third largest cliff-nesting seabird colony in Northern Ireland, supporting thousands of nesting seabirds including fulmar, shag, razorbill, guillemot, black guillemot and kittiwake.

Ulster Wildlife has raised a number of concerns in response to the previous consultation on 'Islandmagee Gas Storage Project December 2019 Consultation ML 28_12' (herein referred to as ML 28_12). At the time of writing, no response has been received by Ulster Wildlife addressing the concerns raised previously and therefore we continue to object to the granting of the Marine Construction Licence for this project. As the concerns raised in our previous response to the Marine Construction Licence are also relevant to these applications and have not yet been resolved, these concerns (contained in the Annex) remain valid and should be considered alongside the concerns contained within this response.

On review of the information provided for AIL & Consent to Discharge Ulster Wildlife object to the granting of the AIL & Consent to Discharge for this project.

Summary of the position of Ulster Wildlife:

We have serious concerns with the following aspects of the proposed project:

- The four-week consultation time (extended by one week) provided to respond to this application is entirely inappropriate and not in keeping with vital consultation requirements.
- The proposal, which considers investment in new gas infrastructure, runs contrary to the policy direction required to meet the UK's climate ambitions. All licensing decisions should now respond to the Climate Emergency declared by the Northern Ireland Assembly on 3rd February 2020 and policies which aim to achieve UK net zero by 2050. The proposal also contradicts the UK Marine Policy Statement which emphasises the need for decisions to be conducted in a manner which takes account of such national policies.
- The proposed project is situated within a highly designated area which includes the North Channel Special Area of Conservation (SAC), proposed East Coast (Northern Ireland) marine Special Protection Area (SPA) and is functionally linked to the adjoining Larne Lough SPA, Ramsar and Area of Special Scientific Interest (ASSI), Portmuck ASSI, the Gobbins ASSI and the Maidens SAC.
- Ulster Wildlife has serious concerns that the impact of this project on designated site features, priority marine species and the marine ecosystem as a whole in this area has not been properly assessed and recommends that the precautionary principle be applied to these proposals.
- Ulster Wildlife resubmits concerns specifically raised in our previous response to consultation ML 28_12 submitted 6th February 2020 (included in Annex).

Consultation Process:

Ulster Wildlife welcomes the opportunity to comment on this consultation but considers both the timing and the time period allowed for comment to be highly inappropriate. While we appreciate that any consultation is at the discretion of the Competent Authority, we are concerned that the 4-week period provided to comment (16th Dec 2020 – 13th Jan 2021) in addition the consultation period being set over the Christmas holiday period and during the ongoing Covid 19 pandemic, is inappropriate considering the large volume of information required to be reviewed and understood for comment. The extension of one further week nearing the consultation closing date is welcomed but we consider this to still be inappropriate and not in keeping with vital consultation requirements¹, namely:

- (i) consultation must take place when the proposal is still at a formative stage;
- (ii) sufficient reasons must be put forward for the proposal to allow for intelligent consideration and response;
- (iii) adequate time must be given for consideration and response; and
- (iv) the product of consultation must be conscientiously taken into account.

Project Justification:

In lieu of a Northern Ireland Marine Plan, which is still in draft form, decisions on consents within Northern Ireland's inshore waters should be made in line with the UK Marine Policy

¹ As have been established and are known as the Gunning (or Sedley) principles, namely it is commonly accepted that certain fundamental propositions must be adhered (R v. Brent London Borough Council, ex parte Gunning (1985) 84 LGR 168 at 169; subsequently approved in R v. Devon County Council, ex parte Baker [1995] 1 All.E.R. 73 at 91g-j; and by the Court of Appeal in R v. North and East Devon Health Authority, ex parte Coughlan [2001] QB 213 at [108]).

Statement². There are key statements within the Marine Policy Statement that development decisions should take account of:

“...that marine resources should be used in a sustainable way in line with the high-level marine objectives and thereby:

- *Promote sustainable economic development;*
- *Enable the UK’s move towards a low-carbon economy, in order to mitigate the causes of climate change”*

“Be conducted in a manner that takes account of other relevant projects, programmes, plans and national policies and guidance;”

“When developing Marine Plans, marine plan authorities should identify how these will contribute to delivery of national targets and priorities, including legally binding commitments entered into under the Renewable Energy Directive (Directive 2009/28/EC) and our domestic binding target to reduce greenhouse gas emissions by 80% by 2050”.

However, since the publication of the UK Marine Policy Statement in 2011, the need for accelerated action and more ambitious policies to address climate change has become even more apparent. Both the UK Parliament (in May 2019) and Northern Ireland Assembly (in February 2020) have declared a National Climate Emergency, which indicates the need for concerted action and resourcing to tackle the recognised global climate crisis. In the UK, this led to a revision of the UK Climate Change Act (2008) greenhouse gas emissions reduction target from 80% by 2050, to net zero³.

As a UK national target, net zero emissions by 2050 applies to Northern Ireland and demands appropriate action in decision making. The Climate Change Committee (which provides independent advice to the UK government on setting and meeting carbon budgets and preparing for climate change) published the Sixth Carbon Budget⁴ in December 2020, which identifies the key actions required at a UK level to meet the net zero emissions target. In terms of energy, the balanced pathway for the sixth carbon budget states that:

Fossil fuels are largely phased out:

- *Demand falls significantly to 2050 for oil (-85%) and natural gas (-70%)*
- *Petroleum is mainly restricted to the aviation sector;*
- *Natural gas use is limited to combustion with Carbon Capture and Storage for power generation and industrial processes and phased out of use in buildings.*
- *Phasing-out of unabated gas generation by 2035*
- *An expansion of variable renewables, so that it provides 80% of generation by 2050*

All licensing decisions should now respond to the Climate Emergency declaration and the Sixth Carbon Budget recommended actions to achieve UK net zero by 2050, and to account for the guiding UK Marine Policy Statement which emphasises the need for decisions to be conducted in a manner taking account of such national policies.

