

Bürgerinitiative Saubere Luft Ostfriesland e.V.

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INTERGOVERNMENTAL COMMITTEE  
FOR THE PROTECTION OF THE WORLD  
CULTURAL AND NATURAL HERITAGE

Via Email

Emden, 07 September 2023

### **Imminent gas drilling off Borkum and Schiermonnikoog endangers the Wadden Sea World Heritage Site**

Dear Sir or Madam,

The citizens' initiative Saubere Luft Ostfriesland is very concerned about the preservation of the Wadden Sea World Heritage Site due to the planned fossil gas production by One-Dyas near the Wadden Sea islands Borkum (Germany) and Schiermonnikoog (Netherlands).

The Wadden Sea represents a habitat that is unique in the world. It is home to countless species and is essential for the intercontinental migration of birds and the survival of numerous fish populations.

Diverse European protection standards such as the Water Framework Directive, Habitats Directive and EU Birds Directive become empty, hollow clichés when new permits for destructive industrial uses are nevertheless issued, the effects of which also reach into the Wadden Sea. The North Sea was five degrees too warm in June this year and is in a poor condition overall. 60% of the originally resident species in the North Sea and the Wadden Sea have already disappeared. A study by the Senckenberg Institute describes that 60% of the terrestrial species will also disappear in the coming years. In this situation, which was and is currently being caused largely by the combustion of fossil hydrocarbons and the processing of their refined products, One-Dyas wants to produce fossil, climate-damaging natural gas for 35 years in the future. The Deutsche Umwelthilfe (DUH), Mobilization for the Environment (MOB, NL), the city of Borkum and the citizens' initiative Saubere Luft Ostfriesland e.V. have been able to obtain an injunction from the court in The Hague, which has prevented the start of drilling in N05a until the decision in the main hearing. In the event that their plans to produce natural gas in N05a could be prevented by a court order to protect the world natural heritage, One-Dyas has immediately started with exploratory drilling in the next adjacent project area N04 as a precautionary measure in order to be able to enable possible gas production in these alternative areas if necessary. As long as the approval process for the production of natural gas does not include a needs assessment or the greenhouse gas emissions (Scope 3 emissions) caused by the natural gas produced when it is used, One-Dyas will try to pro-

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duce all available natural gas in the North Sea. The protection of the world natural heritage stands in the way of their commercial plans.

The available environmental use space in the Wadden Sea and in the adjacent coastal sea is very limited. The production of renewable energies should be given priority over the extraction of fossil hydrocarbons.

For the preservation of the Wadden Sea World Natural Heritage, it is of existential importance to preserve the various habitat types with their ecosystem services that are essential for the survival of the entire system. The geogenic and biogenic reefs play a key role here.

Because reefs are:

- Habitats with increased biodiversity that serve ecosystem functions other than soft soils;
- Habitats and refuges for some rare and endangered animal and plant species;
- Nursery areas (“nurseries”) with high productivity and biodiversity;
- Habitats, spawning grounds and foraging habitats for many fish species;
- Foraging habitats for seabirds and marine mammals as well;
- Stepping stone and regeneration reservoirs in the dispersal of benthic organisms.

The proposed natural gas production would damage reefs and marine life through mechanical damage and underwater noise. Of even more concern, however, are the planned discharges of production water from the platform. According to One-Dyas, 8 tons/a of benzene, 28 tons/a of methanol and also mercury are to be discharged directly into the sea.

However, documents on comparable deposits in Lower Saxony in Rotliegend show that many other substances and sometimes ten times higher concentrations and also radioactive substances can realistically be expected.

Careful environmental impact assessments on both sides of the border would have been necessary to ensure protection of the World Heritage Site.

