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Scope of the environmental assessment for the revision of the spatial plans for the German exclusive economic zone of the North Sea and Baltic Sea

- unofficial translation -

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Content

1	Introduction	1
1.1	Legal bases and tasks of the environmental assessment	1
1.2	Determination of the scope of the environmental assessment	2
1.3	Brief description of the content and main objectives of the spatial plan	2
2	Relationship to other relevant plans, programmes and projects	3
2.1	Spatial plans in bordering areas	3
2.1.1	Lower Saxony	3
2.1.2	Schleswig-Holstein	3
2.1.3	Mecklenburg-Western Pomerania	4
2.1.4	Netherlands	4
2.1.5	United Kingdom	4
2.1.6	Denmark	4
2.1.7	Sweden	4
2.1.8	Poland	4
2.2	MSFD programme of measures	5
2.3	Management plans for the North Sea EEZ nature reserves	5
2.4	Tiered planning procedure for offshore wind energy and power lines (Central Model)	5
2.4.1	Maritime spatial planning (EEZ)	7
2.4.2	Site development plan	8
2.4.3	Investigation of sites	9
2.4.4	Approval procedures (planning approval and planning permission procedures) for offshore wind turbines	9
2.4.5	Approval procedure for grid connections (converter platforms and submarine cable systems)	10
2.4.6	Cross-border cables	11
2.5	Pipelines and data cables	15
2.6	Ressource extraction	16
2.7	Shipping	17
2.8	Fisheries and aquaculture	17

2.9	Military	17
2.10	Tourism	17
3	Presentation and consideration of the objectives of environmental protection	18
3.1	International conventions on marine environmental protection	18
3.1.1	Globally applicable conventions that serve the protection of the marine environment in whole or in part	18
3.1.2	Regional agreements on marine environmental protection	18
3.1.3	Agreements specific to protected goods	18
3.2	Environmental and nature conservation requirements at EU level	19
3.3	Environmental and nature conservation requirements at national level	20
4	Process and approach	21
4.1	Integration of the SEA into the planning process	21
4.2	Tiered assessment of alternatives	21
5	Methodology of the Strategic Environmental Assessment	24
5.1	Spatial extent of the environmental assessment	25
5.2	Implementation of the environmental assessment	26
5.3	Implementation of the ecosystem-based approach	29
5.4	Criteria for the description and assessment of the status	31
5.5	Assumptions used to describe and assess the likely significant impacts	35
5.5.1	Cumulative assessment	38
5.5.2	Interactions	39
5.5.3	Specific assumptions for the assessment of likely significant environmental impacts	39
6	Data	41
6.1	Data Overview	41
6.2	Indications of difficulties in compiling the documentation	42
7	Description of the individual assessment steps in the environmental report	43
7.1	Description and assessment of the state of the environment	43
7.2	Expected development in the event of non-implementation of the plan	44

7.3	Description and assessment of the likely significant impacts of the implementation of the plan on the marine environment	44
7.4	Species protection assessment	44
7.5	Appropriate assessment	45
7.6	Measures envisaged to prevent, reduce and offset any significant adverse effects of the site development plan on the environment	45
7.7	Measures planned to monitor the environmental impact of implementing the spatial plan	46
8	References	47
9	Annex	48

List of figures

Figure 1: Overview of the tiered planning and approval procedure in the EEZ.	6
Figure 2: Overview of the objects of protection in the environmental assessments.	7
Figure 3: Overview of key aspects of environmental assessments in planning and approval procedures.....	14
Figure 4: Overview of the focal points of environmental assessment for pipelines and data cables.	16
Figure 5: Overview of the levels of the relevant legal acts for the SEA.	20
Figure 6: Overview of the planning and participation process.....	21
Figure 7: Tiered procedure in the assessment of alternatives.	23
Figure 8: Boundary of the spatial extent of the environmental assessment for the SEA (Environmental Report MSP EEZ North Sea).....	25
Figure 9: Boundary of the spatial extent of the environmental assessment for the SEA (Environmental Report MSP EEZ Baltic Sea).....	26
Figure 10: General methodology for the assessment of likely significant environmental impacts. .	29
Figure 11: The directive on maritime spatial planning in relation to the MSFD and further relevant directives (amended after (Altwater, S.; Lukic, I.; Eilers, S., 2019).	30
Figure 12: The ecosystem-based approach as a structuring concept.....	31
Figure 13: Exemplary cumulative impact of similar uses.	38
Figure 14: Exemplary cumulative impact of different uses.....	38
Figure 15: Exemplary cumulative impact of different uses with different impacts.	38
Figure 16: Components of the environmental report.	43