Although Northern Ireland does not yet have its own Climate Change Bill we are bound by the UK-wide Act to take policy action to achieve a UK net zero target by 2050. Furthermore, a consultation is currently underway on options for a bespoke Northern Ireland Climate Change

² <https://www.gov.uk/government/publications/uk-marine-policy-statement>

³ Climate Change Act 2008 (2050 Target Amendment) Order 2019

⁴ <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

Bill, which was recommended by the 'New Decade, New Approach'⁵ agreement, as well as an Assembly motion passed on 21st July 2020, to ensure environmental targets have a strong legal underpinning.

As previously mentioned in our response to ML_28 12 (see Annex), Ulster Wildlife note that the information presented in Section 1.3 of the EIS (Project Justification) is out of date. Below are some examples of outdated statistics presented in the submitted EIA against more recent statistics:

- **EIS:** *Imported gas is expected to meet over 70% of UK demand due to the rapid decline in North Sea Gas production. Recent evidence:* The UK currently produces 44% of the UK gas production and imports 47% via pipeline and 9% via LNG tankers⁶.
- **EIS:** *Secure gas supplies are important for the UK as it is the world's fifth largest consumer of gas. Recent evidence:* The UK is the 10th largest consumer of gas⁷.
- **EIS:** *At present, NI produces and consumes 7% of its electricity from renewable sources. Recent evidence:* 'For the 12-month period October 2019 - September 2020, 47.7 % of total electricity consumption in NI was generated from renewable sources located in NI'⁸.
- **EIS:** *The EU has set EU wide targets for...a 20% share for renewables in the energy mix... Recent evidence:* New EU Renewable energy Directive (2018) establishes a new binding renewable energy target for the EU for 2030 of at least 32%, with a clause for a possible upwards revision by 2023⁷. The Sixth Carbon Budget recommends that renewables could contribute up to 90% of generation by 2050, with variable renewables (i.e. wind and solar) forming the majority - 70% - of electricity generation by 2035⁹.

Within the submitted documentation, it is unclear who the beneficiaries of the stored gas will be and as such, the assumption that the gas will be used as a 'back-up' during the transition to renewable energy is not proven.

Ulster Wildlife wishes to draw attention to the following statement: ***"the Islandmagee gas storage facility will be one of the biggest power consumers in Northern Ireland when running at peak operations"***¹⁰. It is also not clear how the storage facility will be powered.

We recognise that when decision makers are examining and determining applications for energy infrastructure, the 'national need', as set out in the Strategic Energy Framework, is taken into account (this includes security of supply). However, the current NI Strategic Energy Framework is 10 years old and the Department for the Economy is developing a new Energy Strategy to replace the existing Strategic Energy Framework. The call for evidence document for a new Energy Strategy recognises that the context for energy has changed substantially since the 2010 Strategic Energy Framework (SEF) was published. In June 2019, the UK became the first major economy to commit to a 100% reduction in greenhouse gas emissions by 2050¹¹. This 'net zero' target represents a significant step-change in the commitment to addressing the climate crisis. Furthermore, consultation on a new environment strategy for Northern Ireland is currently taking place and the Northern Ireland marine plan remains to be implemented. **Ulster Wildlife considers that a decision should not be made on the**

⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/856998/2020-01-08_a_new_decade_a_new_approach.pdf

⁶ <https://www.britishgas.co.uk/energy/guides/energy-sources.html>

⁷ <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2018-full-report.pdf>

⁸ <https://www.economy-ni.gov.uk/sites/default/files/publications/economy/Issue-13-Electricity-Consumption-and-Renewable-Generation-in-Northern-Ireland-October-2018-to-September-2019.pdf>

⁹ <https://www.theccc.org.uk/publication/sixth-carbon-budget/>

¹⁰ Section 8.2.3 – Environmental Impact Statement

¹¹ The Climate Change Act 2008 (2050 Target Amendment) Order 2019 - <http://www.legislation.gov.uk/uksi/2019/1056/contents/made>

proposed project until the above policies and policy frameworks have been implemented.

Effects on Habitats and Species:

This project is proposed within a highly designated area which includes the North Channel SAC, proposed East Coast (Northern Ireland) marine SPA and is functionally linked to the adjoining Larne Lough SPA, Ramsar and Area of Special Scientific Interest (ASSI), Portmuck ASSI, the Gobbins ASSI and the Maidens SAC. The proposed seawater intake and brine outfall are located with the North Channel SAC (SAC UK0030399) which is designated for the protection of harbour porpoise (*Phocoena phocoena*) and the proposed East Coast (Northern Ireland) SPA which is designated for the protection of internationally important populations of great crested grebe (*Podiceps cristatus*), red-throated diver (*Gavia stellata*), Sandwich tern (*Thalasseus sandvicensis*), common tern (*Sterna hirundo*), arctic tern (*Sterna paradisaea*), manx shearwater (*Puffinus puffinus*) and eider duck (*Somateria mollissima*).

In addition to ongoing concerns raised on the impact of construction works proposed under the marine licencing process (see Annex), we are concerned about the impact of the brine dispersal on marine habitats and species in this area. Ulster Wildlife has serious concerns that the impact of this project on designated site features, priority marine species and the marine ecosystem as a whole in this area has not been properly assessed and recommends that the precautionary principle be applied to these proposals.