But the unambitious examination by the Dutch authorities did not find any reefs worthy of protection on the Dutch side. In addition, the test on the German side was also checked according to the Dutch definitions, which are not valid here, and nothing was found either. No separate EIA investigations were undertaken in the German plan approval process. The German authorities referred to the Dutch examination and only examined the data themselves and therefore found nothing particularly worthy of protection. Our own simple research immediately found numerous evidence of reefs (LRT H1170) on both sides of the border. There are numerous studies on the Dutch side that show reefs in the immediate vicinity of the drilling platform. The Dutch WWF has therefore already called for the area to be recognized as a Natura 2000 area. A study commissioned by the DUH at BioConsult confirmed our assumptions about the presence of geogenic reefs on the Dutch side as well as on the German side in the vicinity of the platform and directly on the planned cable route. Submaris then carried out a dive investigation on behalf of Greenpeace and the results were published by BioConsult in a further study. The presence of the reefs including species-rich settlements was confirmed. During additional research, further studies commissioned by the NLWKN and the national park administration

were found which also prove the existence of three other reefs in the adjacent sea area on the German side. In addition, another reef near the border was documented in the German North Sea status report from 2018, which the German authorities had apparently been aware of since 2014. All of these studies on reefs, including those they commissioned themselves, were not mentioned by the German authorities in their statements to the Landesamt für Bergbau, Energie und Geologie (LBEG) and were not taken into account in the plan approval procedure until the discussion date, the online consultations. We have compiled the essential information on the reefs worth protecting here: <http://bi-saubere-luft-ostfriesland.de/category/riffe-vor-borkum-schiermonnikoog/>.

We come to the conclusion that this approval process is significantly overshadowed by commercial and political influences and that the protection of the Wadden Sea World Heritage Site, which is only a few kilometers away, is completely secondary. There is no other way to explain the fact that a collision risk of one to ten over the approval period of 35 years admitted by One-Dyas itself, which would result in the complete destruction of the platform accompanied by immense damage to the Wadden Sea World Heritage Site, did not lead to the rejection of the application. One-Dyas replied to our statement that the risk of collision would be covered by insurance. The fact that this is about potentially irreparable damage to the Wadden Sea apparently does not play a role in this profit-oriented view. We would therefore like to ask you once again to point out to the licensing authorities that they should take the protection of the Wadden Sea seriously.

In the appendix we have compiled a list of examples of threats we have identified that arise from gas drilling for the Wadden Sea and the adjacent coastal sea.

Best regards



Bernd Meyerer



The Bürgerinitiative Saubere Luft Ostfriesland e.V. is member of the national association Citizens' initiatives for environmental protection (LBU) Lower Saxony e.V.

## Appendix

### Threat to the transboundary Wadden Sea World Heritage Site

#### 1 Threats to seals, porpoises, oyster reefs, seabirds and shorebirds

##### 1.1 Seabirds and shorebirds

The UNESCO World Heritage Site is the habitat of over 10,000 different species and 10-12 million birds that make use of it.<sup>1</sup> 45% of sea and shore bird species in the North Sea are in poor condition. In addition, they are being massively reduced by bird flu, which hit the population of sandwich terns in 2022, followed by this year's bird flu, which hit the populations of guillemots and black-headed gulls.<sup>2</sup> The remaining stocks require feeding habitats that do not require additional energy from dodging. For example, guillemots avoid wind farms. Shipping, helicopter traffic, flaring etc. also make the area around the natural gas platform unusable for the animals. In addition, fish that feed on plankton contaminated by the production water could accumulate toxins in birds. At least 15 fish species in the North Sea are also in poor condition according to the 2018 status assessment. Studies show that they are already contaminated with various pollutants. Further deterioration not only endangers regional food network, but also has broader implications. Even the new OSPAR report, which will be published in October 2023, will not show any significant improvement in the reduction of pollutants in the waters of the North Sea and Baltic Sea.