List of tables

Table 1: Overview of the likely significant impacts of the uses specified in the spatial plan.	36
Table 2: Parameters for the consideration of areas for offshore wind energy.	39
Table 3: Parameters for the consideration of grid connections.	40

List of abbreviations

TFEU	Treaty on the Functioning of the European Union
ASCOBANS	Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas
EEZ	Exclusive Economic Zone
BBergG	Federal Mining Act
BfN	Federal Agency for Nature Conservation
BGBl	Federal Law Gazette
BMI	Federal Ministry of the Interior, for Building and Community
BMUB	Federal Ministry for the Environment, Nature Conservation, Construction and Reactor Safety
BNatSchG	Act on nature conservation and landscape management (Federal Nature Conservation Act)
BNetzA	Bundesnetzagentur (Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway)
BSH	Federal Maritime and Hydrographic Agency
CMS	Convention on the Conservation of Migratory Species of Wild Animals
EEG	Law for the expansion of renewable energies (Renewable Energy Act)
EUROBATS	Agreement on the Conservation of Populations of European Bats
R&D	Research and development
FEP	Site Development Plan
FFH	Flora Fauna Habitat
GW	Gigawatt
HELCOM	Helsinki Commission
MARPOL	International Convention for the Prevention of Marine Pollution from Ships
MSP	Maritime spatial plan
MSFD	Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a Framework for Community Action in the field of Marine Environmental Policy (Marine Strategy Framework Directive)
NSG	Nature protection area
OSPAR	Oslo-Paris Convention (Convention for the Protection of the Marine Environment of the North-East Atlantic)
ROG	Federal Spatial Planning Act
ROP	Spatial plan
SPEC	Species of European Conservation Concern (Important species for bird conservation in Europe)
StUK4	Standard Investigation of the impacts of offshore wind turbines on the marine environment
SEA	Strategic environmental assessment
SEAD	Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (SEA Directive)
UBA	Federal Environment Agency
UVPG	Environmental Impact Assessment Act
EIA	Environmental Impact Assessment
UVS	Environmental impact study
WTG	Wind turbine
WindSeaG	Act on the Development and Promotion of Offshore Wind Energy (Offshore Wind Energy Act)

1 Introduction

1.1 Legal bases and tasks of the environmental assessment

Under the Spatial Planning Act, the Federal Government is responsible for maritime spatial planning in the EEZ. Pursuant to § 17(1) ROG, the competent federal ministry, in agreement with the federal ministries concerned, draws up a spatial plan for the German exclusive economic zone as a ordinance. Pursuant to § 17 (1) sentence 3 ROG, the BSH carries out the preparatory procedural steps for drawing up the spatial plan with the consent of the ministry. When drawing up the MSP, an environmental assessment is carried out in accordance with the Federal Spatial Planning Act and the Environmental Impact Assessment Act (UVPG)¹, the so-called strategic environmental assessment (SEA).

The obligation to carry out a strategic environmental assessment with the preparation of an environmental report results from § 7 (7), 8 ROG in conjunction with § 35 (1) (1) UVPG in conjunction with No 1.6 of Appendix 5.

According to § 1 of the SEA Directive 2001/42/EC, the objective of the strategic environmental assessment is to ensure a high level of environmental protection in order to promote sustainable development and to contribute to ensuring that environmental considerations are adequately taken into account during the preparation and adoption of plans well in advance of the actual project planning. According to § 8 ROG, the strategic environmental assessment has the task of determining the likely significant effects of the implementation of the plan and of describing and evaluating them at an early stage in an environmental report. It serves to ensure effective environmental protection in accordance with the applicable laws and is implemented according to uniform principles and with public participation. All protection objectives under § 8 (1) ROG are to be considered:

- humans, including human health,
- animals, plants and biodiversity,
- Area, soil, water, air, climate and landscape,
- cultural goods and other tangible assets and
- the interactions between the aforementioned protection objectives.

In the context of spatial planning, definitions are mainly made in the form of priority and reservation areas as well as textual objectives and principles.

An environmental report must be prepared as part of the strategic environmental assessment. The requirements and content of the environmental report are regulated in Annex 1 to section 8 (1) ROG.

Accordingly, the environmental report consists of an introduction, a description and assessment of the environmental impacts determined in the environmental assessment pursuant to § 8 (1) ROG and additional information.

