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Klima-, Energi- og  
Forsyningsministeriet

## UNOFFICIAL TRANSLATION

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02-337 Warsaw  
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Office

Date  
25<sup>th</sup> October 2019

File no. xx

/ [initials]

### Permit for Baltic Pipe natural gas pipeline in the Baltic Sea<sup>1</sup>

Energinet and Gaz-System S.A. have been planning to establish the Baltic Pipe pipeline to transport gas from Europipe II in the North Sea to Poland via Denmark. Energinet is the client for that part of the pipeline that is located in the North Sea and in the Little Belt as well as most of the pipeline on land. Gaz-System S.A. is the contractor for the land-based part (appr. 400 m) at Faxe Bugt (Faxe Bay) as well as for the pipeline in the Baltic sea. The Danish Environmental Protection Agency is the environmental authority for the onshore section, while the Danish Energy Agency is the authority for the offshore section.

By letter dated 16 November 2018, Gaz-System S.A. applied for a permit from the Danish Energy Agency to construct the section of the Baltic Pipe natural gas pipeline on the two partial sections of the pipeline that run through Danish territorial waters and the continental shelf area in the Baltic Sea. The two sections run, respectively, from the coastline at Faxe Bugt into Swedish waters and again from Swedish waters through Danish waters at Bornholm and into Polish waters.

Construction and operation of pipelines for use of hydrocarbons in Danish territorial waters and the continental shelf may only take place with the permission of the Minister for Climate and Energy, cf. § 3a and § 4 (1) of Executive Order no. 1189 of 21 September 2018 of the Continental Shelf Act and certain pipelines in territorial waters (the Continental Shelf Act). The right to grant a permit is delegated to the Danish Energy Agency, cf. § 3 (1) (2) in Executive Order no. 1512 of 15 December 2017 regarding the tasks and powers of the Danish Energy Agency, but on 21 December 2018 was taken over by the Minister for Climate and Energy.

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## 1. Permit

### 1.1. Decision

The Minister for Climate and Energy hereby issues to Gaz-System S.A. a permit for the construction of the Baltic Pipe natural gas pipeline in the Baltic.

The permit is granted in accordance with § 3a and § 4 of Executive Order no. 1189 of 21 September 2018 of the Continental Shelf Act, and § 2 of Executive Order no. 1520 of 15 December 2017 regarding certain pipeline constructions in territorial waters and on the continental shelf.

This permit includes the construction, including laying, of the natural gas pipeline in the Danish maritime area of the Baltic Sea. Before putting the pipeline into operation, Gaz-System S.A. must apply to the Danish Energy Agency for a permit to operate the pipeline, cf. § 2 of Executive Order no. 1520 of 15 December 2017 regarding certain pipeline constructions in territorial waters and on the continental shelf.

The permit does not include the necessary permits, approvals, etc. pursuant to other legislation, and does not exempt Gaz-System S.A. from obtaining the necessary permits and approvals under other legislation otherwise.

The Minister for Climate and Energy has obtained a recommendation from the Minister for Foreign Affairs regarding the Baltic Pipe project in connection with the application, which is compatible with the interests of the foreign, security and defence policy of the Kingdom of Denmark, cf. § 3 a (2) of the Continental Shelf Act.

On 12 October 2018, the Minister of Foreign Affairs submitted the recommendation to the Minister of Climate and Energy, stating that the project is compatible with Denmark's foreign, security and defence interests.

The permit is granted, inter alia, on the basis of an environmental assessment carried out in accordance with the Environmental Assessment Act, as the project concerns the construction of natural gas pipelines with a diameter of 872 mm and 133 km in length, and therefore falls under Annexe 1 no. 16 of the Environmental Assessment Act, cf. § 15 (1) (1), and Annexe 1 no. 16 of Executive Order no. 1225 of 25 October 2018 of the Act regarding the environmental assessment of plans and programmes and specific projects (EIA) (Environmental Assessment Act). The environmental impact report prepared for the project is part of the necessary documentation required for the processing of the application and has been prepared by the client. The environmental assessment includes an assessment in accordance with the Habitats Directive and the Birds Directive, etc. A public consultation of at least 8 weeks has been carried out.



Furthermore, the Baltic Pipe is covered by the Espoo Convention, as the project could have an impact on the environment across national borders. This means that Denmark - as are the other countries - is obliged to notify any countries affected about the project. If a neighbouring country expresses interest in participating in the environmental assessment process, they must be involved in the subsequent environmental assessment process. In light of this, Sweden, Germany and Poland have all been involved in the environmental assessment process.

The environmental assessment underwent national consultation from 15 February 2019 to 12 April 2019, and the Espoo material, including an assessment of the cross-border environmental impact of that part of the pipeline that will be placed in Danish waters (the Danish continental shelf and the territorial waters, respectively), underwent public hearing in the affected neighbouring countries during the same period but until 20 August 2019.

The permit is granted on the basis of a satisfactorily completed assessment of the project's environmental impact in Denmark and cross-border environmental impact on neighbouring countries, including a completed public consultation at national level within the framework of Espoo.

The permit is granted after consultation with, among others, the Danish Environmental Protection Agency, the Danish Ministry of Defence Estate Agency, the Danish Maritime Authority, the Danish Directorate of Fisheries, the Danish Coastal Authority, the Danish Working Environment Authority, the Ministry of Foreign Affairs, the Danish Geodata Agency and the Danish Agency for Culture and Palaces.

The permit may not be used until the deadline for appeal of 4 weeks after the publication of the permit has expired, cf. § 6 a (4) and (5) of the Continental Shelf Act.

## 1.2. Conditions

The permit pursuant to § 3 a and § 4 of the Continental Shelf Act is granted on the following conditions, cf. § 4 (2) of the Continental Shelf Act and § 4 of Executive Order no. 1520 of 15 December 2017 regarding certain pipeline constructions in territorial waters and on the continental shelf:

1. The Danish section of the Baltic Pipe pipeline is a partial stretch. The Baltic Pipe pipeline must also be approved by Norway in Sweden and Poland in order for the overall project to be implemented. If Gaz-System S.A./Energinet does not obtain the necessary permits to implement the pipeline project, or the company abandons the project in whole or in part for other reasons, this permit shall lapse. Gaz-System S.A. must notify the Danish Energy Agency if the pipeline project is not completed as detailed in the application.
2. Gaz-System S.A. must submit an updated schedule for the project, including the expected time for laying the pipeline, before work on the latter commences. The schedule must be submitted to the Danish Energy Agency.



3. Gaz-System S.A. must enter into agreements with the owners of cable and pipeline installations crossed by the pipeline. The aim of such agreements would be to ensure that the owners are indemnified as a result of the intersection.
4. Gaz-System S.A. shall submit design and methodology choices in connection with the crossing of other infrastructure for approval by the Danish Energy Agency after entering into agreements with the owners of the infrastructure to be crossed and prior to the laying of the pipeline.
5. Gaz-System S.A. shall allow any future pipelines and cables to cross the natural gas pipeline.
6. Gaz-System S.A. shall take out insurance to compensate for damage caused by the activities carried out under the permit, even if the damage is accidental.
7. Materials used for stabilising the pipeline must not be capable of damaging the flora and fauna of the Baltic Sea such as, for example, introducing invasive species in connection with the placing of rocks.
8. When laying stones, a lookout for animals must be kept from the ship for the sake of marine animals, and should be scared away with a pinging noise before the stones are laid. The Danish Energy Agency requests that a pinging noise be used instead of seal scarers as a preventative measure. Details of the pinging noise must be approved by the Danish Energy Agency prior to the laying of stones, etc.
9. When planning the construction work, the company must try to avoid laying the pipe in what is known as the Arkona Basin during the period from July to August, due to this being the cod spawning period. No intervention work may be carried out during the said period.
10. An agreement between Danish Fisherman PO and Gaz-System S.A. must be submitted to the Danish Energy Agency when it is available, but no later than before when work on laying the pipe commences.
11. Gaz-System S.A. must comply with the requirements set by the Danish Maritime Authority in connection with the project's execution, operation and completion.
12. Gaz-System S.A. must comply with the requirements of the Danish Armed Forces in connection with the project's execution.
13. Gaz-System S.A. must comply with the requirements of the Danish Environmental Protection Agency in connection with the project's execution and operation.
14. Gaz-System S.A. must prepare a monitoring programme for the construction phase, including in connection with the laying of the pipeline. The monitoring programme must include the environmental conditions and be approved by the Danish Energy Agency before work is commenced on laying the pipeline.



15. Gaz-System S.A. must secure that art. 29h(1) of ordinance no. 358 of 8 April 2014 about the museum Act is observed. According to this, discoveries of traces of relics or shipwrecks during construction must be reported immediately to Slots- og Kulturstyrelsen, and any further work must stop.
16. Gaz-System S.A. shall conduct an assessment of the pipeline after it has been laid, including a post-lay survey. The assessment with conclusions shall be submitted for the Danish Energy Agency's approval with regard to whether further seabed intervention work shall be performed.
17. Gaz-System S.A. must comply with the requirements of the Danish Geodata Agency in connection with the project execution. The projected coordinates for the pipelines must be submitted to the Danish Geodata Agency, and the final location (coordinates) for the laid pipelines must be submitted to the Danish Energy Agency, the Danish Ministry of Defence Estate Agency and the Danish Geodata Agency when available.
18. Gaz-System S.A. must document the extent of physical losses, and physical disturbance of the seabed's primary habitat types must be assessed, documented and reported to the Danish Environmental Protection Agency. If possible, the extent of physical losses and physical disturbance should be in relation to the primary habitat types defined in the Marine Strategy Directive. The extent of physical losses and physical disturbance of the seabed's primary habitat types should be reported within 2 months of completion of construction work.
19. Gaz-System S.A. must have established a contingency plan for all phases of the project to address the consequences of hydrocarbon wastage or other unintended incidents. A plan for the contingency measures established must be submitted annually to the Danish Energy Agency.
20. Before the pipeline can be used, Gaz-System S.A. must provide documentation of the management system for operation, inspection and maintenance of the pipeline. The management system must ensure that the operation and condition is monitored on an ongoing basis to ensure the integrity of the pipeline. The management system is reassessed using a risk-based approach based on the observations made of the condition of the pipeline and based on the pipeline's operating conditions.
21. Gaz-System S.A. must ensure that the gas composition remains within the pipeline's design specifications. Any significant change in composition must be accepted by the Danish Energy Agency.
22. Gaz-System S.A. shall prepare a monitoring programme for the operational phase. The monitoring programme must include the environmental conditions and be approved by the Danish Energy Agency before the pipeline is put into operation.
23. Gaz-System S.A. must submit data collected of the construction phase and the operation phase from the proximity to military practice areas to the Naval Command. Data from the submarine practice areas of NATO must not be published or shared with third party without approval of the Naval Command.