In accordance with Regulation 17 (2) of The Conservation (Natural Habitats, etc) Regulations (Northern Ireland) 1995,

“In the light of the conclusions of the assessment, and subject to paragraph (3), the Department may give consent for the operation only after having ascertained that the plan or project will not adversely affect the integrity of the site.”

Regulation 17 Paragraph 3 states:

(3) If, in spite of an assessment that a plan or project will adversely affect the integrity of a site, the Department is satisfied that, there being no alternative solutions, the plan or project must be carried out for imperative reasons of overriding public interest (which, subject to paragraph (4), may be of a social or economic nature), it may give consent to the operation.

A central and distinguishing theme of the Habitats Directive is that the responsibility of the developer of any proposed plan or project to prove beyond reasonable doubt that there will be no negative impact on the conservation objectives of the site before any plan or project can be approved. Where doubt remains as to the absence of adverse effects on the integrity of the site linked to the plan or project being considered, the competent authority will have to refuse authorisation.

Ulster Wildlife understands that an initial screening exercise of this proposal concluded that the possibility of Likely Significant Effects (LSEs) existed for four European sites and that these LSEs included the impacts of noise and the brine outflow. As outlined above, in the absence of any clear and robust evidence that the LSEs from noise, brine outflow and other potential actions can be eliminated, then we believe that this project cannot then receive consent to proceed as proposed.

In addition to ongoing concerns raised on the impact of construction works proposed under the marine licencing process (see Annex), Ulster Wildlife are concerned about the impact of the brine dispersal on marine habitats and species in this area. We have serious concerns that the impact of this project on designated site features, priority marine species and the marine ecosystem as a whole in this area has not been properly assessed and recommends that the precautionary principle be applied to these proposals.

We note that information contained within the Environmental Impact Assessment is almost a decade out of date (dated March 2010). For example, the overlap between the project area and the North Channel SAC and East Coast pSPA is a significant omission from both the EIS and the non-technical summary. Furthermore, the applicant has not included Portmuck ASSI or The Gobbins ASSI into the assessment on impacts on designated sites. Both sites are considered to be functionally linked to the project area and are designated for seabird species (razorbill, kittiwake and guillemot). While these sites were considered in the original 2010 application, new information along with updated proposals require impacts on these sites to be reconsidered. This is a significant omission in assessing the potential impact of the proposal.

The North Channel SAC is designated for the protection of harbour porpoise and is considered by DAERA and JNCC “*to be one of the best areas in the United Kingdom*” for the species¹² and inshore waters are important nursery habitats during the summer months. Ulster Wildlife resubmit concerns raised in our response to ML 28_12 (see Annex) relating to the impact of noise on the harbour porpoise and are concerned about the lack of assessment on the impacts of salinity changes on ecosystem stability in relation to prey species and key ecosystem components. We acknowledge the brine dispersal model indicates that the greatest impact of the discharge will be directly surrounding the discharge pipe however, we are further concerned about the impact of widescale salinity changes (e.g. ~10 km extent, Fig 5-6 Maximum Seabed Salinity – Neap Tidal Cycle – 1,000 m³/hour Discharge¹³), albeit at relatively lower levels than at the discharge pipe, will have on wider ecosystem function. As stated in the sHRA, harbour porpoise “*may be highly susceptible to changes in the abundance of prey species or disturbance from foraging areas*” (Pg. 25¹⁴) and we remain concerned that the project conflicts with the conservation objectives of the site (Table 1, Pg. 15¹⁵):

- Species are a viable component of the site
- There is no significant disturbance to the species
- The supporting habitats and processes relevant to harbour porpoises and their prey are maintained.

We note that data are included on sightings of marine mammals received from the Centre for Environmental Data and Recording (CEDaR) for the period 1992 to 2019. It is not clear whether these data are from dedicated marine mammal surveys or sightings submitted anecdotally from members of the public. Given the relevance of harbour porpoise in particular to this area, we request clarity on the extent of cetacean surveys carried out to inform population density and abundance for harbour porpoise and other marine mammals.

Ulster Wildlife resubmits our concern that the brine discharge will not just occur during the four years assessed in the project application. The documentation states that brine discharge will likely be required for maintenance purposes (approx. 10 - 15 year intervals¹⁶) which will significantly increase the time for recovery for lost biodiversity (estimated time for recovery not stated). We note that the level of discharge for maintenance is likely to be lower than in

¹² <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030399.pdf>

¹³ Fig 5-6 – IGSF Brine Dispersion Report.

¹⁴ Section 4.3.2.1 – Shadow Habitats Regulations Assessment Report.

¹⁵ Table 1 – Shadow Habitats Regulations Assessment Report.

¹⁶ Section 6.8.5.3 of the Environmental Statement.

construction but detail on this process is not given. Therefore, it is not possible to determine from the information given the full extent of the impact of the discharge as it may extend for a 30 - 40 year period, which is not represented nor assessed in the documentation.

New and updated information on common skate and elasmobranchs:

Gaps remain in NI's network of ecologically coherent MPAs for species of conservation importance, including the critically endangered common skate¹⁷. The inshore area from Islandmagee northwards to Red Bay is currently an Area of Search (AoS for a Marine Conservation Zone) for conservation measures in relation to common skate. A tagging programme (Sea Deep Project) which aims to gather data on the abundance and distribution of common skate has been ongoing since 2018. To date, 37 common skate have been tagged, and there have been four recaptures which may indicate residency of the species in the area. Ongoing work to designate an MCZ for this species should be included as a key consideration in this project's decision-making process. The precautionary approach should be applied until there is adequate data on skate movement in this area.