In this context, other planning options that may be considered should also be mentioned expressly.

¹ In the version published on 24 February 2010, Federal Law Gazette I p. 94, last amended by Article 2 of the Act of 30 November 2016 (Federal Law Gazette I p. 2749).

1.2 Determination of the scope of the environmental assessment

At the beginning of the strategic environmental assessment, the scope of the environmental assessment, including the required scope and level of detail of the information to be included in the environmental report, is defined (cf. § 8 1 (2) ROG). Public bodies whose environmental and health-related responsibilities may be affected by the environmental impact of the spatial plan must be involved in this process.

The scope of the environmental assessment shall be determined taking into account § 1 (4) UVPG and § 33 UVPG in conjunction with the legal provisions governing the decision on the preparation, adoption or amendment of the plan.

Pursuant to § 8 1 sentence 3 ROG, the environmental assessment refers to what can reasonably be required according to the current state of knowledge and generally accepted assessment methods as well as the content and level of detail of the spatial plan.

The present draft scope of the environmental assessment applies equally to the environmental reports for the North Sea and Baltic Sea EEZs. For the first draft plan, two environmental reports will be prepared separately for the North Sea and the Baltic Sea. The scope of the environmental assessment will be set out in two separate documents for the North Sea EEZ and the Baltic Sea EEZ respectively, following the scoping hearing.

1.3 Brief description of the content and main objectives of the spatial plan

According to § 17 1 ROG, taking into account possible interactions between land and sea and safety aspects, the spatial plan for the German EEZ should specify designations

1. to ensure the safety and ease of navigation
2. on other economic uses,
3. on scientific uses and
4. to protect and improve the marine environment.

Pursuant to § 7 (1) ROG, spatial plans for a certain planning area and a regular medium-term period must contain designations as **objectives and principles** of spatial planning for the development, organisation and safeguarding of the area, in particular the uses and functions of the area.

Pursuant to § 7 (3) ROG, these designations may also designate areas. For the EEZ, these may be the following areas:

Priority areas, which are intended for certain spatially significant functions or uses and exclude other spatially significant functions or uses in the area to the extent that these are incompatible with the priority functions or uses.

Reservation areas which are to be reserved for certain spatially significant functions or uses, to which particular weight is to be assigned when weighing up against competing spatially significant functions or uses.

Suitable areas for the marine area, in which certain spatially significant functions or uses do not conflict with other spatially significant interests, whereby these functions or uses are excluded elsewhere in the planning area.

In the case of priority areas, it can be determined that they also have the effect of suitable areas pursuant to § 7 (3) sentence 2 no. 4 ROG.

According to § 7 (4) ROG, the spatial plans should also contain those provisions on spatially significant planning and measures of public bodies and persons under private law according to § 4 (1) sentence 2 ROG which are suitable for inclusion in spatial plans and which are necessary for the coordination of spatial claims and which can be secured by objectives or principles of spatial planning.

2 Relationship to other relevant plans, programmes and projects

In Germany there is a tiered planning system of spatial planning by the Federal Spatial Planning Act as well as by the state and regional planning authorities to coordinate all spatial requirements and concerns arising in an area. According to § 1 (1) sentence 2 ROG, this system coordinates different requirements for the area in order to balance out conflicts arising at the respective planning level and to make provisions for individual uses and functions of the area.

The staged system allows the planning to be further specified by the subsequent planning levels. Pursuant to § 1 (3) ROG, the development, order and safeguarding of the subspaces should be integrated into the conditions and requirements of the overall space, and the development, order and safeguarding of the overall space should take into account the conditions and requirements of its subspaces.

The Federal Ministry of the Interior, Building and Community (BMI) is responsible for spatial planning at federal level in the EEZ. On the other hand, the respective federal state is responsible for state planning for the entire area of the state including the respective territorial waters.

In addition to spatial planning for the respective areas of responsibility, there are also sectoral plans based on sectoral laws for certain specific planning areas. Sectoral plans serve to define details for the respective sector, taking into account the requirements of spatial planning.

2.1 Spatial plans in bordering areas

In the interests of coherent planning, coordination processes with the plans of the coastal federal states and the neighbouring states are advisable and should be taken into account in the cumulative assessment of impacts on the marine environment. Currently, the state spatial planning for both Lower Saxony and Schleswig-Holstein is being updated.