24. Gaz-System S.A. must publish findings from the monitoring programs when available but after approval of the Naval Command. The information to be published only concerns environmental conditions during the construction and operation phase.
25. Prior to pre-commissioning, the Danish Energy Agency must be informed of methodology choices, including the choice of chemicals, additives and other treatments, as it is assumed that the environmental impact and risk are minimised as much as possible.
26. A third party verifier must issue a "Certificate of Compliance" documenting that the installations comply with existing regulations, standards and Gaz-System S.A.'s technical specifications. The Danish Energy Agency requests that the "Certificate of Compliance" be submitted to the Agency when available and prior to the time of commissioning of the pipeline installation.
27. Prior to commissioning the pipeline, an Offshore Inspection Release Note must have been issued by the certification company. The Inspection Release Note must be submitted to the Danish Energy Agency as soon as it is available.
28. Gaz-System S.A. shall prepare a monitoring programme for the operational phase. The monitoring programme must include the safety conditions. The monitoring programme must be approved by the Danish Energy Agency and be put in place before the pipeline can be put into operation.
29. After the start-up activities are completed, but before the pipelines are put into operation, Gaz-System S.A. Must submit the results thereof to the Danish Energy Agency.
30. During the construction phase and during operation, pipeline construction is subject to supervision by the Danish authorities. As part of the Danish Energy Agency's supervision of the pipeline, the Danish Energy Agency may at any time request the delivery of internal as well as external audits in order to gain an insight into the auditing carried out and independent third party verification.
31. Gaz-System S.A. must, in good time before the pipeline is expected to be taken out of use, draw up a plan for the decommissioning of the pipeline and submit the plan to the Danish Energy Agency for approval by the latter. Within a specified deadline after operations have ended and after preceding communication with Gaz-System S.A., The Danish Energy Agency may instruct the company to completely or partly remove the pipeline installation - included in this permit - from the seabed, in accordance with art. 4(2) of ordinance no. 1520 of 15 December 2017 about certain pipeline installations in territorial waters and on the continental shelf.

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### 1.3. Complaints

The decision can be appealed in writing to the Energy Board of Appeal, Toldboden 2, 8800 Viborg, within 4 weeks of the decision being published, cf. § 6 a of the Continental Shelf Act.

Anyone with a significant and individual interest in the decision is entitled to submit a complaint under § 6 a (1) of the Continental Shelf Act, as well as local and national associations and organisations whose main purpose is to protect nature and the environment. The same applies to local and national associations whose purpose is to safeguard important recreational interests, if the decision affects such interests.

With kind regards

Dan Jørgensen



## 2. Application

### 2.1. Applicant

The application states that Gaz-System S.A. is a limited company with 100% own shares which plans to carry out daily operations.

Gaz-System S.A.'s registered office is located at ul. Mszczonowska 4, 02-337 Warsaw.

### 2.2. Application materials

The application has been reviewed based on the following key documents submitted by Gaz-System S.A. on 25 January 2019 and subsequent revisions:

- Baltic Pipe, Baltic Sea - Denmark, construction permit application (BALTIC PIPE, BALTIC SEA - DENMARK, Construction Permit Application)
  - Annexe 1: Baltic Pipe route IP and TP coordinates
  - Annexe II: Technical information:
    - Concept Report
    - Hazard Identification Studies Rapport (HAZID Report)
    - CRA, Construction Risk Analysis, Report)
    - QRA, Quantitative Risk Assessment, Report
    - ALARP Report
    - Design Safety Philosophy
    - Project Health Safety and Environmental Plan
    - Contractor HSEQ Requirements Specification
  - Annexe III: Environmental Impact Assessment (EIA):
    - Baltic Pipe offshore pipeline, Permit and Design, Environmental Consequences Report - Baltic Sea, Denmark
    - A Non-technical summary
    - A Introduction and summarising conclusion Baltic Pipe
    - B Annexe 1 Little Belt crossing – Description of offshore construction activities
    - B Annexe 2 Baltic Pipe Little Belt noise from construction work – Noise Note
    - B Little Belt Environmental Consequences Report Baltic Pipe
    - C North Sea Environmental Consequences Report Baltic Pipe
    - D Consequences Assessment Natura 2000 no. 112 Little Belt
    - E Annexe to the section in relation to the Coordination Executive Order
  - Annexe IIII: Baltic Pipe Assessment of environmental impact - Documentation as per the Espoo Convention:
    - Construction Permit Application Summary
    - Baltic Pipe Offshore pipeline – Permit and Design, Espoo Report Denmark



### 2.3. Baltic pipe projectet

The application states that the pipeline project applied for in the Danish maritime area is part of a larger pipeline project.

The application relates to the construction of a 36-inch subsea pipeline in Danish waters in the Baltic Sea. The pipeline in Danish waters is part of a larger project, which consists of an undersea pipeline for transporting gas from Norway to Poland.

The total capacity of the Baltic Pipe project is 10 billion m<sup>3</sup> of natural gas per year. The total length of the pipeline route is projected to be approx. 850 km, of which approx. 133 km of the route is in Danish waters in the Baltic Sea.

### 2.4. Location of the Danish section of the pipeline project

The Danish section of the pipeline project in the Baltic Sea is located in Faxe Bugt where the pipeline route enters the Swedish EEZ and then re-enters the Danish EEZ/territorial waters around Bornholm. From there it enters the Polish EEZ/territorial waters, cf. below:



**Figure 1** Source: Figure 1-1, "Baltic Pipe offshore pipeline, Permit and Design, Environmental Consequences Report, Denmark", February 2019.

The coordinates of the precise location in Danish waters are shown in Annexe I. The final coordinates for the location of the pipeline can only be finally determined once the pipeline has been laid.

### 2.5. Schedule

The application states that laying of the pipeline is expected to start in 2020 in order for it to be ready to transport gas by the end of 2022, cf. section 4.1 of the application.



The installation will start from landing facilities in Denmark near Faxe Bugt, where the pipeline will be laid in a tunnel below the coastline to avoid excavating the coastal cliffs and then placed in a trench to ensure stability and to protect the integrity of the pipeline. Intervention in the substrate will be carried out before the pipeline is constructed. The installation of the pipeline from Denmark to Poland is expected to last about two years.

Construction activities for the entire project in the Baltic Sea are expected to begin in July 2020 and be completed in August 2022. The seabed intervention work in the Baltic Sea prior to the pipeline being installed is scheduled to begin in November 2020. In the application, Gaz-System S.A. reserves the right to make changes in the overall schedule.

## **2.6. Technical considerations**

### **2.6.1. Seabed intervention works**

The application and the environmental assessment state that the laying of the pipeline in certain areas requires further stabilisation and/or the integrity of the pipeline. Stabilisation can be achieved by laying the pipeline in a trench buried in the seabed, or by laying stones on the seabed around the pipeline. Seabed intervention works are planned in some sections of the pipeline route. Seabed intervention works include burial next to the landings, trenching and/or laying of stones to protect the pipeline where it crosses shipping routes and to ensure stability in exposed areas as well as stone/concrete mattress installation to protect existing pipelines and cables.

In coastal areas of landfall in Denmark as well as in shallow areas of less than 25 meters the pipeline is expected to be buried in the seabed. Depending on the location, the trenching will be 1 meter to at least 2 meters below the seabed surface, the latter to secure at least 1 meter between seabed surface and the upper part of the pipeline. In shallow areas, transportation of coastal sediment causes variations in the seabed profile. In these areas, the pipeline must be immersed in a trench at a greater depth. In the Danish section, it is planned that approx. 63.5 km shall be buried.

### **2.6.2. Crossing of infrastructure**

Section 3.5 of the application's environmental impact report states that the Baltic Pipe route crosses existing pipelines, telecommunication cables and power cables in the Baltic Sea. The infrastructure to be crossed has been identified after consultation with the relevant authorities in Denmark, Sweden, Germany and Poland. Furthermore, the Baltic Pipe crosses the Nord Stream pipelines and the planned Nord Stream 2 pipelines in Danish waters south of Bornholm. Section 4 of the application further states that the company is aware that the proposed Nord Stream 2 routes cross the future Baltic Pipe route. The company states that specific crossing designs will be developed for each cable and pipeline crossing.



Generally, concrete mattresses will be used at cable crossings and rock fillings at pipeline crossings.

A detailed crossing design will be prepared in connection with the crossing of the Nord Stream pipeline. The crossing design will be based on the survey results that form the basis of the stone laying design. The purpose is to ensure the integrity of all pipelines in the long term.

The company also explains that a crossing design agreement will be reached with the owners of the cables/pipelines, and the details will be incorporated into the crossing agreements.

### **2.6.3. Hydrocarbon content and composition of the gas**

Section 4.5 of the application states that the gas is dry natural gas. Gaz-System S.A. states that the Baltic Pipe pipeline is designed for dry, sweet (not acidic) natural gas, i.e. the gas contains no H<sub>2</sub>S.

### **2.6.4. Design**

The application states that the pipeline has been designed in accordance with recognised standards and practices for pipelines. Specifically, the pipeline has been designed in accordance with DNVGL-ST-F101 with a design life of 50 years. Gaz-System S.A. reports that Lloyd's Register has been named independent third party for verification of the pipeline design, while the verification of the construction and whether the pipeline system was commissioned according to current technical, quality and security requirements has not yet been awarded.

#### Inspection

During the operation of the pipeline, the application states that since the substance transported is dry sales gas, it is not expected that the "PIGs" will be used during the operation itself, but that inspection PIGs in the form of intelligent "PIGs" should be dispatched regularly through the pipeline system to monitor the integrity of the system. The associated two-way facilities will be installed at the compressor station in Denmark and the receiving station in Poland.

In addition, it is stated that, during operation, regular exterior inspections will be carried out with ROV and measurements of cathodic protection to monitor the pipeline's general condition, where the examination of the completed facility represents the pipeline reference condition prior to pipeline being commissioned.

#### Pressure conditions in the pipeline

The Baltic Pipe offshore pipeline will consist of high-quality carbon steel, which is normally used for high-pressure pipelines and is designed for a design pressure of 120 barg.



The company states that the maximum operating pressure for the pipeline in the Baltic Sea at the landing terminal in Denmark will be 117 barg and 84 barg at the landing terminal in Poland.

#### Temperature conditions in the pipeline

Section 4.4 of the application states that the offshore design temperature is between -7 and +50 degrees C.

#### The pipeline's diameter and wall thickness

The company's pipeline design has a nominal diameter of 36" and a constant internal diameter of 872.8 mm over the entire pipeline route. The wall thicknesses of the steel pipes are based on the maximum permissible operating pressure.