##### 1.2 Seals and porpoises

The seal station in Norddeich is currently reporting records in the breeding of howlers. In addition to their ears and eyes, seals also use their whiskers to orient themselves and pick up the finest vibrations. Similar to porpoises, underwater noise can override communication, which can lead to disorientation of the animals and cause mother and howler/calf to become lost.<sup>3</sup> A further source of disturbance through noise and underwater movements would further endanger the animals' ability to breed and forage. The Borkumse Stenen and Borkum Riffgrund are considered important feeding habitats for seals and porpoises. Studies show that the porpoise population has shifted to Borkum Riffgrund in recent years. There are also increasing sightings of mother-calf pairs. This proves that the porpoises use Borkum Riffgrund as a breeding site. Ramming, cable laying and the increased shipping traffic, including the discharge of pollutants through production water, can massively disturb the sensitive creatures. The noise levels during pile driving should not be underestimated, despite the bubbles. "According to the current assessment of the condition of the German North Sea waters in 2018, there are currently no coordinated procedures for assessing the exposure to impulse noise, shock waves and continuous noise."<sup>4</sup> This means that due to the large number of impacts caused by the introduction of anthropogenic underwater noise, no statement can be made at all about what effects the cumulative factors have and to what extent the current measures are sufficient. Deterrence measures are also to be assessed as negative inputs that scare harbor porpoises up to 7.5 km further than necessary.

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<sup>1</sup><https://www.unesco.de/kultur-und-natur/welterbe/welterbe-deutschland/wattenmeer>

<sup>2</sup><https://www.nationalpark-wattenmeer.de/wissensartikel/vogelgrippe/>

<sup>3</sup> Concept for the protection of harbor porpoises from noise pollution during the construction of offshore wind farms in the German North Sea (noise protection concept) (bfn.de)

<sup>4</sup>[https://members.meeresschutz.info/de/reports/conditionsvaluations-art8-10.html?file=files/meeresschutz/berichten/art8910/cycle18/Zustandsbericht\\_Nordsee\\_2018.pdf](https://members.meeresschutz.info/de/reports/conditionsvaluations-art8-10.html?file=files/meeresschutz/berichten/art8910/cycle18/Zustandsbericht_Nordsee_2018.pdf)

### 1.3 Oyster reefs and sapling tubeworm

More than 85% of oyster reefs worldwide have been destroyed, disappeared or threatened.<sup>5</sup> The few remaining reefs are among the most endangered habitats.<sup>6</sup> However, oyster reefs are important habitats and are considered hotspots of high biodiversity and important ecosystem services. Through their growth, they form biogenic reefs, which are used as settlement substrate, hiding places and shelters, spawning grounds or food. Therefore, several restoration projects were initiated in the North Sea on the German and Dutch side. One of these reefs is located just 750 m from the natural gas platform. An oyster filters 20 liters per hour.<sup>7</sup> This makes oysters very susceptible to absorbing the production water.

Studies have also shown that low-frequency noise (LFN) has a negative effect on the digging ability of tree tubeworms. These occur in large numbers in the vicinity of the natural gas production site.<sup>8</sup> A decrease in density due to LFN would have serious consequences on the ecosystem, such as increasing eutrophication and sedimentary shifting in the area. The reversal is believed to be difficult or impossible.<sup>9</sup> The entire food network in this area would also be changed by the displacement of the animals.

Germany is currently in the process of passing a draft law on the renaturation of nature reserves. It seems almost pointless to sacrifice existing, established reefs and oyster beds in order to then restore them at great expense. The area of the Borkumse Stenen is an important link between the surrounding nature reserves and borders on the Dutch side with the German border. In this area, the platform for extraction of natural gas will be rammed. The area with biogenic and geogenic reefs has been advocated for the designation of a marine reserve since 2008.<sup>10</sup> Dutch and German environmental organizations submitted a renewed application for recognition of the area this year.

## 2 Ground subsidence

Gas production will demonstrably lead to subsidence. Previous calculations of ground subsidence during gas production in Groningen and off the island of Ameland have shown that these were not correctly predicted and negative effects were hidden. According to calculations from 2017, the bottom of Ameland has subsided 37 cm so far. Forecasts show that further centimeters of lowering will occur in the next few years. The subsidence of the island leads to permanent flood-

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<sup>5</sup>[https://www.researchgate.net/profile/Sarah\\_Hauser5/publication/366138927\\_GIS-](https://www.researchgate.net/profile/Sarah_Hauser5/publication/366138927_GIS-BASIER-)  
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<sup>6</sup>Beck et al. 2011,