Additionally, sound-induced behavioural changes in elasmobranch species are poorly understood, as previous studies have focused on the effects of sounds on marine mammals and bony fishes. The current understanding of elasmobranch auditory apparatus is that it is comprised of paired inner ears that detect the particle motion component of a sound¹⁸. Elasmobranchs do not possess a swim bladder like bony fish and therefore are thought not to be sensitive to the pressure component of a sound. However, there are published accounts of elasmobranch species being attracted by sounds from hundreds of metres away^{19 20}, which contradicts the current understanding of the elasmobranch auditory system beyond the near-field properties of particle motion. This highlights the paucity of knowledge and the associated misconceptions of the effects of sounds on elasmobranch behaviour.

Moreover, the sounds perceptible to elasmobranch species (below 1.5 kHz) would mostly include continuous and/or rhythmic sounds, such as waves and bubbles, the hydrodynamic flow of fish schools and the lower frequency components of some animal calls, like fish calls. An arrhythmic and chaotic sound (such as the artificial sound) would represent an atypical and unfamiliar acoustic signal with quick variations of intensities and frequencies. This unnatural cue may trigger either investigative or aversive behaviour in some species of elasmobranchs¹⁸.

Additional Comments:

In addition to our request above that all licencing decisions should now respond to the Climate Emergency declared by the Northern Ireland Assembly on 3rd February 2020 and policies which aim to achieve UK net zero by 2050, we believe that future policy and planning decision should be taken within this context. **Ulster Wildlife considers that investment in new gas infrastructure directly conflicts with the declaration of a climate emergency.**

Finally, it is clear that the nature of the proposed project is cross cutting and as such we believe that **the decision on this licence application should be made by the Northern Ireland Executive.**

¹⁷ <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/JNCC%20DAERA%20NIMPA%20Network%20Progress%20v6.0.pdf>

¹⁸ Chapuis, L., Collin, S.P., Yopak, K.E., McCauley, R.D., Kempster, R.M., Ryan, L.A., Schmidt, C., Kerr, C.C., Gennari, E., Egeberg, C.A. and Hart, N.S., 2019. The effect of underwater sounds on shark behaviour. *Scientific reports*, 9(1), pp.1-11.

¹⁹ Wisby, W. J. & Nelson, D. R. Airplane observations of acoustic orientation in sharks. (Abstr.). In *American Fish Society Conference, Session on fish behaviour and sensory biology* (1964).

²⁰ Myrberg, A. A., Ha, S. J., Walewski, S. & Banbury, J. C. Effectiveness of acoustic signals in attracting epipelagic sharks to an underwater sound source. *Bull. Mar. Sci.* **22**, 926–949 (1972).

If you have any queries on this response, or on our response to ML 28_12, please do not hesitate to contact us.

Yours sincerely,

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6th February 2020

Dear Sir/Madam,

RE: ISLANDMAGEE GAS STORAGE PROJECT CONSULTATION

Ulster Wildlife is Northern Ireland's largest local nature conservation charity with over 14,000 members. Our vision is for a healthy, well-cared for natural environment which contributes to enjoyment, quality of life, prosperity, health and well-being. On Islandmagee, we manage the Isle of Muck nature reserve which is the third largest cliff-nesting seabird colony in Northern Ireland, supporting thousands of nesting seabirds including fulmar, shag, razorbill, guillemot, black guillemot and kittiwake.

We welcome the opportunity to respond to the Islandmagee Gas Storage Project consultation but have serious concerns regarding the proposed activities. The project will require the creation of gas caverns within the Permian salt beds beneath Larne Lough, involving construction and operational activities to disperse hypersaline seawater off the eastern side of Islandmagee. These activities would occur directly within two Marine

Protected Areas (the North Channel Special Area of Conservation and the proposed East Coast Special Protection Area) and within close proximity of a further five protected sites (within 2km), including the Portmuck ASSI, the Maidens SAC, Larne Lough Ramsar site, Larne Lough SPA and Larne Lough ASSI.

We believe the project activities have the potential for significant detrimental effects on the designated features of these protected areas. In particular, we are seriously concerned about the potential for temporary and permanent hearing loss to harbour porpoise and grey seals (designated features of the North Channel SAC and Maidens SAC, respectively). Also, the potential for disturbance and loss of feeding opportunities for marine mammals and seabirds within important foraging grounds.

Decisions regarding marine license applications within NI inshore waters should be directed by devolved policy and legislation. Currently, the consultation processes for the NI Marine Plan, NI Energy Strategy and Environment Strategy for NI are all underway with no completed policy in place to direct decision making. Furthermore, management plans for the two protected areas within which the brine dispersal would directly occur are in the early stage of development and have not been released. We feel strongly that it is not appropriate for any decision on this project to be made without this policy and management framework in place.

For these reasons, we object to the granting of a marine license for the Islandmagee Gas Storage Project. We support the responses of the Northern Ireland Marine Task Force, RSPB NI and the National Trust, who are united in objecting to the proposals.

Furthermore, we believe the consultation documents are of a poor standard and fail to adequately and clearly describe the proposed project. The NI Guidance on Marine Licensing (DAERA, 2016) states that the marine license consultation documents (i.e. the Environmental Impact Assessment process) should: 'Provide sufficient details to allow readers to make an independent decision on the impacts associated with the proposed development'.