2.1.1 Lower Saxony

The spatial plan for the State of Lower Saxony including the Lower Saxony territorial waters is the State Spatial Planning Programme (LROP). The Lower Saxony Ministry of Food, Agriculture and Consumer Protection, as the highest state planning authority, is responsible for its preparation and amendment; the final decision on the LROP is the responsibility of the state government. The LROP is based on an ordinance from 1994 and has been updated several times since then, most recently in 2017, with the procedure for a new update initiated at the end of 2019.

2.1.2 Schleswig-Holstein

In Schleswig-Holstein, the State Development Plan (LEP S-H) is the basis for the state's spatial development. The Schleswig-Holstein Ministry of the Interior, Rural Areas and Integration is responsible for its preparation and amendment. The current LEP S-H 2010 is the basis for the

spatial development of the federal state until 2025 The federal state of Schleswig-Holstein has initiated the procedure for an revision of the LEP S-H 2010 and carried out a participation procedure until 31 May 2019.

2.1.3 Mecklenburg-Western Pomerania

For the state of Mecklenburg-Western Pomerania, the highest state planning authority is the Ministry of Energy, Infrastructure and Digitisation Mecklenburg-Western Pomerania. It is responsible for spatial planning at the state level including the territorial waters.

The current State Spatial Development Programme of Mecklenburg-Western Pomerania (LEP M-V) came into force on 9 June 2016.

2.1.4 Netherlands

The Netherlands is in the fourth revision cycle and is currently preparing the planning phase. The plan is binding and covers one planning area.

2.1.5 United Kingdom

England consists of eleven planning areas and each area is to receive its own plan. These should be designed for a long-term period of about 20 years and revised every three years. It is envisaged that all plans will be in place by 2021.

The Scottish Plan is currently being revised and is in its second cycle. The consultation on the revision of the first plan has now been completed. Scotland has a national maritime spatial plan and eleven regional planning areas. The spatial plans are also binding there.

2.1.6 Denmark

Denmark is at a very early stage of the spatial planning process. Denmark is currently drafting its first spatial plan as an overall plan for the North and Baltic Seas, which will be binding and cover a time frame up to 2050.

2.1.7 Sweden

Sweden is in the final phase of its first spatial plan. This plan is divided into three planning areas and describes two different levels, the national level and the level of the municipalities. The Swedish plans are more of a management character and are not binding.

2.1.8 Poland

In Poland, the first spatial plan is currently being drawn up and is also in the final phase. The Polish plan covers one planning area with three regions. The planning horizon of the binding plan is 2030.

2.2 MSFD programme of measures

Each Member State must develop a marine strategy to achieve good status for its marine waters, in Germany for the North Sea and the Baltic Sea. In this context, the establishment of a programme of measures to achieve or maintain good environmental status and the practical implementation of this programme of measures is essential. The establishment of the programme of measures (BMUB, 2016) is regulated in Germany by § 45h of the Federal Water Act (WHG). Under Objective 2.4 "Oceans with sustainable and sparingly used resources", the current MSFD Programme of Measures mentions maritime spatial planning as a contribution of existing measures to achieving the operational objectives of the MSFD. In addition, the catalogue of measures also formulates a concrete audit mandate for the updating of spatial plans with regard to measures for the protection of migratory species in the marine area. Both the environmental objectives of the MSFD and the MSFD programme of measures are taken into account in the SEA.

2.3 Management plans for the North Sea EEZ nature reserves

On 17 November 2017, the Federal Agency for Nature Conservation (BfN) initiated the participation procedure pursuant to § 7 (3) NSGBRgV, § 7 (3) NSGDgbV and § 9 (3) NSGSyIV on the management plans for the nature conservation areas in the German North Sea EEZ. All three management plans are still being coordinated. The plans and the management measures contained therein will be taken into account as soon as they are published.

2.4 Tiered planning procedure for offshore wind energy and power lines (Central Model)

For some uses in the German EEZ, such as offshore wind energy and power cables, a multi-stage planning and approval process - i.e. a subdivision into several stages - is planned. The instrument of maritime spatial planning is at the highest and overarching level in this context. The spatial plan is the forward-looking planning instrument that coordinates the most diverse interests of users in the fields of economy, science and research as well as protection claims. A strategic environmental assessment must be carried out when the spatial plan is drawn up. The SEA on the MSP is related to various subsequent environmental assessments, in particular the directly subsequent SEA of the site development plan (FEP).