[https://www.researchgate.net/publication/259495143\\_Oyster\\_Reefs\\_at\\_Risk\\_and\\_Recommendations\\_for\\_Conservation\\_Restoration\\_and\\_Management](https://www.researchgate.net/publication/259495143_Oyster_Reefs_at_Risk_and_Recommendations_for_Conservation_Restoration_and_Management)

<sup>7</sup>[https://www.schutzstation-](https://www.schutzstation-wattenmeer.de/fileadmin/schutzstation/dokumente/Zeitschrift_wattenmeer/Wattenmeer2018-1Muscheln.pdf)

wattenmeer.de/fileadmin/schutzstation/dokumente/Zeitschrift\_wattenmeer/Wattenmeer2018-1Muscheln.pdf

<sup>8</sup>[https://www.greenpeace.de/infomaterial/OasenDerArtenvielfalt\\_Gutachten.pdf](https://www.greenpeace.de/infomaterial/OasenDerArtenvielfalt_Gutachten.pdf)

<sup>9</sup><https://www.sciencedirect.com/science/article/pii/S0269749122011137>

<sup>10</sup> Bos, OG, Pajmans, AJ 2012 Exploring the natural values of Borkum Stones: additional protected area project. IMARES. <http://edepot.wur.nl/240319>. Bos OG Glorius S Coolen JWP Cuperus J Van der Weide B Aguera Garcia A Van Leeuwen PW Lengkeek W Bouma S Hoppe M, & Van Pelt- Heerschap, H. 2014 Natural values Borkum Stones. Supplementary protected areas project (<http://edepot.wur.nl/313494>). IMARES.

Coolen J, Bos O, Glorius S, Lengkeek W, Cuperus J, Van der Weide B, Aguera A. 2015 Reefs, sand and reef-like sand: A comparison of the benthic biodiversity of habitats in the Dutch Borkum Reef Grounds (<http://dx.doi.org/10.1016/j.seares.2015.06.010>). J. Sea Res. 103:84-92

Koelman, M. Deep BV 2018. Survey report. Inspection survey oyster bank North Sea (Borkum) Netherlands, bathymetry, side scan sonar, ADCP and grab samples.

ing of the salt marshes. Around 2,300 species of plants and animals live in the salt marshes and are dependent on this special habitat with its dynamic dryness. Permanent flooding of the salt marshes on Borkum and Schiermonnikoog would massively change the environmental conditions for many species and lead to them no longer serving as a habitat. Studies from Denmark show that salt marshes can withstand sea level rise of 4 mm/year – 10 mm/year and adapt to these new conditions.<sup>11</sup> This bears no relation to the man-made soil subsidence of several centimeters caused by natural gas production. The nests of breeding birds in the salt marshes are also at risk of being flooded. In addition, the vegetation of the salt marshes changes due to the shifting of sediments and edge erosion.<sup>12</sup> Salt marshes are important CO<sub>2</sub> storage sites. They have a capacity of up to 17 t per hectare and year. The potential depends on the existing biodiversity. In addition, subsidence in connection with rising sea levels can pose a threat to coastal protection for the islands. On Ameland, subsidence has also resulted in wetter dunes and more frequent flooding of valleys during storm surges.

### 3 Risk of accident

The risk of an accident in which the platform is destroyed has a probability of 1 in 10. It is impossible to imagine the extent of destruction that an accident on the platform would have on the unique nature of the Wadden Sea and the salt marshes. A world natural heritage site would be destroyed indefinitely. At the end of July 2023, the cargo ship “Freemantle Highway” caught fire off the island of Schiermonnikoog. The ship was unable to maneuver for several days. If the preliminary injunction obtained by our joint plaintiffs had not resulted in the natural gas production platform not being located in field N05-A, this would have been in the immediate vicinity. This could have drastically increased the overall extent and made the rescue even more difficult. This event and the “mild” outcome should make everyone aware of the risk and tightrope walking that the UNESCO World Natural Heritage site is exposed to every day. It needs no further element of risk. The history of the accidents off Borkum shows that the Freemantle Highway is not an isolated case. Also in April 2023, a freighter that was probably driving in automatic mode collided with a wind turbine in the North Sea off the East Frisian Islands (<https://www.tagesschau.de/inland/regional/bremen/rb-erster-vorfall-dieser-art-frachter-rams-wind-turbine-in-north-sea-102.html>). The crew did not notice the ship drifting and did not report the accident. The accident attracted attention due to the extensive damage to the ship.