The wall thickness of the Baltic Sea pipeline will be divided into two safety zones (zones 1 and 2). Safety zone 2 is the highest safety class, used onshore at the Danish landing terminal (and the Polish landing terminal), extending 500 m from the coast. The rest of the pipeline is safety zone 1, i.e. medium-high safety class. The wall thickness in safety zone 2 is 23.8 mm and 20.6 mm in safety zone 1, both in accordance with the design standard used, DNVGL-ST-F101.

#### Materials and corrosion conditions

The pipeline will be made up of 12.2 m long individual steel pipes, which will be welded together using the continuous laying process. The steel quality is specified in the application as DNVGL SAWL 450 DF carbon steel and has been selected in accordance with the design standard used, DNVGL-ST-F101.

Inside, the steel pipes will be coated with an epoxy-based material to reduce friction in the pipe and thus improve flow conditions.

Externally, the steel pipes will be coated with a three-layer polyethylene coating to prevent corrosion. The exterior three-layer polyethylene anti-corrosion coating will be applied in accordance with DNVGL-RP-F106. Further corrosion protection is achieved by embedding sacrificial anodes consisting of aluminium and zinc alloys. The sacrificial anodes form a dedicated and independent protection system in addition to the anti-corrosion coating.

Finally, on top of the exterior corrosion coating, a weight-increasing coating consisting of concrete with an iron ore content will be applied. The primary purpose of the coating is to stabilise the pipeline when it is on the seabed, but the coating also provides external protection against external influences, such as from fishing equipment.

The application states that the concrete coated pipes will be transferred to the laying vessel where they are welded together and non-destructive testing will be carried out. Prior to the laying process, a shrink sleeve is mounted on the exposed



steel parts, and a coating is applied to the weld to fill the missing concrete coating on each side of the weld and to protect the weld from corrosion.

The application mentions that the installation at the landing terminal at Faxe Bugt and at Rønne Banke is expected to be performed with a laying barge that can work in shallow water. Here, the pipeline (David interconnections) is picked up by a deep-water laying barge, which carries out the rest of the pipe laying. Davit couplings over water are an activity where two pipeline sections left on the sea floor are raised above the sea surface by means of vessel davits and welded together. The number of davit couplings will depend on the overall pipeline installation scenario. In total, two davit couplings are expected.

#### **2.6.5. Tunnel construction and laying the pipeline**

The company states that the highest cliff at the landing facility at Faxe is 15-17 m high, which is why tunnel construction is the client's preferred method in connection with the landing facility at Faxe. Tunnel building is a method in which a lined tunnel is installed. The hole is drilled using a conventional tunnel boring machine (TBM) with a rotary drill bit. As the TBM moves forward, concrete tunnel elements are pushed in behind the TBM on jacks, providing a permanent lining for the tunnel.

The tunnel construction is expected to continue below the coastline to a water depth of approx. 4 m, where the TBM is picked up from a hole that will be dug into the seabed. The company assumes that the 36" pipeline is welded aboard a laying barge that can sail in low water, and is then pulled in through the tunnel. The tunnel length will be approx. 400 m onshore and 600 m offshore. Therefore, a tunnel length of approx. 1,000 m in tunnel.

The laying of the pipeline at sea is performed with conventional S laying technology from a laying vessel with dynamic positioning (DP). Pipe sections are delivered to the laying vessel via pipe supply vessels. On the laying vessel, the pipes are assembled into a continuous pipeline that is lowered onto the seabed. The DP vessel cannot operate in shallow water (i.e. where the water is less than 20-25 m deep). In these areas, it is necessary to use a barge that can be used in shallow water. The barge is moved forward during the laying by being pulled forward using anchors that are continuously moved forward by anchor-handling vessels.

The procedure onboard the laying vessel consists of the following general steps that constitute a production process: chamfering of pipes, welding of pipes, non-destructive testing of welds, corrosion protection of welds and progressive installation on the seabed.

An average laying speed of about 2.5-4 km per day is expected at a water depths >20 m and 0.5 km per day at a water depths <20 m.



Gaz-System S.A. states in the application that a safety zone with a radius of 1-1.5 km has been set up for laying vessels and a safety zone with a radius of 0.5 km for other vessels. However, it does not expect to set up safety zones around supply vessels. The final safety zones as well as the reporting of positions shall be agreed in more detail with the Danish Maritime Authority.

After laying the pipeline, they must be run in prior to commissioning. Running-in is carried out to confirm the mechanical integrity of the pipeline and to ensure that it is ready for operation and commissioning.

Gaz-System S.A. has stated in the application material that running-in is carried out as wet running-in with pressure testing with seawater. The test water will be discharged back into the sea via a temporary discharge pipe in Denmark. The end of the discharge pipe will be located at a minimum depth of 4 m. A permit will be sought for discharging in accordance with the applicable Danish legal requirements before discharging is commenced.

After the pipeline has been successfully run in, natural gas is replenished for commissioning prior to being put into operation.

#### **2.6.6. Decommissioning**

The pipeline is designed for a minimum life of 50 years. When a pipeline comes to the end of its life, or it is no longer used for economic reasons, it must be shut down. The company states that decommissioning will be performed in accordance with national or international industry guidelines/standards at the time of the pipeline closure.

### **2.7. Safety conditions**

#### **2.7.1. Risk assessment**

The application includes a risk assessment of potential risks related to third-party employees as well as environmental risks during the construction phase. The risk assessment has been carried out in accordance with DNV-RP-H101. Furthermore, an operational risk assessment has been carried out in relation to, among other things, fatal accidents and the environment. This risk assessment has been carried out in accordance with DNV-OS-F101 for pipeline integrity and DNV-RP-F107 for potential environmental risks during the operational phase.

#### Management system for the design and installation phase

The company has described its management system in Annexe 2 of the application: 'Health and Safety Management System'. The company describes that the management system has been designed in accordance with the principles of OHSAS 18001 / ISO 45001 for occupational health and safety management and



ISO 14001 for environmental management. The company has established a health, safety and environmental policy (Health Safety Environment - HSE).

### 2.7.2. Route selection

The company has generally based its route selection in the application for the entire pipeline route on a set of criteria that the company has determined, cf. "BALTIC PIPE, BALTIC SEA - DENMARK, Construction Permit Application", section 3, as well as studies, surveys and geophysical, geotechnical and environmental samples that have been collected.

Overall, the company has based the route selection on the following set of criteria:

- minimising permanent seabed occupation and reducing installation and operation costs. This will maximise the overall performance of the pipeline system while minimising its environmental impact,
- respecting shipping lanes. This minimises the risk of any impact on the pipeline from surface vessels (anchors, sunken or grounded vessels, etc.),
- avoiding areas of special concern, including nature conservation, sensitive flora and fauna, cultural heritage, etc.,
- avoiding areas with maritime activities such as mining, military areas, anchoring areas and wind turbines.
- avoiding areas with unsuitable seabed conditions and/or deep subsurface conditions (bathymetry) which may cause stability problems for the pipeline and will increase the need for construction work, stone placement and ploughing-in;
- respecting existing cables and pipelines as much as possible and
- taking into account planned pipelines and other infrastructure.

The company has specifically assessed the route for the Danish sector and chosen the preferred route in the Danish sector based on a risk assessment of the various alternatives. Due to the authorities' requirements, the company's preferred route differs slightly from the route presented during the first public consultation in connection with the Danish environmental impact assessment.

### 2.7.3. Safety of sailing

The impact on shipping during laying and operation of the pipeline has been assessed by the company as local, short-term and of lesser intensity, cf. "Baltic Pipe offshore pipeline, Permit and Design, Environmental Impact Report-Baltic Sea-Denmark", section 9. The impact will mainly take place during the construction phase. In order to minimise the impact on shipping during the construction phase, it is envisaged that a safety zone will be created around the pipe-laying vessel, cf. section 2.7.6 of this permit.

Gaz-System S.A. states in the application that it is recommended that contractors carry out monitoring (including tracking ships using AIS data) to deal with ships approaching the safety zone.



#### **2.7.4. Fishing**

The fishing conditions are described in section 9 of the application's environmental impact report for the Baltic Sea. The pipeline being applied for passes through a spawning area for cod, which is located in both Swedish and Danish areas. The pipeline passes through several fishing areas including the Arkona and Bornholm Basins.

The application states that the presence of an exposed pipeline on the seabed affects to some extent the fishing activities in the areas where the pipeline runs through areas where bottom trawl fishing is carried out. The impact will predominantly be limited to bottom trawl fishing, as float trawlers allow fishing in the area without the risk of accidents and blocking, as the pipeline can be avoided by providing a sufficient distance between the net of the tug and the pipeline.

Natural embedding (and burial after pipe laying) of the pipeline system will, in many places - depending on the state of the seabed - significantly reduce the risk and disturbance caused by bottom trawl fishing.

The company generally considers that the sensitivity of the potential impact on fishing is low, the intensity is small and the scale local/regional. In terms of duration, the introduction of safety zones and the presence of vessels (i.e. physical disturbance above water) have an immediate effect, while the presence of the pipeline and limitation zone around the pipeline are long term.

#### **2.7.5. Diving operations**

The application states that diving work is expected during construction and in connection with seabed monitoring. For tunnel construction, divers are expected to perform inspections and replacement of drill head equipment on the front of the drill head. Divers are also expected to monitor the seabed to ensure that the restored seabed areas are suitable for re-establishment of eelgrass and benthic fauna.



#### **2.7.6. Protection zone / Security zone**

According to the application, during the laying of the pipeline a safety zone covering around 1,000-1,500 m is required for an anchored laying vessel and approx. 1,000 m for a DP laying vessel and in a 500 m radius for other vessels with restrictions on their manoeuvrability.

The contractor will implement a safety zone in agreement with relevant Danish authorities. Gaz-System S.A. will recommend that contractors implement procedures for contact with nearby mariners and vessels approaching the safety zone, including use of AIS (automatic identification system) communication technology.

During the laying of the pipeline, according to the application, there is a need for restriction zones which will be agreed with the national maritime authorities, after which shipping traffic will be informed and requested to avoid the restriction zone during the construction period.

The company states that a 200 m wide protection zone will be established around the pipeline to protect it from physical damage during the operational phase. This protection zone runs from the tunnel construction exit, approx. 500 m from the coastline, and further into the sea along the pipeline. Within this protection zone, no activities on the seabed may be undertaken. That is why, among other things, it is forbidden to drop anchor inside this zone.

#### **2.7.7. Chemical and conventional ammunition and military training areas**

The company states that the pipeline route runs through areas where there is a risk of encountering both conventional and chemical ammunition. Potential ammunition should be avoided as far as possible by designing the route based on the findings of the geophysical surveys. However, there is a risk of encountering buried ammunition for example during the detailed magnetometer survey conducted prior to laying the pipeline. In addition to conventional ammunition, there is also the risk of encountering chemical ammunition southwest of Bornholm.