However, the Islandmagee Gas Storage Project consultation uses documents from a previous application in 2010 with amendments apparently inserted in a random and disorganised manner. Most notably, the Environmental Statement Non-Technical Summary is entirely unchanged. It omits the North Channel SAC and proposed East Coast SPA designations and includes inaccurate figures on NI's current energy use. For example, by stating that NI produces and consumes only 7% of its electricity from renewable sources when current evidence shows that this has significantly increased to 44.9% of NI energy coming from renewables (DfE, 2019).

Given that the full consultation documents amount to over 1900 pages, the non-technical summary is likely to be the main resource used by many stakeholders, such as local residents, councillors and political advisors. However, the summary provided is 10 years out of date, misrepresents the implications of the proposed project and therefore fails to facilitate informed stakeholder engagement in the consultation process.

Further details on the reasons for our objection are provided below, relating to: (1) Protected Areas and Species of Conservation Importance; (2) Potentially Damaging Project Activities; and, (3) Consequences for Climate Action.

1. Protected Areas and Species of Conservation Importance

The recent IPBES Global Assessment Report on Biodiversity (IPBES, 2019) found that 'nature is declining globally at rates unprecedented in human history – and the rate of species extinction is accelerating, with grave impacts on people around the world now likely.' The State of Nature 2016 report showed that the UK is one of the most nature-depleted countries in the world and Northern Ireland is the most nature-depleted part of the UK. The 2019 Report shows no let-up in loss of wildlife: 'Of 2,450 species in Northern Ireland that have been assessed using IUCN Regional Red List criteria, 11% have been classified as threatened with extinction from Ireland as a whole'. Last year, Defra's UK Marine Strategy Assessment Part One concluded that we are failing to meet 11 out of 15 indicators for healthy seas.

We are facing a biodiversity crisis. The purpose of protected areas is to provide sanctuaries for our most threatened, fragile and functionally important plants and animals, allowing them to recover and improve the health of our wider marine environment.

The area around Islandmagee is known for its outstanding biodiversity and, as such, has been designated as a wildlife sanctuary for many of our most threatened species and habitats (Table 1). This area supports many unique and rare marine assemblages within the UK. For example, the Maidens SAC site selection assessment states that the 'hydrographic conditions present round the Maidens and the proximity of deep water to the plateau result in conditions not found in many other UK areas and consequently these habitats are extremely rare'. The diversity of fragile sponge species and the presence of rare species make the sponge communities found within the Maidens SAC 'some of the most important in the British Isles'. The official information sheet for the North Channel SAC describes the site as 'one of the best areas in the United Kingdom' for harbour porpoise (JNCC, 2019).

Table 1. Summary of the protected sites and designated marine species within the project area.

Site name	Designated Marine Features
Larne Lough Ramsar site	The site regularly supports internationally important numbers of light-bellied Brent geese in winter. It also supports an important assemblage of vulnerable and endangered Irish Red Data Book bird species. The site regularly supports nationally important numbers of breeding populations of the Annex 1 species: roseate and common tern.
Larne Lough SPA	The principal interests are the breeding colonies of Roseate, Sandwich and Common Tern and the wintering population of Light-bellied Brent Goose. These are deemed to be 'internationally important populations'.
Larne Lough ASSI	Invertebrate assemblage, Common Tern, Goldeneye, Great Crested Grebe, Light-bellied Brent Goose, Red-breasted Merganser, Redshank, Roseate Tern, Sandwich Tern, Shelduck, Breeding bird assemblage. Saline lagoons, Coastal saltmarsh
Portmuck ASSI	Breeding seabird populations including Razorbill, Guillemot, Puffin, Kittiwake, Fulmar, and Black guillemot
North Channel SAC	Harbour porpoise
Maidens SAC	Reefs (including fragile hydroid forests and sponges), sandbanks and grey seal
East Coast proposed SPA	The site qualifies by supporting internationally important populations of: Great Crested Grebe, Red-throated Diver, Sandwich Tern, Common Tern, Arctic Tern, Manx Shearwater, Eider Duck.

Marine Protected Areas are designated with the purpose of providing long-term conservation of nature. If well-managed, a completed network of protected sites will provide various additional benefits ('ecosystem services') and improve the overall health of our local seas. Considering the reported declines in biodiversity summarized above, we need Marine Protected Areas more than ever if we are to halt biodiversity loss and aid much-needed ecosystem recovery.

A well-managed MPA network is a key tool to achieve Good Environmental Status (GES) in the marine environment (as required by the UK Marine Strategy Regulations 2010). GES has not been met for seabirds with a declining trend reported. The extent to which GES has been achieved for cetaceans remains uncertain; for harbor porpoise, there is insufficient data to determine population size and the overall species status in the NE Atlantic is classed as unknown.

To achieve Good Environmental Status of our seas, the conservation of these species must be at the heart of decision-making. We are seriously concerned about the need to advocate for this within areas designated for the protection of these species, especially given the recent poor assessments for harbour porpoise and seabirds in UK waters.

We are particularly concerned about the close proximity of the project to the Ulster Wildlife Isle of Muck nature reserve and the Portmuck ASSI. The nature reserve supports the third largest colony of cliff-nesting seabirds in Northern Ireland including fulmar, shag, razorbill, guillemot, black guillemot, and kittiwake. A large variety of other birds pass through, feeding on the productive waters around the island, including gannet, storm petrel, Manx shearwater, terns, divers and passage migrants such as skuas.