### 4 Methanlecks

Likewise, methane pockets, which can reach the surface through cracks in weaker sediment through the wells, are not taken into account, nor are abandoned wells and the escape of methane emissions from natural gas flaring. Extensive studies by oil and gas wells have shown that there are methane leaks from almost 2000 wells in the North Sea.<sup>13</sup> Methane is significantly more harmful to the climate than CO<sub>2</sub>. In March 2022, natural gas production off Ameland had to be temporarily stopped. This was due to leaks in the pipeline. Liquids from condensed natural gas were released into nature through the resulting opening on the outer jacket pipe.<sup>14</sup> This proves that leaks are not uncommon. A study from the USA proved that when associated gas is flared, around 9% of the methane escapes into the atmosphere and not around 2% as previously assumed.<sup>15</sup>

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<sup>11</sup>[https://www.researchgate.net/profile/Martin-Stock/publication/292406779\\_Salt\\_marsh\\_management\\_in\\_the\\_National\\_Park\\_Schleswig-Holsteinisches\\_Wattenmeer/links/5b8f8d5245851540d1c9dc4f/Salt-marsh-management-in-the-National-Park-Schleswig-Holsteinisches-Wattenmeer.pdf](https://www.researchgate.net/profile/Martin-Stock/publication/292406779_Salt_marsh_management_in_the_National_Park_Schleswig-Holsteinisches_Wattenmeer/links/5b8f8d5245851540d1c9dc4f/Salt-marsh-management-in-the-National-Park-Schleswig-Holsteinisches-Wattenmeer.pdf)

<sup>12</sup> Wadgidsen Web 2.1 - First negative impact of gas production on Ameland measured

<sup>13</sup><https://www.sciencedirect.com/science/article/pii/S1750583619306504?via%3Dihub>

<sup>14</sup><https://www.nam.nl/nieuws/2022/nam-legen-gasproductie-ame2-tijdelijk-stil.html>

<sup>15</sup><https://www.sciencemediacenter.de/alle-angebote/research-in-context/details/news/mehr-methanemissionen-aus-der-erdoelfoerderung-als-thought/>

## 5 Nitrogen

According to the 2018 status report, 55 % of the North Sea waters are eutrophic and 39 % lack a final assessment. Unfortunately, there can be no question of a reduction due to the additional ship and air traffic to the platform, as well as the flaring of the gas on the platform. While a 25 km regulation is otherwise used in the Netherlands for the spread of nitrogen, it does not seem to play a role in the compensation measures at One-Dyas. Compensation measures in the form of nitrogen certificates reduce the nitrogen pollution in the atmosphere globally. However, the introduction of the nitrogen leads to effects in the vicinity of the nature reserves and the dunes of the islands, which are not reduced as a result. The dunes of the islands can only develop their protective effect, serve as a living space and as a foraging habitat if their functional performance is given. This also depends, among other things, on the vegetation on the dunes. Nitrogen inputs change the nutrient content of the soil and thus the composition of the plants on the dunes. As a result, the plant species originally found can no longer prevail, which leads to a decline in biodiversity and also to a destabilization of the dunes.

## 6 Earthquake

Another danger is the risk of earthquakes. Another expert opinion, drawn up by the German side, shows that there are many uncertainties and that the calculations of the Dutch expert opinion are partly incomprehensible. The topic of soil liquefaction due to earthquakes is not considered at all. Here, even small earthquakes can cause dunes to collapse or the ground to give way. In this context, it was also not investigated how the freshwater lenses from Borkum and Schiermonnikoog would react. There are several scenarios that could lead to the loss or minimization of freshwater lenses. Borkum supplies itself self-sufficiently with drinking water from the freshwater lens. In times of heat waves, water scarcity and drought, the loss of the freshwater lens and dependence on the mainland would be dramatic. In summer, the number of people to be taken care of increases many times over due to tourism on the island, which is why the effects would be even more extensive.