A detailed magnetometer survey covering a corridor around the pipeline route will be conducted before the seabed and pipeline activities are initiated. This is to ensure that there is no buried ammunition or similar in the area. The magnetometer survey will be scheduled in agreement with the national authorities responsible for unexploded ammunition (UXO). The Naval Command under the Defense Command and the Naval Diving Service are the competent authorities in Denmark.

Clearing of any ammunition that is found in the magnetometer survey in Danish waters will, if necessary, be carried out by the Naval Diving Service

The company states that the Baltic Sea is a strategic area where different types of military training areas are maintained. Relevant military exercise areas for the Baltic Pipe project are most commonly used by NATO and are therefore of international



importance. There are a number of military training areas within the Danish territorial waters, EEZ and near the planned route. The planned route proceeds north and east of an exercise area in the Danish EEZ west of Bornholm. This underwater exercise area is coordinated by the German Navy (underwater training area coordinator) and is used for NATO training and exercise patrols.

The company will therefore coordinate with the authorities to ensure that there is no conflict with military activities during the laying of the Baltic Pipe.

#### **2.7.8. Environment**

The environmental conditions have been described by the company in the Baltic Pipe Environmental Impact Report-Baltic Sea-Denmark, which describes the environmental conditions in the area where the application has been submitted for the pipe to be laid, and the company's assessment of how the Danish section of the pipeline affects the environment in the Baltic Sea. Also attached to the application is a so-called Espoo report, which describes and assesses the environmental impact under the Espoo Convention, Convention on Environmental Impact Assessment Convention in a Transboundary Context. The latter contains the company's assessment of the effects on the environment for the entire pipeline in the Baltic Sea, including possibly transboundary environmental impacts from the Danish section of the project into Sweden, Germany and Poland.

The Baltic Pipe project is a major construction project that can have a transboundary nature. Pursuant to § 38 (1) of Executive Order no. 1225 of 25 October 2018 of the Act regarding environmental assessment of plans, programmes and specific projects (EIA) (Environmental Assessment Act), neighbouring states should be consulted on projects that are expected to have a transboundary effect. The environmental impact report states that the Environmental Protection Agency is the 'point of contact' in relation to the Espoo Convention, and the Environmental Protection Agency has assessed that the project may have a transboundary impact and is therefore covered by the Espoo Convention. However, this only applies to the section of the project that runs through the Baltic Sea. The project area in the Little Belt and the North Sea has been assessed not to have any noticeable environmental impact across national borders. In relation to the section of the Baltic Pipe project to be established in the Baltic Sea, an Espoo consultation has been conducted in Sweden, Germany and Poland.

#### **2.7.9. Nature protection areas**

It is clear from the Baltic Pipe Environmental Impact Report-Baltic Sea-Denmark, sections 9.19 and 9.23, that a number of marine areas have been designated as Natura 2000 areas within the vicinity of the preferred route. These are areas that are particularly protected either because of the conservation of bird species specified in the EU Bird Directive or areas protected as special habitats under the Habitats Directive. This concerns:

- Stevns Rev (DK00VA305). The distance to the pipeline is approx. 8 km



- The sea and coast between Præstø Fjord and Grønsund (DK006X233, DK006X089 & DK006X084). The distance to the pipeline is approx. 1 km
- Adler Grund and Rønne Banke (DK00VA261). The distance to the pipeline route is approx. 3 km
- Bakkebrædt and Bakkegrund (DK00VA310). The distance to the pipeline route is approx. 1 km
- Sydväst-skånes utsjövatten (SE0430187). The distance between this Natura 2000 area and the Danish construction site will be more than 2 km
- Pommersche Bucht with Oderbank (DE1652301). The distance between this Natura 2000 area and the Danish construction site will be more than 9 km
- Ostoja na Zatoce Pomorskiej (PLH990002). The distance between this Natura 2000 area and the Danish construction site will be more than 9 km.
- Zatoka Pomorska (PLB990003). The distance between this Natura 2000 area and the Danish construction site will be more than 9 km.

Pursuant to the 1971 Ramsar Convention, certain wetlands are particularly protected. The closest Ramsar area in the Danish area in relation to the pipeline is parts of the "Sea and coast between Præstø Fjord and Grønsund" with a distance of approx. 1 km. The area is identical to a Natura 2000 bird protection and habitat area, cf. "Baltic Pipe Environmental Impact Report-Baltic Sea-Denmark", section 9.19.

Stevns Reef, the sea and the coast between Præstø Fjord and Grønsund, Bakkebrædt and Bakkegrund, Adler Grund and Rønne Banke, Pommersche Bucht-Rönnebank and Zatoka Pomorska have also been designated in accordance with the 1994 HELCOM recommendation as Baltic Sea Protected Areas, cf. "Baltic Pipe Environmental Impact Baltic Sea-Denmark", section 7.18.

The application states that there are no activities planned for the Baltic Pipe project in the Danish sector within the designated Natura 2000 areas. The Natura 2000 area which is closest to the proposed Baltic Pipe route is Bakkebrædt and Bakkegrund. The only Natura 2000 areas directly crossed by the pipeline route are located in Sweden and Poland. For these areas, impact assessments have been carried out as part of the national environmental assessment procedures in Sweden and Poland.

In addition, the application states that a material assessment has been made to identify all the elements of the Baltic Pipe project that on their own or in combination with other projects or plans may have a significant impact on Natura 2000 areas. The materiality assessment concluded that potential impact from the Baltic Pipe project, on its own or in combination with other projects and plans, are unlikely to have a significant impact on the Natura 2000 area during the construction and operation of the Baltic Pipe.



#### 2.7.10. Cultural heritage

The application states that there are several registered shipwrecks with position coordinates near the Baltic Pipe route. Seven wrecks have been registered as existing within a 250 m buffer zone on each side of the planned pipeline centre line along the route from Faxe S to the Swedish EEZ. No wrecks were detected within the buffer zones of 250 m and 500 m on either side of the planned pipeline centre line along the route west of Bornholm. According to the national register of ancient relics, no underwater Stone-Age sites have been recorded along the planned Baltic Pipe route.

Based on geophysical data related to the seabed (such as SSS, MAG and MBES data) and associated video recordings of selected sonar and magnetic targets, the Viking Ship Museum in Roskilde has identified the need for further inspection of a number of potential marine archaeological objects (CHOs) with protection zones. Marine archaeological objects (CHOs) located within or very close to the planned pipeline route have been selected to be included in an archaeological target list. The company states that ROV video inspections have been carried out in January-February 2019 in accordance with instructions from the Viking Ship Museum in Roskilde. The Viking Ship Museum in Roskilde has examined the videos for a visual assessment of the inspected objects. Objects considered not to be CHOs have been removed from the target list.

Objects that are considered to be potential CHOs (not unambiguous or presumptive/probable) have been kept on the target list. The company states that, as far as possible, the route of the Baltic Pipe will avoid potential CHOs and their associated protection zones. For specific objects, where re-routing is not entirely, but almost, possible, a dialogue will be initiated with the Viking Ship Museum in Roskilde as well as the Danish Agency for Culture and Palaces for possible adaptation. For specific areas where re-routing is not possible, the Viking Ship Museum in Roskilde will carry out supplementary archaeological diving and ROV surveys to complete the assessment of whether the objects are CHOs or not. Based on the results of the planned archaeological diving and ROV surveys, a final re-routing will be implemented.

The company states that, cf. § 29h of the Museum Act (within 24 miles of land), construction activities will be stopped if archaeological objects are found during construction at sea.



### 3. Assessment of environmental impact (EIA)

The environmental conditions regarding the pipeline project applied for are as follows:

- Baltic Pipe offshore pipeline, Permit and Design, Environmental Impact Report-Baltic Sea-Denmark
  - A Non-technical summary
  - A Introduction and summarising conclusion Baltic Pipe
  - B Annexe 1 Little Belt crossing – Description of offshore construction activities
  - B Annexe 2 Baltic Pipe Little Belt noise from construction work – Noise Note
  - B Little Belt Environmental Consequences Report Baltic Pipe
  - C North Sea Environmental Consequences Report Baltic Pipe
  - D Consequences Assessment Natura 2000 no. 112 Little Belt
  - E Annexe to the section in relation to the Coordination Executive Order
- 
- Construction permit application summary
  - Baltic Pipe Offshore pipeline – Permit and Design, Espoo Report Denmark

The Danish Energy Agency has reviewed the report and found that the report meets the requirements of § 20 of the Environmental Assessment Act.

The company's environmental assessment of the planned pipeline project has been prepared in accordance with the Continental Shelf Act, the Environmental Assessment Act as well as ordinance no. 434 of 02/05/2017 about impact assessment of international nature conservation areas and protection of certain species during offshore preliminary studies, exploration and recovery of hydrocarbon, underground storage, pipelines, etc. (the offshore impact assessment ordinance).

The idea phase (1st public consultation phase) has been carried out through calls for ideas and proposals for the environmental impact report from both authorities and citizens during the period from 21 December 2017 to 22 January 2018. In connection with this, in January 2018 a number of citizens' meetings were held in several places representative of the project in the country.

In connection with the 1st publication phase's call for ideas and suggestions, we received responses from the authorities, organisations and citizens.

The consultation responses received are included in the considerations, partly the location and design of the construction, and partly in the authority's decision on what studies and assessments Gaz-System S.A. must incorporate into their environmental impact report. A more detailed explanation of how the consultation responses have been included in the demarcation process can be seen amongst other things in published delimitation note on the Danish Energy Agency's website on delimitation of the project area and the content of the environmental impact report respectively.



All consultation responses received for the maritime section of the Baltic Pipe project during the idea phase and their locations are summarised in the same demarcation note.

The environmental impact report was discussed with the Danish authorities, organisations and the public from 15 February 2019 to 12 April 2019. This is in line with the requirement for a minimum 8-week consultation period, cf. § 35 (4) of Executive Order No. 1225 of 25/10/2018.

The Danish Energy Agency has participated in public meetings on the pipeline project applied for on 13 and 14 March 2019 in Næstved and Middelfart respectively.

In the consultation regarding national considerations, the North Sea and the Little Belt, the Danish Energy Agency has received comments from:

- Danish Health Authority Radiation Protection
- Environmental Protection Agency
- Citizens
- The Viking Ship Museum
- The Danish Fisheries Agency, Fiskeriinspektorat Øst Ringsted (Fisheries Inspectorate East Ringsted)
- Nord Stream AG
- Citizens (Avodan)
- The Ministry of Defence Estate Agency
- Danish Fishermen PO
- Sibelco
- The Danish Maritime Authority

The Espoo Report was drawn up on the basis of the Espoo Convention (Convention on Environmental Impact Assessment in a Transboundary Context), cf. Executive Order No. 71 of 4 November 1999 of the Convention of 25 February 1991 on Assessing Cross-Border Impact.