Ulster Wildlife has dedicated a considerable amount of conservation effort into the Isle of Muck nature reserve to further enhance the area as a refuge for seabirds, including habitat management works and the reintroduction of grazing to reduce dense grassland vegetation. In 2017, we launched the Isle of Muck Seabird Recovery Project with funding from Biffa Award to conduct predator eradication of brown rats and improve the habitat for breeding seabirds. The project successes were highlighted in the BTO Northern Ireland Seabird Report 2018 (Booth Jones & Wolsey, 2019). This work is also intended to increase the prospects for species such as Manx Shearwater and Puffin to establish on the island. Ulster Wildlife has an ongoing programme of seabird monitoring at the Isle of Muck, providing training to volunteers and trainees and working to ensure the next generation of seabird surveyors. Our successes to date and the ongoing conservation work at the Isle of Muck is reliant on the availability of suitable foraging opportunities and seabird habitat within the Marine Protected Areas surrounding this site.

The NI Marine Protected Area network has not been completed (JNCC, 2018). Species and habitats of conservation importance remain as gaps in the current network and data gathering activities are underway within the NI inshore region.

The inshore area from Islandmagee northwards to Red Bay is an Area of Search (AoS) for a Marine Conservation Zone to protect the critically endangered Common Skate. Ulster Wildlife's Sea Deep project has been working with licensed sea anglers in this region to tag and collect data on the species. Our data (and that held by CEDaR from other sources) provides strong evidence for the year-round presence of Common Skate in the region. From 2018 alone, our Sea Deep project has tagged 23 Common Skate within the project area (around Larne Lough, Islandmagee and the Maidens), including three recaptures which may indicate residency. (Please note – due to the confidential nature of angler tag records, we have not provided exact locations in this response. The coordinates of Common Skate records obtained by the Sea Deep project are shared with CEDaR and restricted to 10km for public access. Exact coordinates are made available to DAERA for management purposes.)

Common Skate is the largest skate species in the world, reaching a total length of up to 3 metres. Their body size and flattened shape constrain movement, resulting in low levels of activity and long periods spent resting on the seabed (Wearmouth & Sims, 2009). The species frequently exhibits site fidelity and, as such, have been identified as able to benefit from site-based MPA protection. However, the mobility of the species and evidence of both resident and transitory individuals, makes connectivity between protected sites a key consideration for their protection.

The Loch Sunart to Sound of Jura MPA on the west coast of Scotland was designated in 2014 to protect Common Skate. The records along the NI coast and west coast of Ireland indicate the potential for the Antrim Coast to function either as an area for resident skate or as an important ground for transient skate from nearby areas. Once designated, the MCZ for Common Skate within NI inshore waters will therefore provide connectivity to the nearby Scottish MPA with wider benefits for the conservation of this critically endangered species.

We are working in partnership with Queen's University Belfast to inform the placing of acoustic arrays which will provide a greater understanding of the movement of Common Skate within this area. We strongly believe that the ongoing work to designate a Marine Conservation Zone for this species should be a key consideration in the decision-making process for this project. A precautionary approach must be applied until we have adequate data on the movement of skate within this area.

The MPA network is a key tool to protect and restore our marine environment. However, additional mechanisms are in place outside of designated sites for the conservation of local biodiversity. The Wildlife and Natural Environment Act (Northern Ireland) 2011 places a duty to conserve biodiversity on the Department. The Northern Ireland Priority Species (NIPS) list sets out the species and habitats which are of principal importance for the purpose of conserving biodiversity. The area that will be impacted by hypersaline brine discharge supports many Northern Ireland Priority Species, as evidenced by the CEDaR data submitted with the consultation documents, including Ocean Quahog, circular crab, and rare and fragile cnidaria and echinoderm species.

The previous NI Biodiversity Strategy to 2020, Valuing Nature, aimed to halt biodiversity loss, stating that 'We are entrusted with protecting [our natural heritage] and handing it on safely to future generations'. A public call for evidence to inform the development of a new Environment Strategy for NI has recently closed with a formal public consultation still to take place. Guidance on the protection of our local biodiversity must be in place to inform the decision-making process, especially given the many potentially damaging activities related to the project.

2. Potentially Damaging Project Activities

The proposed project will involve various activities throughout the construction and operational phases with various potentially damaging effects on wildlife. We have concentrated our response on noise from drilling activities and hypersaline brine dispersal.

Noise from Drilling Activities

The project will involve the construction of sub-surface seawater and brine pipelines and a brine outfall diffuser located 450m offshore. The construction of the seawater intake and brine outfall pipes will require Horizontal Directional Drilling (HDD) over an estimated 6-month period.

The Shadow Habitat Regulations Assessment (SHRA) acknowledges that the noise levels anticipated to occur from the project activities have been derived from 'limited data' (SHRA, p.29). The Marine Environmental Conditions Update (MECU) further states that the data used to estimate drilling noise has come from HDD drilling below the seabed in schist, a medium/hard rock. The report states that the bedrock in the project area is basalt, a hard rock, however concludes that this will only affect the speed of the drilling activity and will not 'significantly' affect the noise levels. We are not satisfied with this assumption and stress that a precautionary approach must be applied to the use of these figures and the conclusions drawn from them. Furthermore, the EIS states that 'Explosives may be required to excavate the drilling pit / sump into the rock' (EIS, p. 4-44), yet the potential impact of explosive use has not been assessed. It is not acceptable to allude to the potential use of explosives without assessing any impacts that may be detrimental to wildlife.