The FEP is on the next level. Within the framework of the so-called central model, the FEP is the control instrument for the orderly expansion of offshore wind energy and grid connection in a tiered planning process. The FEP has the character of a sectoral plan. The sectoral plan is designed to plan the use of offshore wind energy and the grid connection in a targeted manner and as optimally as possible under the given framework conditions - in particular the requirements of spatial planning - by designating areas and sites as well as locations, routes and route corridors for grid connections or for cross-border submarine cabling systems. A Strategic Environmental Assessment will be carried out to accompany the establishment of the FEP.

In the next step, the sites for offshore wind turbines defined in the FEP will be pre-examined. If the requirements of § 12 (2) WindSeeG are met, the preliminary investigation shall be followed by a determination of the suitability of the site for the construction and operation of offshore wind turbines. A Strategic Environmental Assessment is also carried out to accompany the preliminary investigation.

If the suitability of a site for the use of wind energy at sea is established, the area is put out to tender and the winning bidder or the correspondingly entitled party can submit an application for

approval (planning approval or planning permission) for the construction and operation of wind turbines on the site. As part of the planning approval procedure, an environmental impact assessment will be carried out if the conditions are met.

While the sites defined in the FEP for the use of offshore wind energy are pre-examined and put out to tender, this is not the case for defined locations, routes and route corridors for grid connections or cross-border cables. Upon application, a planning approval procedure including environmental assessment is usually carried out for the construction and operation of grid connections. The same applies to cross-border submarine cabling systems.

Under § 1(4) of the UVPG, the UVPG also applies where federal or state legislation does not specify the environmental impact assessment or does not comply with the essential requirements of the UVPG.



Figure 1: Overview of the tiered planning and approval procedure in the EEZ.

In the case of tiered planning and approval processes, it follows from the relevant sectoral legislation (such as the Federal Spatial Planning Act, WindSeeG and BBergG) or, more generally, from § 39 (3) UVPG that, in the case of plans, it should already be determined at the time of defining the scope of the environmental assessment at which of the stages of the process certain environmental impacts are to be examined in particular. In this way, multiple tests should be avoided. The nature and extent of the environmental effects, technical requirements, and the content and subject matter of the plan must be taken into account.

In the case of subsequent plans and subsequent approvals of projects for which the plan sets a framework, the environmental assessment pursuant to § 39 3 sentence 3 UVPG shall be limited to additional or other significant environmental effects and to any necessary updates and further elaborations.

Within the framework of the tiered planning and approval procedure, all examinations have in common that environmental impacts on the objects of protection listed in § 2 (1) UVGP are considered, including their interactions.

According to the definition in § 2 (2) of the UVPG, environmental impacts within the meaning of the UVPG are direct and indirect effects of a project or the implementation of a plan or programme on the objects of protection.

According to § 3 UVPG, environmental assessments comprise the identification, description and evaluation of the significant impacts of a project or a plan or programme on the objects of protection. They serve to ensure effective environmental protection in accordance with the applicable laws and are implemented according to uniform principles and with public participation.

Offshore, the special protected assets avifauna have become established as subset of the legally named protected assets animals, plants and biodiversity: sea/resting birds and migratory birds, benthos, biotope types, plankton, marine mammals, fish and bats.



Figure 2: Overview of the objects of protection in the environmental assessments.

In detail, the tiered planning process presents as follows:

2.4.1 Maritime spatial planning (EEZ)

At the highest and superordinate tier is the instrument of maritime spatial planning. For sustainable spatial development in the EEZ, the BSH prepares spatial plans on behalf of the responsible Federal Ministry, which come into force in the form of ordinance.

The spatial plans should **define** the following, taking into account any interactions between land and sea and safety aspects

- to ensure the safety and ease of navigation,
- on further economic uses,
- on scientific uses and

- to protect and improve the marine environment.

In the context of spatial planning, definitions are mainly made in the form of priority and reservation areas as well as textual objectives and principles. Pursuant to § 8 1 ROG, when drawing up spatial plans, the body responsible for the spatial plan must carry out a strategic environmental assessment in which the likely significant effects of the respective spatial plan on the objects to be protected, including interactions, must be identified, described and evaluated.

The **aim of** the instrument of spatial planning is to optimise overall planning solutions. A wider range of uses is considered. At the beginning of a planning process, fundamental strategic questions should be clarified. Thus, the instrument primarily functions as a controlling planning instrument of the planning administrative bodies in order to create a spatially and environmentally compatible framework for all uses.