In December 2017, in accordance with Article 3 of the Espoo Convention, Denmark notified Sweden, Germany and Poland of the Baltic Pipe project and that an environmental assessment procedure under the Convention should probably be carried out if the project was implemented. The project was covered by point 8 (large diameter oil and gas pipelines) in Annex I of the Convention, and which are projects that are assumed to have a noticeable environmental impact across borders. According to this procedure, Sweden and Poland considered themselves parties of origin under the convention, while Germany considered themselves interested parties under the Espoo Convention.



In the notification, the countries were asked to state whether they intended to participate in the current environmental assessment process and to submit any comments on transboundary environmental impact on their EEZ and territory and to submit any comments they may receive from the public in their countries.

The comments received from the notification as well as the consultation conducted during the idea phase from 21 December 2017 to 22 January 2018 are included as the basis for the demarcation note, on the basis of which Gaz-System S.A. has prepared the environmental impact report.

In view of the above, and pursuant to Article 5 of the Espoo Convention, the Espoo material, which contains an assessment of the transboundary environmental effects of the part of the pipeline intended to be laid in Danish waters has been in public consultation with Sweden, Germany and Poland from 25 February 2019 to 12 April 2019. The countries have been asked whether they assess that the Danish section of the pipeline project may have a significant transboundary impact on their respective areas.

During the consultation with Sweden, Germany and Poland under the Espoo Convention on transboundary environmental impact, comments were received from:

Poland  
Sweden  
Germany

The Danish Energy Agency has presented the company with the responses received from the consultation and Gaz-System S.A. has, at the request of the Danish Energy Agency, commented on these.

Denmark has submitted written answers in and during the case, including answers from Gaz-System S.A. To the countries' assessments that the Danish Energy Agency has assessed as relevant in relation to transboundary environmental impact in the countries concerned. The countries had the opportunity to make further comments on Denmark's response by 29 August 2019 at the latest. Germany and Poland informed Denmark that the answers were satisfactory, while Sweden provided further comments. The Danish Energy Agency has assessed that the additional comments from Sweden have been addressed, while elaboration has been provided on Denmark's previous reply to Sweden.

The comments that, in the opinion of the Danish Energy Agency, are of a transboundary environmental nature, have been taken into account in the processing of the application and preparation of the permit, and in some cases have resulted in conditions in the permit, cf. section 1.2 and Annex 3.

A summary of the comments received is set out in Annexes 2 and 3.



On the basis of the report and its own assessments of the materiality of the impacts identified and of the adequacy of the proposed mitigation measures, national consultation responses and international consultation responses, cf. the Espoo process, the Danish Environmental Agency finds that the Baltic Pipe project in the Baltic Sea can be constructed and operated without unacceptable impact on people, the environment, the community, etc., if the framework for the construction and operation of the project as described in the submitted application and environmental impact report of February 2019, including the mitigation measures described in the environmental impact report, are implemented and the conditions for the permit, cf. section 1.2, are complied with.

The Danish Energy Agency finds that the environmental assessment of the section of the pipeline project applied for in the Danish maritime area has been completed with a satisfactory result.

The Danish Energy Agency's assessment is based, among other things, on comments, information and assessments from the competent authorities.

In connection with the decision, the Danish Energy Agency emphasised the following factors:

#### Overall Natura 2000 areas and Annexe IV species

The environmental impact report contains an assessment of the project in relation to the protection considerations in the Natura 2000 areas located at distances of up to 16 km from the project area. This must be seen in relation to the fact that the vast majority of the project is a stretched out construction, the impact of which is predominantly local in nature. Following the provisions about co-ordination of assessments, cf. Chapter 5 of the Environmental Assessments Order, an overall assessment according to the offshore impact assessment ordinance was prepared of the parts of the project in the sea in accordance with the common procedure, cf. art. 8 of the Environmental Assessments Order. These materiality assessments are collected in 'Natura 2000 and Annexe IV species (water) as well as in Section 4.7.9 of this permit.

The conclusion on the basis of both the habitat assessments mentioned above and the environmental impact report is that the project's construction on water will not harm the species and habitats that are on the designation basis for the Natura 2000 areas.

The porpoise is the only marine Annexe IV species (strictly protected species) found in the Danish Baltic Sea in the areas close to the gas pipeline. Significant impact on these species is avoided by the company implementing a number of measures such as marine mammal observers (MMOs), passive acoustic monitoring (PAM) and seal scarers. The Danish Energy Agency points out that it is preferable to use pinging noises rather than seal scarers.

This translation is provided for convenience only, and in the event of any conflict between the wording of the Danish and English versions, the wording of the Danish version shall prevail in all respects.



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The environmental impact report and the Agency's assessment in accordance with the Offshore Impact Assessment Executive Order also show that the project will not intentionally interfere with Annex IV species in their natural distribution area, especially during periods of breeding, caring for their young, wintering or migrating, and will not damage or destroy breeding grounds or resting areas in the natural distribution areas for the species listed in Annex IV of the Habitats Directive.



## 4. Authorities' comments and assessment

The processing of this permit has involved consultation with relevant Danish authorities for an assessment of the project applied for. The authorities' comments are included in the relevant topics. Also included are any comments and assessments the Danish Energy Agency may have on the individual topics. The topics are the same as in Gaz-System S.A.'s application, cf. section 2.

### 4.1. Applicant

The Danish Energy Agency has no more comments on this issue.

### 4.2. Application materials

The Danish Energy Agency finds that the application material submitted by Gaz-System S.A. is adequate and therefore has no further comments on this topic.

### 4.3. The Baltic Pipe project

The Danish section of the Baltic Pipe pipeline is a partial stretch. The Baltic Pipe pipeline must also be approved by Norway in Sweden and Poland in order for the entire project to be implemented. If Gaz-System S.A. and Energinet do not obtain the necessary permits to implement the pipeline project, or the companies abandon the project in whole or in part for other reasons, this permit shall cease to be valid. Gaz-System S.A. must notify the Danish Energy Agency if the pipeline project is not completed as requested (condition 1).

Gaz-System S.A. must take out insurance to compensate for damage caused by the activities carried out under the licence, even if the damage is accidental (condition 6).

The Danish Energy Agency has no more comments on this issue.

### 4.4. Location of the Danish section of the pipeline project

The coordinates for the detailed location in Danish waters are shown in the application's "Baltic Pipe, Baltic Sea - Denmark, application for construction permit". The final coordinates of the pipeline location and thus the kilometre points can only be finally determined once the pipeline has been laid.

The Danish Geodata Agency states that it expects Gaz-System S.A. To apply for a sea survey permit and meet the general sea survey conditions. See <http://gst.dk/soekort/soeopmaaling/privat-soeopmaaling/>

The Danish Geodata Agency expects, among other things, to receive coordinates for the gas pipeline (both projected and as-built) to be used for adding the gas pipeline in the maritime charts, cf. condition 17.

Gaz-System S.A. must comply with the requirements of the Danish Geodata Agency in connection with the project execution. The projected coordinates for the



pipelines must be submitted to the Danish Geodata Agency, and the final location (coordinates) for the laid pipelines must be submitted to the Danish Energy Agency, the Danish Ministry of Defence Estate Agency and the Danish Geodata Agency when available.

#### **4.5. Schedule**

Gaz-System S.A. must submit an updated schedule to the Danish Energy Agency prior to the laying of the pipeline, cf. condition 2.

Cf. the section on fisheries, the permit includes a condition concerning a time limit for construction activities in July and August (condition 9).

#### **4.6. Technical considerations**

##### **4.6.1. Seabed intervention works**

Five sections are planned where intervention work in the form of burying in the seabed is expected to be necessary. The sections are located in Faxe Bugt and southwest of Bornholm and constitute a total length of approx. 63.5 km.

It is crucial for the Danish Environmental Agency's assessment of the intervention work that the number and location of the sections do not change and that the length of the planned sections does not change significantly.

After the pipeline is laid, Gaz-System S.A. must prepare an assessment of the pipeline, including conducting a post-lay survey. The assessment must be approved by the Danish Energy Agency, which may require additional seabed intervention work (condition 16).

##### **4.6.2. Crossing of infrastructure**

In their application Gaz-System S.A. has identified 15 cable crossings in Danish waters as well as 2 Nord Stream I crossings and 2 Nord Stream II crossings that will be crossed by the Baltic Pipe pipeline. The 15 cables are expected to be crossed by placing concrete mattresses on the seabed and the two pipelines by backfilling, by placing a concrete mattress on top of the existing pipelines and subsequently consolidate the Baltic Pipe pipeline by backfilling. In relation to planned infrastructure, the company states in the application that the proposed Baltic Pipe route crosses the future route of Nord Stream 2. The Danish Energy Agency notes that the crossing is expected to take place in Danish waters.

Gaz-System S.A. must secure that an agreement has been made with the owners of the infrastructure being crossed (condition 3) and subsequently submit the design and method of construction of the crossing for approval by the Danish Energy Agency prior to the start of the work (condition 4).



Gaz-System S.A. shall ensure that it is possible for any future pipelines and cables to cross the natural gas pipeline applied for on Danish maritime territory and the continental shelf, cf. condition 5.

#### **4.6.3. Content of hydrocarbons and composition of the gas**

Gaz-System S.A. has, after submitting the application, specified the gas composition for the gas to be transported in the pipeline. It is essential for the permit that the gas composition stays within the design specification for the pipeline. Any significant change to the composition must be accepted by the Danish Energy Agency, cf. condition 21.

#### **4.6.4. Design**

A third party verifier must issue a "Certificate of Compliance" documenting that the installations comply with existing regulations, standards and Gaz-System S.A.'s technical specifications. The Danish Energy Agency requests that the "Certificate of Compliance" be submitted to the Agency when available and prior to the time of commissioning of the pipeline installation (condition 26).

The management system in the pre-commissioning phase of the project must ensure and document that Danish legislation and requirements and regulations are complied with in both normal and critical situations, including that appropriate emergency contingency plans for accidental events have been established, condition 20. Changes in emergency contingency plans must be submitted to the Danish Energy Agency and once a year Gaz-System S.A. must submit the applicable plan for the established emergency contingency arrangements to the Danish Energy Agency. The timing of the annual submission shall be agreed with the Danish Energy Agency.

Before the pipeline is commissioned, an Inspection Release Note must be available from the certification company. Inspection Release Note must be submitted to the Danish Energy Agency as soon as it is available, cf. condition 27.