The SHRA assesses the potential for temporary and permanent hearing loss (defined as Temporary Threshold Shift (TTS) and Permanent Threshold Shift (PTS) values) to harbour porpoise and grey seals by the drilling activities. The SHRA states that 'the construction related underwater noise does have the potential to exceed the harbour porpoise TTS threshold limit and slightly exceed the PTS threshold limit' (SHRA, p.30). The SHRA recognizes the behavioural impacts of noise on marine mammals, including longer intervals between surfacing, cessation of vocalization, increased swimming speeds, avoidance, increased group cohesion and more dramatic escape responses. It further describes how dependent marine mammals are on their auditory senses for basic life functions such as feeding, predator avoidance, communication and navigation:

Harbour porpoise are small cetaceans which makes them vulnerable to heat loss and requires them to maintain a relatively high metabolic rate. This makes them potentially vulnerable to disturbance if they are unable to obtain sufficient levels of prey intake. (SHRA, p.31)

The SHRA states that the worst-case underwater noise emissions are expected to occur over a short period of time (approx. 18 days), therefore any disturbance is likely to be a temporary, recoverable impact. We stress that the potential for permanent hearing loss in harbour porpoise is not a recoverable impact and is an unacceptable scenario for the feature species of the protected site.

Additionally, the SHRA defends the expected project noise levels, stating that they are within those already occurring in the area due to ferry traffic. Yet no assessment is made of the cumulative noise level and potential impact on marine mammal hearing. Based on the worst case levels of noise, and the potential cumulative effects of noise in the area, we consider that the risk of permanent injury and displacement of harbour porpoise is not in support of the conservation objectives for the site.

For seals, the SHRA states that they are accustomed to periods of fasting (during natural annual cycles of breeding and moulting), therefore are 'unlikely to be particularly sensitive' to any additional (unexpected) displacement from foraging grounds during periods of noise activity. Yet the report also states that this is not the case for juvenile seals which may be more sensitive to displacement due to smaller body size and higher energetic needs. The time of year when noise activities will take place is not clear from the consultation documents. The SHRA must take into account the impacts of disturbance on fasting seals and juveniles.

The SHRA does not assess the potential effects of noise on grey seals, stating that there will be no likely significant effects as the modelled noise levels are below the TTS and PTS values for this species. First, this does not address the issues of displacement due to noise and sub-lethal energetic impacts, particularly on fasting adults and juveniles. Secondly, the grey seal TTS threshold is 181 dB re 1 $\mu\text{Pa}^2\text{s}$ and the worst case noise levels are only marginally lower at 179.4 dB re 1 $\mu\text{Pa}^2\text{s}$. We again stress that the modelled noise levels are based on 'limited data' and as the noise is expected to reach only 1.6 dB re 1 $\mu\text{Pa}^2\text{s}$ below the grey seal TTS value it is not appropriate to conclude that there will be no significant effect. The potential for temporary hearing loss and displacement on grey seals must be assessed.

The effects of noise on bird populations has not been included, despite the fact that fish – their prey – have been assessed. For 'Group 3' fish species, whereby hearing involves a swim bladder or other gas volumes, it is stated that they may experience TTS and behavioural effects at individual or population levels. Such effects, especially at population levels would have a consequential effect on foraging opportunities for birds and marine mammals in the area. The link between vital ecosystem components has been omitted.

We draw attention to the Conservation Objectives for the North Channel SAC which state that: 'The supporting habitats and processes relevant to harbour porpoises and their

prey are maintained'. We request clarification from the Department regarding the conservation advice and guidance documents that will be used in relation to assessing disturbance impact on the harbour porpoise SAC.

Hypersaline Brine Dispersal and Habitat Loss

Hypersaline brine will be produced as a by-product of the leaching process involved in cavern creation. The construction footprint of the seawater intake and brine outfall will result in the permanent loss of 126 m² of benthic habitat within the inshore foraging grounds of two Marine Protected Areas. The brine is expected to have a salinity level of ~260 psu which is over seven times greater than the natural salinity levels for the project area (30.5 to 34.8 psu). This baseline salinity data was obtained from AFBI and NIEA at the initial project development stage. However, the background salinity of the study area was taken as 34.2 psu for the purposes of the brine dispersion modelling. The reason why this higher figure was used is not clear and we are concerned that this may underestimate the potential effect of the brine dispersal. Furthermore, we are concerned that the greater density of hypersaline brine has not been considered in the brine dispersion modelling.

The cavern construction process and dispersal of hypersaline brine is estimated to require at least four years to complete. In addition, maintenance of the caverns will result in continued dispersal of hypersaline brine throughout the operational period of the project, up to 30 years. No detail is provided on the expected frequency of further leaching activities despite the significant consequences this could have for the recovery of the site. Clear information on the expected frequency, duration and rate of brine dispersal from ongoing maintenance activities must be assessed.

The brine modelling document states that the temperature of the hypersaline brine will be ~2°C higher than ambient. The potential impacts of seawater temperature increase have not been assessed despite the known effects on marine species, for example invertebrate and fish larval development.

Due to the extreme salinity levels and temperature increase, the area surrounding the brine dispersal site will be severely damaged, resulting in the loss of marine life, particularly benthic species, within the foraging grounds of harbour porpoise, grey seals and seabirds – the feature species of the surrounding protected areas.

We draw attention to the following text from the Shadow Habitat Regulations Assessment (SHRA, p.25):

Inshore waters may be important as nursery habitats during summer months. Harbour porpoise need to feed frequently in order to maintain their body temperature and other energy needs. For this reason, porpoise may be highly susceptible to changes in the abundance of prey species or disturbance from foraging areas.

The conservation objectives of the North Channel SAC state that the supporting habitats and processes relevant to harbour porpoises and their prey are to be maintained (JNCC & DAERA, 2019).

The SHRA states that permanent habitat loss will occur in 0.0079% of the total SAC area, concluding that this is not significant as harbour porpoise are highly mobile with a wide foraging area. However, it also states that 'harbour porpoise are known to forage off Islandmagee', that 'the majority of sightings occurred within 4km of the shore, or around the Maidens rocks area' and that 'high concentrations of sightings also occurred around Islandmagee, Ballystrudder and Whitehead'.