In spatial planning, the **depth of examination** is generally characterised by a greater breadth of examination, i.e. a fundamentally greater number of planning options, and a lesser depth of examination in the sense of detailed analyses. In particular, regional, national and global impacts as well as secondary, cumulative and synergistic effects are taken into account.

The **focus** is therefore on possible cumulative effects, strategic and large-scale planning options and possible transboundary impacts.

2.4.2 Site development plan

The FEP is on the next tier.

The **specifications** to be made by the FEP and to be examined within the scope of the SEA result from § 5 1 WindSeeG. The plan mainly specifies areas and sites for wind turbines and the expected output to be installed on these sites. In addition, the FEP makes specifications on routes, route corridors and locations. Planning and technical principles are also laid down. Although these serve, among other things, to reduce environmental impacts, they may in turn lead to impacts, so that an assessment is required as part of the SEA.

With regard to the FEP's **objectives**, it deals with the fundamental questions of the use of offshore wind energy and grid connections on the basis of the legal requirements, especially with regard to the need, the purpose, the technology and the finding of locations and routes or route corridors. The plan therefore primarily has the function of a steering planning instrument in order to create a spatially and environmentally compatible framework for the realisation of individual projects, i.e. the construction and operation of offshore wind turbines, their grid connections, cross-border submarine cables and interconnections between them.

The **depth of the assessment** of likely significant environmental effects is characterised by a wider range of assessment, i.e. a greater number of alternatives and, in principle, a lower depth of investigation. In principle, no detailed analyses are yet carried out at the level of sectoral planning. In particular, local, national and global impacts as well as secondary, cumulative and synergetic impacts in the sense of an overall view are taken into account.

As with the instrument of maritime spatial planning, the **focus of the** assessment is on possible cumulative effects as well as possible cross-border effects. In addition, the FEP focuses on strategic, technical and spatial alternatives especially for the use of wind energy and grid connections.

2.4.3 Investigation of sites

The next step in the tiered planning process is the investigation of sites for offshore wind turbines. On behalf of the BNetzA and in accordance with the administrative agreement of March 2017, the BSH is investigating sites defined by the FEP in the range of the EEZ.

The investigation of sites defined in the FEP is carried out with the **aim of** preparing for the invitations to tender issued by the BNetzA under §§ 16ff. WindSeeG to provide bidders with the information that enables the market premium to be determined on a competitive basis in accordance with § 22 EEG. The suitability of the area is determined and individual objects of investigation are examined in advance in order to accelerate the subsequent planning approval procedure on these sites. In addition, the expected generation capacity is determined on the sites in question.

With regard to environmental concerns, pursuant to section 10 subsection (1), first sentence, No. 1 WindSeeG, the investigations of the marine environment required for an environmental impact study (EIS) in the planning approval procedure pursuant to section 45 WindSeeG following the invitation to tender for the construction of offshore wind turbines on this site shall be carried out and documented and may be carried out irrespective of the subsequent design of the project. The aim of the investigations of sites is in particular to describe and assess the environment and its components by

- a stock characterisation
- the description of existing prior pressures, and
- a stock valuation.

The investigation of sites is thus the instrument connected between the FEP and the individual approval procedure for offshore wind turbines. It refers to a specific site identified in the FEP and is therefore much smaller than the FEP. Compared to the individual approval procedure on the other hand, it is distinguished by the fact that a test approach that is independent of plant type and layout must be applied.

Compared to the FEP, the **depth of** the SEA for the proficiency test is thus characterised by a smaller area of investigation and a greater investigation depth. In principle, fewer and spatially more limited alternatives are seriously considered. The two primary alternatives are the determination of the suitability of a site on the one hand and the determination of its unsuitability (see § 12 (6) WindSeeG) on the other hand. However, the determination of suitability may also include specifications for the later project, in particular regarding the type and extent of the development of the site and its location, if the construction and operation of offshore wind energy turbines would otherwise be likely to impair the criteria according to § 10 (2) WindSeeG.

The **focus of** the environmental assessment is on the consideration of local impacts in relation to the site and its location.

2.4.4 Approval procedures (planning approval and planning permission procedures) for offshore wind turbines

The next stage after the investigation of sites is the approval procedure for the construction and operation of offshore wind turbines. After the BNetzA has put the pre-examined site out to tender, the winning bidder can, with the acceptance of the bid by the BNetzA, submit an application for planning approval or - if the prerequisites are met - for planning permission for the construction and operation of offshore wind turbines including the necessary ancillary facilities on the pre-examined site in accordance with § 46 (1) WindSeeG.