The Danish Energy Agency expects Gaz-System S.A. to audit the Baltic Pipe project in the Baltic Sea according to a regular schedule. Regarding this, the Danish Energy Agency also points out that the agency at any time may request an updated list of audits as well as necessary insight into the audit and third party verification when required or this was chosen as documentation for the implementation of the project (condition 30).

#### **4.6.5. Laying of the pipeline**

##### Pre-commissioning

Gaz-System S.A. has stated in the application which method they expect to use for commissioning or pre-commissioning of the Baltic Pipe pipeline. Running in is carried out as wet running in with pressure testing with seawater in the Baltic Sea.



On the current basis, the Danish Energy Agency can accept wet commissioning of the pipeline as pre-commissioning and that the permit is conditional on wet commissioning as pre-commissioning. The Danish Energy Agency must be notified in due time prior to commissioning about choice of method, including potential choice of chemicals, additives, and all other treatment (condition 25), as it is presupposed that the environmental impact has been minimized to the greatest extent possible.

After commissioning activities have been carried out but prior to actual operation of the pipelines, Gaz-System S.A. must submit the results of these activities to the Danish Energy Agency, cf. condition 29.

#### Operation and maintenance

The Danish Energy Agency assumes that Gaz-System S.A. will continuously monitor the flow and composition of the transported natural gas to ensure that these are within the design specifications for the pipeline, and that operations are carried out within the design specifications of the pipeline. Maintenance and operation are expected to live up to and follow the instructions of the manufacturer and be implemented into Gaz-System S.A.'s management system for maintenance in order for it to be available for oversight by the authorities (condition 30).

A management system for operation, inspection and maintenance of the pipeline must be prepared and put into operation before the pipeline is commissioned. The inspection plan should indicate how often and to what extent visual inspection (fittings, marine vegetation, integrity of all types of seabed intervention, etc.) is performed with ROV, acoustic studies, etc., for the status of both the pipeline and the seabed, cf. condition 20 in the permit.

The Danish Energy Agency points out that operation, inspection, and maintenance must be re-assessed on a risk-based approach based on documented observations of the condition of the pipeline and the current operational conditions for the pipeline.

Gaz-System S.A. shall prepare a monitoring programme for the operational phase. The monitoring programme must include the safety conditions. The monitoring programme must be approved by the Danish Energy Agency prior to commissioning of the pipeline, cf. condition 28.

#### **4.6.6. Decommissioning**

Gaz-System S.A. describes in the application and the environmental impact report that the pipeline is designed for a minimum life of 50 years. Gaz-System S.A. points out that decommissioning will take place in accordance with the applicable rules and standards at the time of decommissioning.

The Danish Energy Agency points out that complete or partial decommissioning of the Gaz-Systems S.A. pipeline in Danish waters in the Baltic Sea requires approval



by the relevant Danish authorities. The current guiding principle is that such a decommissioning requires removal and complete clean up with the least possible intervention and impact of the marine environment (condition 31).

## **4.7. Safety and environmental conditions**

### **4.7.1. Risk assessment**

#### Management system for the design and installation phase

Gaz-System S.A. must provide documentation of its management system for operation, inspection and maintenance of the pipeline in the Baltic Sea before the pipeline can be put into operation. The management system must ensure that the operation and condition is monitored on an ongoing basis to ensure the integrity of the pipeline. The management system is reassessed based on a risk-based approach on the basis of the observations made concerning the condition of the pipeline and based on the operating conditions of the pipeline (condition 20).

### **4.7.2. Route selection**

The safety risks to the Baltic Sea pipeline are considered by the company to be acceptable and reduced in accordance with the ALARP principle for designated areas, to ensure the lowest level of risk.

The Danish Energy Agency has no further comments on the route choice.

### **4.7.3. Safety of sailing**

The Danish Maritime Authority, after reviewing the environmental impact report for the individual sections and other materials received in connection with consultation, had no comments to make regarding maritime safety.

However, the Danish Maritime Authority notes that the materials mention that there will be continuous information provided for the Maritime Intelligence Database (EfS) regarding the location of the construction vessel. To this end, the Danish Maritime Authority emphasises that normal practice is that a general announcement in the EfS about the project (for each section) is made well in advance of the start of the work. This includes information that laying vessels are covered by a dynamic safety zone, for example. 500 metres.

In their consultation response, the Danish Maritime Authority points out that the ordinance about shipping safety in relation to construction work and other activities, etc. in Danish territorial waters (no. 1351 of 29 November 2013) must be adhered to. Also, the assessment chart for the assessment of the shipping safety in relation to construction at sea, cf. ordinance no. 1351 of 29 November 2013 must be adhered to.



The Danish Energy Agency points out that Gaz-System S.A. must comply with the requirements set by the Danish Maritime Authority in connection with the project's execution, operation and decommissioning (condition 11).

#### **4.7.4. Fishing**

##### The Arkona Basin

In their consultation response to Denmark, the Swedish Agency for Marine and Water Management stated that a condition must be inserted in the Danish permit for the Baltic Pipe pipeline whereby activities related to laying must not take place in the Arkona Basin in July and August due to this being the spawning period for the Baltic cod.

The Danish Energy Agency has sent the Swedish consultation response for comment from the Danish Directorate of Fisheries. The Danish Directorate of Fisheries states that they cannot deny that the construction activities with the resulting sound, altered water flow, etc., may have some negative effect on the breeding cod. Against this background, the Danish Fisheries Agency supports the Swedish desire to insert a condition into any permit granted for the laying of the Danish section of the Baltic Pipe pipeline regarding a time limit for construction activities in July and August in the Arkona Basin in relation to the cod spawning period.

Against this background, there will be no seabed intervention work during July and August in the Arkona Basin, due to being the cod spawning period (condition 9).

##### Agreement between Danish Fishermen PO and Gaz-System S.A.

An agreement must be concluded between Danish Fishermen PO and Gaz-System S.A. prior to the laying of the pipeline. The agreement finds that the parties have a common understanding of how the pipeline should be placed on the seabed in a satisfactory way for fishing and that the parties have reached agreement on the issue of compensation for lost profits in connection with the laying and operation of the pipeline for the commercial fishermen concerned.

The agreement must be submitted to the Danish Energy Agency when it is available, however no later than before work on laying the pipeline begins, cf. condition 10.

#### **4.7.5. Diving operations**

The Danish Energy Agency notes that the Danish Maritime Authority sets safety, health and environmental requirements in connection with diving work in Danish waters and from Danish ships. Against this background, the Danish Energy Agency must point out that Gaz-System S.A. and a third party must comply with the requirements set by the Danish Maritime Authority in connection with the project's execution, operation and decommissioning (condition 11).

#### **4.7.6. Protection zones and safety zones**



The Danish Energy Agency notes that the safety zone during and the protection zone after the laying of the pipeline must be agreed with the Danish Maritime Authority.

#### 4.7.7. Chemical and conventional ammunition and military training areas

In their consultation response, the Danish Ministry of Defence Estate Agency points out that, with work on or in the seabed, if residues of ammunition or objects that may be dangerous (UXO) are found, the work must be stopped immediately and the Ministry of Defence's Operations Centre must be contacted, cf. § 14 of Executive Order no. 1351 of 29 November 2013 on sailing safety in construction work and other activities, etc. in Danish waters, cf. condition 12.

The Danish Ministry of Defence Estate Agency emphasises that during the phase of the investigation where anomalies (UXO survey) are identified, a Mine Team Leader from the Naval Diving Service must be present. Expenses incurred for this are paid by the applicant.

The Danish Ministry of Defence Estate Agency points out that Defence Command Denmark must approve the plan for any future UXO surveys.

In addition to the foregoing, the Danish Ministry of Defence Estate Agency points out that the permits issued, as well as contact information for the ship or vessels performing the work, must be made available to the Ministry of Defence Operations Centre via the authority issuing the permit. If there are any updates for the contact information they can be forwarded to the Joint Operations Centre at these addresses:

Contact information for the Ministry of Defence Operations Centre:

	Telephone	Email
Duty Officer:	+45 72850380	<a href="mailto:FKO-KTP-NMOC-VO@mil.dk">FKO-KTP-NMOC-VO@mil.dk</a>
Maritime Assistance Service:	+45 72850371	<a href="mailto:mas@sok.dk">mas@sok.dk</a>
Duty Manager JOC:	+45 72850332	
Switchboard:	+45 72850000	

Any updates must be sent directly by the permit holder to the Ministry of Defence Operations Centre.

Gaz-System S.A. must comply with the Ministry of Defence's requirements and guidelines, cf. condition 12 of the permit.



#### 4.7.8. Environment

##### The NOVANA monitoring programme:

The Danish Environmental Protection Agency states that it would like to be notified when work is being carried out in the Baltic Sea at Fakse Bugt so this can be taken into account when implementing the NOVANA monitoring program.

##### Monitoring:

In their consultation response, the Danish Environmental Protection Agency states that after the establishment of facilities in the Baltic Sea, the extent of physical loss and physical disturbance of the seabed's overall habitat types must be assessed, documented and reported to the Danish Environmental Protection Agency. Furthermore, the Environmental Protection Agency recommends that a monitoring programme for sediment dispersion is implemented that, among other things, is capable of verifying the foundation for the assessment of potential environmental impact as reported in the environmental impact reports. It should also document the extent of a potential impact on sensitive marine habitats, cf. condition 18.

The Danish Energy Agency points out that a plan for leakage from the pipeline in accordance with art. 33 of ordinance no. 1033 of 4 September 2017 of the Marine Environment Protection Act and ordinance no. 909 of 10 July 2015 about preparedness for pollution of the sea from oil and gas installations, pipelines and other platforms must be submitted to the Environmental Protection Agency for approval prior to commissioning. Furthermore, the agency refers to the provisions about immediate reporting of leakage from the pipeline according to art. 2 of ordinance no. 874 of 27 June 2016 about reporting in accordance with the Marine Environment Protection Act.

Gaz-System S.A. must comply with the Danish Environmental Protection Agency's stipulated requirements in connection with the project's execution and operation, cf. condition 13 of the permit.

##### Monitoring programmes

Gaz-System S.A. shall prepare monitoring programmes for the construction phase and the operational phase, which shall include the environmental conditions, and these must be approved by the Danish Energy Agency before commencement of pipeline laying and before the pipeline is put into operation respectively, cf. conditions 14 and 22.

The findings from the monitoring programmes pertaining solely to environmental conditions must be made accessible to the public when they are available after approval by the Naval Command (condition 23).

In their consultation response, Bundesamt für Infrastruktur, Umweltschutz und Dienstleistungen der Bundeswehr informed that if the Danish authorities requires



Gaz-System S.A. to publish findings from the monitoring programmes about the environmental conditions in the construction and operation phases close to NATO's submarine training areas, these may not be made public due to security-based considerations in relation to NATO partners and friendly nations, unless a mutual agreement with the German Navy can be reached concerning the material to be made public. It must be secured that security-relevant and sensitive military data about NATO and friendly nations will not be made public.