The northern extension of the North Channel SAC was proposed as it is an area of persistently high harbour porpoise density. Survey data (submitted during the North Channel SAC consultation) from the Irish Whale & Dolphin Group (IWDG) provides evidence that the inshore waters around Islandmagee are an important foraging site. Harbour porpoise have metabolic rates 2-3 times higher than similar-sized terrestrial mammals and must forage almost continually day and night to meet their metabolic demands. Therefore, even a moderate level of disturbance in inshore waters may have 'rapid and severe' fitness consequences at individual and population levels (Wisniewska et al., 2016).

Therefore it is inappropriate to use 0.0079% as justification for concluding that the expected habitat loss will have no significant effect on populations. Harbour porpoise have a preference for inshore waters and the area of loss is therefore of greater importance. Furthermore, it is not sufficient to state that the ability of a species to travel to and forage in other locations mitigates the loss of habitat. The displacement of harbour porpoise from this area is likely to have an energetic and stress effect that may lead to condition loss and subsequent negative impacts on reproductive ability.

Throughout the consultation documents, the assessment of in-combination effects is lacking with little to no use of quantitative data. The likely significant effects of the additive impacts of the project activities must be fully assessed.

Finally, we feel that many of the proposed mitigation measures are either inadequate or wholly inappropriate. Although the SHRA recognises the potential for significant detrimental effects from noise on harbour porpoise (requiring a Stage 2 assessment), the only mitigation measure provided is the deployment of Marine Mammal Observers. We stress that the use of MMOs to detect animals is a monitoring measure, not a mitigation measure.

We draw attention to the following text from the of the European Commission Article 6 Habitats Directive Guidance from 21st November 2018 which establishes the obligation to monitor the effectiveness of mitigation measures:

For the competent authority to be able to decide if the mitigation measures are sufficient to remove any potential adverse effects of the plan or project on the site (and do not inadvertently cause other adverse effects on the species and habitat types in question), each mitigation measure must be described in detail, with an explanation based on scientific evidence of how it will eliminate or reduce the adverse impacts which have been identified. Information should also be provided of how, when and by whom they will be implemented, and what arrangements will be put in place to monitor their effectiveness and take corrective measures if necessary. (European Commission, 2018)

Furthermore, the EIS mitigation measure for 'Impacts on commercial fish for crustaceans and shellfish through damage to stocks either by mortality or evacuation of the area' states that:

The use of sentinel organisms within the mixing zone and at control sites may be effective in monitoring the impact of the brine discharge on commercially important species. Lobster, crab and scallops could be held in pots or alternative devices to monitor mortality rates at various distances from the outfall in comparison to control sites; trigger levels may be based on baseline mortality rates established at the control sites. These experiments may also facilitate a more detailed assessment of organism health in the area surrounding the discharge.

This measure is archaic and raises serious ethical concerns regarding animal welfare. Furthermore, the information obtained would only provide a crude estimate of mortality and no consideration has been given to the monitoring of non-lethal effects which may result in condition loss with consequences potentially at the population level.

3. Consequences for Climate Action

We are now in a climate and environment emergency with the UN's Intergovernmental Panel on Climate Change warning last year that, "...humankind has less than 12 years to avoid potentially irreversible climate disruption." The UK Government declared a climate emergency in May 2019, followed by over 270 local UK councils including Belfast City, Derry and Strabane, and Ards and North Down. In February 2020, the Northern Ireland Assembly declared a climate emergency, with MLAs supporting immediate action to cut carbon emissions.

There has been a significant shift in public awareness and support for climate action, most notably within younger generations as demonstrated through the School Strike 4 Climate movement. In September last year, over 7000 people of all ages marched through Belfast to demonstrate against the lack of progress.

We must implement the commitments agreed in the New Decade, New Approach agreement, including a review of the Executive's strategies to reduce carbon emissions in respect of the Paris Agreement and to set ambitious targets and actions to achieve a zero carbon society. Reducing greenhouse gas emissions will require a transition away from fossil fuels.

In addition to the biodiversity impacts outlined above, the Islandmagee Gas Storage Project is in direct conflict with the measures required to achieve our climate targets. We are also concerned about the statement made within the EIS that the proposed project facility will be 'one of the biggest power consumers in Northern Ireland when running at peak operations'. We stress that tackling the nature and climate emergencies must be a key priority for the Department.

Summary

In summary, we object to the marine license application due to the potential detrimental effects on wildlife, particularly of the designated feature species of the local marine protected areas. The original marine license application was submitted 10 years ago when the North Coast SAC and proposed East Coast SPA designations were not in place. The (outdated) EIS states that the project location was chosen partly because the intake and dispersal pipes did not fall within a protected site. This is no longer the case and the conservation of these areas must be prioritised.

The UK Marine Policy Statement (UK MPS) states that: 'As a general principle, development should aim to avoid harm to marine ecology, biodiversity and geological conservation interests (including geological and morphological features), including through location, mitigation and consideration of reasonable alternatives'. It further states that the use of 'existing storage features and infrastructure is likely to result in negligible additional impacts although the production of salt caverns may result in significant local impacts and interference with other users of the area'. However, the consideration of reasonable alternative sites and/or methods of brine disposal contained in the EIS are significantly outdated.

Please contact the Ulster Wildlife Living Seas Manager for any further information required in relation to this response.

Yours sincerely,

Rebecca Hunter
Living Seas Manager

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