In addition to the legal requirements of § 73 (1) S. 2 VwVfG, the plan must include the information contained in § 47 (1) WindSeeG. The plan may only be established under certain conditions listed in § 48 (4) WindSeeG and, among other things, only if the marine environment is not endangered, in particular if pollution of the marine environment within the meaning of Article 1 (1) no. 4 of the Convention on the Law of the Sea is not to be feared and the migration of birds is not endangered.

Under § 24 UVPG, the competent authority shall prepare a summary

- the environmental impact of the project,
- the characteristics of the project and of the location, which are intended to prevent, reduce or offset significant adverse environmental effects,
- measures to prevent, reduce or offset significant negative environmental impacts, and
- the compensation measures in the event of interference in nature and seascape.

Under Article 16(1) of the Environmental Impact Assessment Act (UVPG), the project developer must submit a report to the competent authority on the likely environmental effects of the project (EIA report), containing at least the following information:

- a description of the project, including information on the location, nature, scale and design, size and other essential characteristics of the project,
- a description of the environment and its components within the project's sphere of influence,
- a description of the characteristics of the project and of the location of the project which are intended to prevent, reduce or offset the occurrence of significant adverse environmental effects of the project,
- a description of the measures planned to prevent, reduce or offset any significant adverse environmental effects of the project and a description of planned compensation measures,
- a description of the expected significant environmental effects of the project,
- a description of the reasonable alternatives, relevant to the project and its specific characteristics, that have been considered by the developer and the main reasons for the choice made, taking into account the relevant environmental effects, and
- a generally understandable, non-technical summary of the EIA report.

Pilot wind turbines are only dealt with within the framework of the environmental assessment in the approval procedure and not already at upstream stages.

2.4.5 Approval procedure for grid connections (converter platforms and submarine cable systems)

In the staged planning process, the establishment and operation of grid connections for offshore wind turbines (converter platform and submarine cable systems, if applicable) is examined at the level of the approval procedures (planning approval and planning permission procedures) in implementation of the spatial planning requirements and the specifications of the FEP at the request of the respective project developer - the responsible transmission system operator (TSO).

Pursuant to § 44 (1) in conjunction Pursuant to § 45 (1) WindSeeG, the construction and operation of facilities for the transmission of electricity shall require planning approval. In addition to the legal requirements of § 73 (1) Sentence 2 VwVfG, the plan must include the information contained in § 47 (1) WindSeeG. The plan may only be established under certain conditions listed in § 48 (4) WindSeeG and, among other things, only if the marine environment is not endangered, in

particular if pollution of the marine environment within the meaning of Article 1 (1) no. 4 of the Convention on the Law of the Sea is not to be feared and the migration of birds is not endangered.

In addition, pursuant to Article 1(4) UVPG, the requirements for the environmental impact assessment of offshore wind turbines, including ancillary installations, shall apply *mutatis mutandis* to the performance of the environmental assessment.