The Danish Energy Agency has presented the German response to the consultation to the Naval Command that stated that they support the German demand for not making data from the NATO submarine training areas public without expressed acceptance from the German Defence. The Naval Command suggests that Data for approval from the training areas in Danish EEZ are forwarded by the Naval Command to the German Defence prior to publication.

Based on this, it is required that Gaz-System S.A. will forward the data that were collected in the construction and operation phases in the military training areas to the Naval Command prior to publication, cf. condition 24. Data from the submarine practice areas of NATO must not be published or shared with third party without approval of the Naval Command.

The Naval Command reserves the right to place a controller on the ships that will carry out the monitoring inside the training areas in Danish EEZ.

#### Invasive species

Materials for the stabilisation of the pipeline must not be capable of damaging flora and fauna, such as by trapping invasive species in connection with the deposition of rocks, cf. condition 7.

#### Contingency planning

Gaz-System S.A. must have established a contingency plan for all phases of the project to address the consequences of hydrocarbon wastage or other unintended incidents. The contingency planning established set up must be submitted annually to the Danish Energy Agency, cf. condition 19.

### **4.7.9. Nature protection areas**

#### **Baltic Sea - Natura 2000 areas and Annexe IV species**

##### ***Natura 2000 areas***

The only Natura 2000 areas directly crossed by the pipeline route are in Sweden and Poland. For these areas, impact assessments have been carried out as part of the national environmental assessment procedures in Sweden and Poland. None of the Danish Natura 2000 areas are crossed by the pipeline route. There are four Danish Natura 2000 areas within a distance of approximately 8 km from the Baltic Pipe survey corridor in the Baltic Sea: Stevns Rev (DK00VA305), the sea and coast between Præstø Fjord and Grønsund (DK006X233, DK006X089 & DK006X084),



Adler Grund and Rønne Banke (DK00VA261) and Bakkebrædt and Bakkegrund (DK00VA310), cf. Figure 2 below.

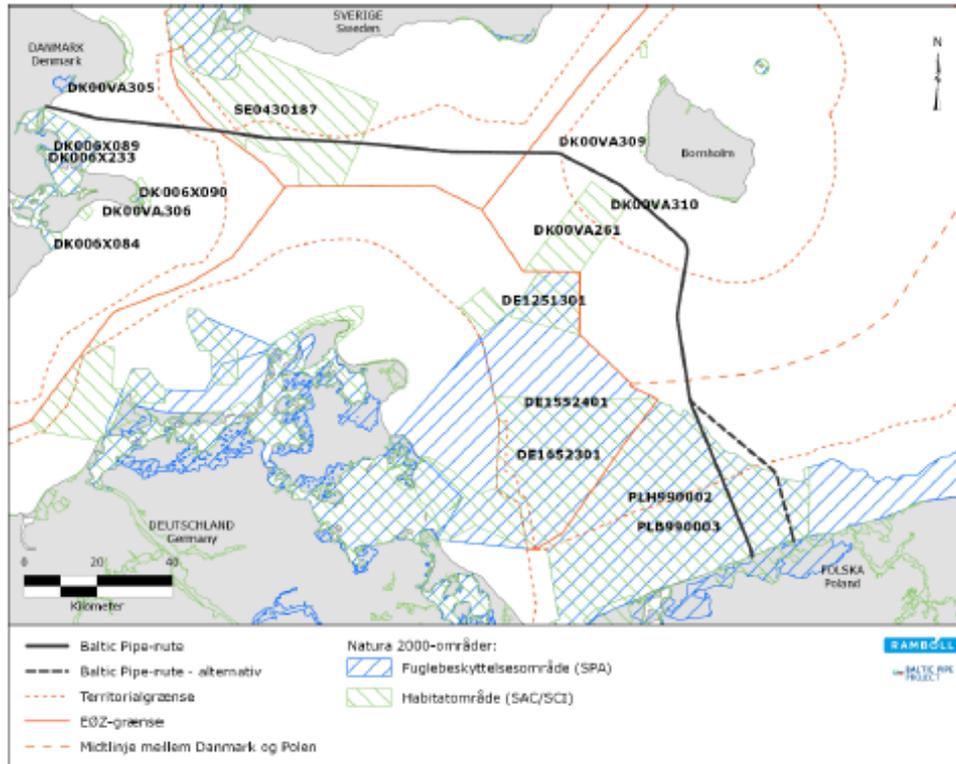


Figure 2 Natura 2000 areas in the Baltic Sea.

### Stevns Rev (DK00VA305)

The Natura 2000 area Stevns Rev (DK00VA305) is a habitat area located more than 8 km from the Baltic Pipe pipeline in the western part of the Baltic Sea. The designation base is reefs and sandbanks, which are always slightly covered by seawater. The sandbanks are on the northernmost side of the habitat area (more than 30 km from the construction site) and outside the area that could potentially be affected. The size of this area is 4,640 ha, of which 2,546 ha are mapped as reefs, 87 ha as sandbanks and 52 ha as biogenic reefs. The reef is covered in macro algae.

In the Natura 2000 management plans for 2016-2021, there is no assessment system for marine habitat types, but the overall goal is to achieve a good state of conservation. Commercial fishing is allowed and takes place in the southernmost parts of the area, and this is not currently considered a threat to the designated habitats. Due to the distance from potential sediment dispersal and the distance from the construction activities to Stevns Rev, it is not likely that there will be a significant impact on this Natura 2000 area. It is concluded that potential impact from the Baltic Pipe project, on its own or in combination with other projects and plans, are unlikely to have significant effects in the Natura 2000 area.

### The Danish Energy Agency's assessment



Based on the "Baltic Pipe Environmental Impact Report-Baltic Sea-Denmark" and the materiality assessment presented here for the Natura 2000 area Stevns Rev (DK00VA305), including the distance from potential sediment dispersal, the Danish Energy Agency does not find that the project in the construction phase and the operational phase must be assumed to influence the designation basis of the nature conservation area at a distance of about 8 km from the Baltic Pipe survey corridor. The Danish Energy Agency therefore does not believe that an impact assessment must be prepared for the area, cf. § 4 (4) of the Offshore Impact Assessment Executive Order.

The sea and coast between Præstø Fjord and Grønsund (DK006X233, DK006X089 & DK006X084)

Only the sea and the coast habitat area (SCA) between Præstø Fjord and Grønsund (H147) is included below, in accordance with which the SPAs have been omitted.

The sea and the coast between Præstø Fjord and Grønsund is a habitat area covering an area of 32,972 ha, of which approx. 87% are ocean. The area at sea, which includes Ulvsund and Grønsund, is not relevant to the current project, as the distance is too large and because the area is in a confined bay. The designation basis for this area includes many habitats, and the spotted seal species. The area is located approx. 1 km from the pipeline. As can be seen in Figure 3, it is not likely that the coastal lagoons will be affected due to this type of boundary and the distance to the project area (more than 6 km). The spotted seal breeds in the area (fewer than 40 individuals), and there are two seal colonies on the small island of Eggholm and the northeastern part of Jungshoved (see Figure 3). In the Natura 2000 management plans for 2016-2021, there are no marine habitat assessment systems. But the overall goal is to achieve a good state of conservation. The preservation state of the spotted seal is considered to be unfavourable. In the management plans, disruption from human activities is assessed as posing the current threat to the spotted seal and to constitute the only identified threat to marine designations. Significant impact on the habitats of H147 (as well as SPAs F84 and F89) is unlikely. Due to a changed burying scenario in Faxe Bay, suspended sediment may spread into the Natura 2000 area and may pose a risk to the designated habitats within the Natura 2000 area. This is located over 1 km from the construction area. Modelling results have shown that construction-related sediment waste will be very limited in duration and concentration, and the area that could potentially be affected is at the boundary of the area. Therefore, a significant impact on the Natura 2000 site is unlikely. Due to optimisation of the project, sheet piling will no longer be used for construction. Therefore, it is considered that a significant impact on designated seals is unlikely.

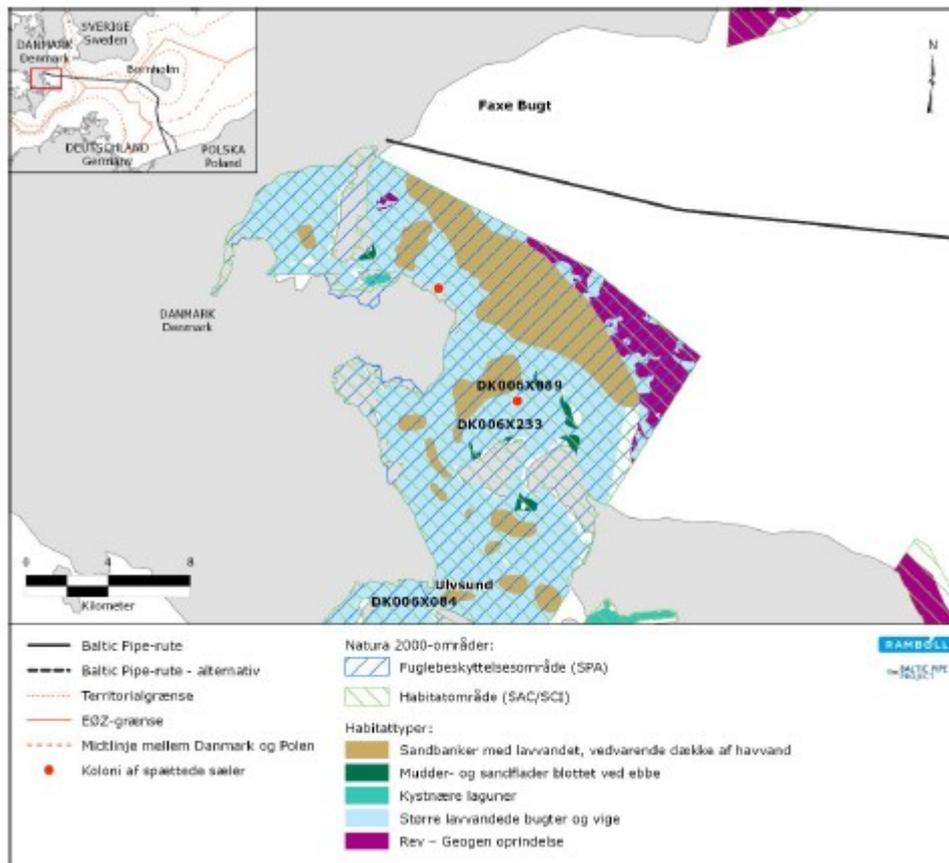


Figure 3 Natura 2000 area - The sea and coast between Præstø Fjord and Grønsund marked with designated habitats and indication of seal colonies in the area.

#### The Danish Energy Agency's assessment

Based on the "Baltic Pipe Environmental Impact Report-Baltic Sea-Denmark" and the materiality assessment presented here for the sea and the coast between Præstø Fjord and Grønsund (DK006X233, DK006X089 & DK006X084) Natura 2000 area. including sediment modelling results and due to the fact that no sheet piling has been used, the Danish Energy Agency does not believe that the project in the construction phase and the operational phase can be assumed to affect the designation basis for the nature conservation area at a distance of about 1 km from the Baltic Pipe survey corridor. The Danish Energy Agency therefore does not believe that an impact assessment must be prepared for the area, cf. § 4 (4) of the Offshore Impact Assessment Executive Order.

#### Adler Grund and Rønne Banke (DK00VA261)

The habitat area of Adler Grund and Rønne Bakke covers 31,900 ha, located exclusively at sea. The planned route for the Baltic Pipe pipeline is 3 km from the Natura 2000 area. The depth of the water in the area is between 12 m and 35 m. The designation base consists of reefs (406 ha) and sand banks, which are always



slightly covered by seawater (13,787 ha). 40% of the total area is covered by reefs. The proportion of rocky reefs decreases the deeper the water depth, and the reefs are covered by marine fauna, mainly blue mussels (*Mytilus* spp.). Since the water is so deep that light is limited, there is mostly no flora on the reef structures and it is absent from the sandbanks. In the Natura 2000 management plans for 2016-2021, there are no assessment systems for marine habitat types. But the overall goal is to ensure a good state of conservation. At present, there are no identified threats to the designated habitats.

As the pipeline route no longer crosses this area, significant impact due to the presence of the pipeline or destruction of habitats is unlikely. However, during the construction phase, the designated reef and sand banks at Adler Grund and Rønne Banke could potentially be affected where suspended sediment from construction activities, such as burying and pipe laying, could be spread into the Natura 2000 area and affect the fauna living on the reefs and sandbanks. An increase in suspended sediment will be limited to a defined area close to the construction work where the increase can be measured. Modelling results have shown only a very limited increase in suspended sediment due to burying activities. Any impact on the designated habitat types on Adler Grund and Rønne Banke is therefore unlikely.

#### The Danish Energy Agency's assessment

Based on the "Baltic Pipe Environmental Impact Report-Baltic Sea-Denmark" and the materiality assessment presented here for the Natura 2000 area Adler Grund and Rønne Banke (DK00VA261), including the sediment modelling results, the Danish Energy Agency does not find that the project in the construction phase and the operational phase can be assumed to affect the designation basis for the nature conservation area at a distance of about 3 km from the Baltic Pipe survey corridor. The Danish Energy Agency therefore does not believe that an impact assessment must be prepared for the area, cf. § 4 (4) of the Offshore Impact Assessment Executive Order.

#### Bakkebrædt and Bakkegrund (DK00VA310)

Bakbrede and Bakkegrund is a small habitat area (H212) of 300 ha (3 km<sup>2</sup>), which is designated on the basis of reefs (226 ha) and sandbanks, which are always slightly covered by seawater (6 ha). The water depth is between 5 and 20 m. The distance to the planned Baltic Pipe pipeline is approx. 1.1 km from the area. The reef structures are 100% covered with blue mussels (*Mytilus* spp.) together with species of red algae. The sandbanks are located at a water depth of 10 m. In the Natura 2000 management plans for 2016-2021, there are no marine habitat assessment systems. But the overall goal is to achieve a good state of conservation. At present, there are no identified threats to the designated habitats. Due to the distance from potential sediment dispersal and the distance from the construction activities to Bakkebrædt and Bakkegrund, it is not likely there will be any significant impact on this Natura 2000 area.

#### The Danish Energy Agency's assessment



Based on the "Baltic Pipe Environmental Impact Report-Baltic Sea-Denmark" and the materiality assessment presented here for the Natura 2000 area Bakkebrædt and Bakkegrund (DK00VA310), including the distance from potential sediment dispersal, the Danish Energy Agency does not find that the project in the construction phase and the operational phase must be assumed to impact the designation basis for the nature conservation area at a distance of about 1 km from the Baltic Pipe survey corridor. The Danish Energy Agency therefore does not believe that an impact assessment must be prepared for the area, cf. § 4 (4) of the Offshore Impact Assessment Executive Order.

#### Other Natura-2000 areas

The distance to the Swedish Natura 2000 area (Sydvästskaånes utjövatten) is more than 2 km from Danish construction activities. Combined with the limited duration and the increased amount of suspended sediment, sediment wastage during construction is not likely to have a significant impact on the Natura 2000 area, cf. "Baltic Pipe Offshore pipeline - Permit and Design, Espoo-Report-Denmark ". It is concluded that potential transboundary impact from the Baltic Pipe project, on its own or in combination with other projects and plans, will not have any significant impact on the Natura 2000 area Sydvästskaånes utjövatten.

The distance between construction work on the seabed in the Danish EEZ and the border with the German Natura 2000 area (Pommersche Bucht with Oderbank) and the Polish Natura 2000 areas (Ostoja na Zatoce Pomorskiej and Zatoka Pomorska) is more than 9 km. Against this background, it is estimated that the potential transboundary impact from the Baltic Pipe project, on its own or in combination with other projects and plans, will not have any significant impact on these Natura 2000 areas.

As there is no significant impact on any Danish Natura 2000 area or significant transboundary impact on more distant Natura 2000 sites, it is considered that there will be no impact on the adjoining Natura 2000 network.

#### **Annexe IV species**

Three species of marine mammals occur in the western Baltic: spotted seal (*Phoca vitulina*), grey seal (*Halichoerus grypus*) and porpoise (*Phocoena phocoena*). In addition, other marine mammals such as dolphins (for example, *Stenella coeruleoalba*), killer whales (*Orcinus orca*), Beluga whale (*Delphinapterus leucas*) and others are occasionally observed in the Baltic Sea, but these species are only rare visitors and are not discussed further in this section. The porpoise (*P. phocoena*) is the only Annexe IV species found in the Danish offshore section of the Baltic Sea. Assessments of the impact on Annexe IV species are made in terms of deliberate killing and ecological functionality in breeding and resting areas; therefore, breeding and rest areas are listed below. The westernmost part of the Danish section of the Baltic Sea is the area where porpoises are most likely to occur. No specific breeding areas for porpoises are known in the project area. Porpoises swim all the time



and have no special resting areas. Two populations of porpoises can be seen in the western Baltic Sea; the Bælthavs population, which is present in the Arkona Basin all year round, and the Baltic Sea population, which is present in the Arkona Basin during the winter period (November to April). The company states that the general plan is to use of marine mammal observers (MMOs), passive acoustic monitoring (PAM) and seal scarers as defence measures.

#### The Danish Energy Agency's assessment

On the basis of the assessment submitted and the proposed mitigation measures to minimise impacts on porpoises during the construction and operation phase, the Danish Energy Agency does not find that the project during the construction phase and the operational phase intentionally interferes with the animal species mentioned in Annexe IV (a) of the Habitats Directive in their natural habitat, especially during periods of animal breeding, caring for their young, wintering or migration, or damages or destroys breeding or resting areas in the natural habitat of the species referred to in Annexe IV (a) of the Habitats Directive, cf. § 8 (1) and (2) of the Off-shore Impact Assessment Executive Order.

The Danish Energy Agency has reviewed the environmental assessment section on marine mammals. It is the opinion of the Danish Energy Agency that the laying of rocks will not have a significant impact on porpoises in the proposed area of the Baltic Sea, if a look-out is kept for animals near the ship and pinging noises are used before the rocks are laid. The Danish Energy Agency requests that pinging noises be used instead of seal scarers as a defence measure, as seal scarers are considered to be too powerful. Further specification of pinging noises must be approved by the Danish Energy Agency, cf. condition 8.

Before laying rocks, a look-out from the ship should be kept for marine mammals and pining noises should be used to scare them away if necessary. Further specification of pinging noises must be approved by the Danish Energy Agency prior to the laying of stones, cf. condition 8.

#### **4.7.10. Cultural heritage**

The Agency for Culture and palaces is the national authority for cultural heritage, including marine archaeology. The Danish preliminary study area for the Baltic Pipe project is under the responsibility of the Viking Ship Museum in Roskilde (Viking Ship Museum in Roskilde).

In their response to the consultation, the Viking Ship Museum states that it has no comments on the details sent regarding ancient relics on the seabed in the Baltic Sea. The environmental impact report provides an excellent account of ongoing and necessary future marine archaeological initiatives prior to the construction work.

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The Viking Ship Museum also notes that the provisions of the Museum Act will apply to all activities under the project, so it is not a given that the studies carried out so far cover a sufficient area; for example, in the case of a pipe laying vessel requiring anchoring.

Furthermore, referring to the Museum Act, art. 29h(1), discoveries of relics or wrecks during construction work must be reported to Slots- og Kulturstyrelsen immediately, and the work must stop, cf. condition 15.

The Danish Energy Agency has no further comments regarding cultural heritage.



## **Annexe 1: Mailing list of key Danish authorities involved**

Energistyrelsen  
(Danish Energy Agency)  
Carsten Niebuhrs Gade 43  
1577 Copenhagen

Miljøstyrelsen  
(Danish Environmental Protection Agency)  
Tolderlundsvej 5  
5000 Odense C

Søfartsstyrelsen  
(Danish Maritime Authority)  
Casper Brandts Plads 9  
4220 Korsør

Forsvarskommandoen  
(Defence Command Denmark)  
Naval Command  
Herningvej 30  
7470 Karup J

Forsvarsministeriets Ejendomsstyrelse  
(Danish Ministry of Defence Estate Agency)  
Arsenalvej 55  
9800 Hjørring

Slots- og Kulturstyrelsen  
(Agency for Culture and Palaces)  
Center for kulturarv  
Fejøgade 1  
4800 Nykøbing Falster

Fiskeristyrelsen  
(The Danish Directorate of Fisheries)  
Nyropsgade 30  
1780 København V

Kystdirektoratet  
(The Danish Coastal Authority)  
Højbovej 1  
7620 Lemvig

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Arbejdstilsynet  
(Danish Working Environment Authority)  
Landskronagade 33  
2100 København Ø

Udenrigsministeriet  
(Ministry of Foreign Affairs of Denmark)  
Asiatisk Plads 2  
1448 Copenhagen

Geodatastyrelsen  
(Danish Geodata Agency)  
Lindholm Brygge 31  
9400 Nørresundby  
Denmark

**Annexe 2: Summary of national consultations**

**Annexe 3: Summary of international consultations (Espoo Convention)**



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