2.4.6 Cross-border cables

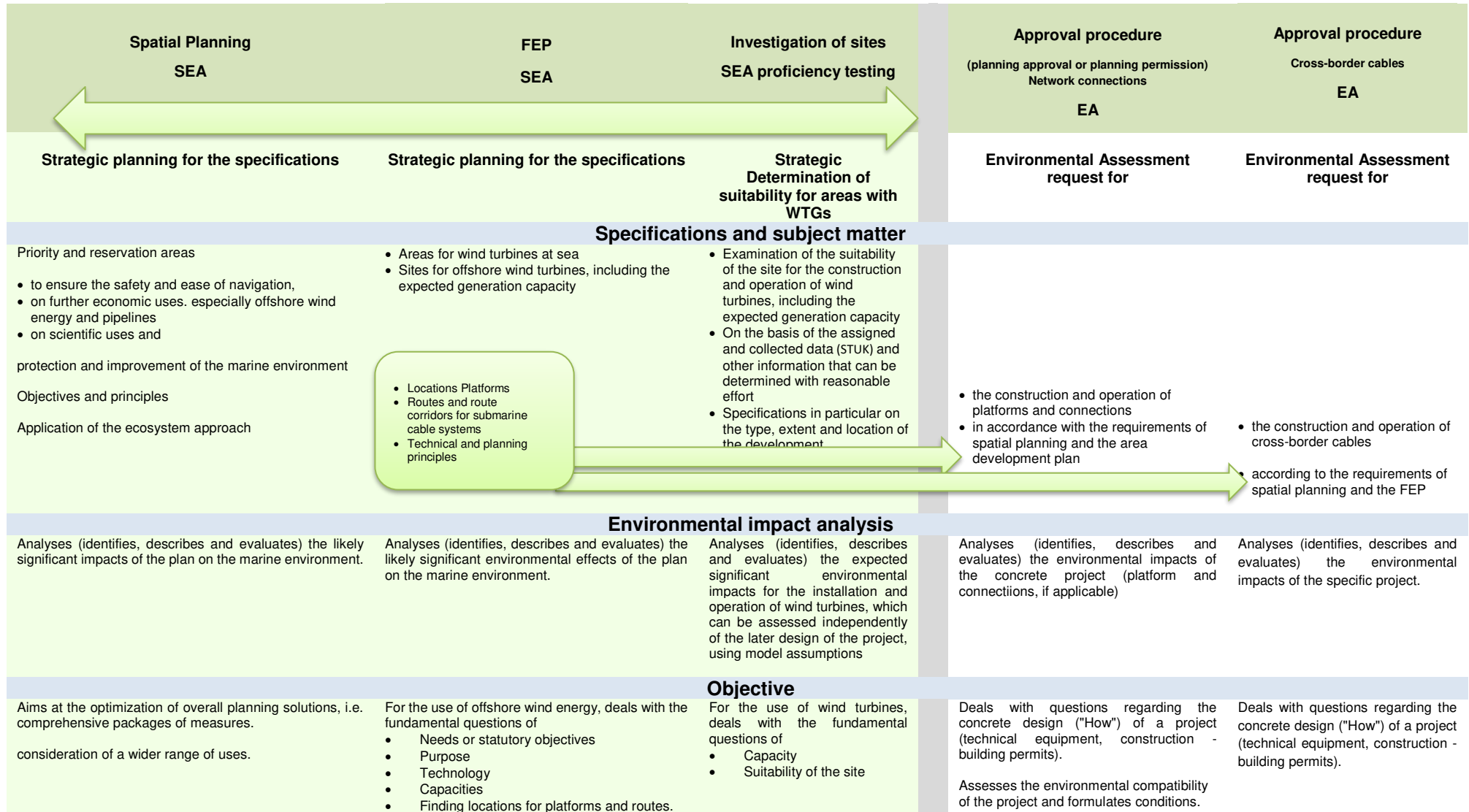
Pursuant to § 133 (1) in conjunction with § 4 BBergG, the construction and operation of an underwater cable in or on the continental shelf requires a permit

- from a mining point of view (by the competent state mining authority) and
- with regard to the organisation of the use and exploitation of the waters above the continental shelf and the airspace above these waters (by the BSH).

Pursuant to § 133 (2) BBergG, the above-mentioned permits may only be refused if there is a risk to the life or health of persons or property or an impairment of overriding public interests which cannot be prevented or compensated for by a time limit, conditions or requirements. An impairment of overriding public interests exists in particular in the cases mentioned in § 132 (2) no. 3 BBergG. Pursuant to § 132 (2) no. 3 b) and d) BBergG, an impairment of overriding public interests with regard to the marine environment exists in particular if the flora and fauna would be impaired in an unacceptable manner or if a pollution of the sea is to be expected.

According to § 1 (4) UVPG, the essential requirements of the UVPG must be observed for the construction and operation of cross-border cables.

Tabular overview of environmental assessments: Focus of the assessments



Starts at the beginning of the planning process to clarify fundamental strategic issues, i.e. at an early stage when there is even greater scope for action.	Searches for environmentally sound packages of measures without assessing the environmental compatibility of the planning in absolute terms.	Provides the information on the site required by law for the submission of tenders.	Assesses the environmental compatibility of the project and formulates to these requirements.
Essentially functions as a controlling planning instrument of the planning administrative bodies to create an environmentally compatible framework for all uses.	Acts mainly as a steering planning instrument to create an environmentally sound framework for the implementation of individual projects (WTGs and grid connections, cross-border cables)	Searches for environmentally sound packages of measures without assessing the environmental compatibility of the specific project. Acts as an instrument between the FEP and the approval procedure for wind turbines on a specific site.	Serves primarily as a passive testing instrument that responds upon request of the project sponsor.

Exam depth

Characterized by a greater breadth of investigation, i.e. a greater number of alternatives, and a lower depth of investigation (no detailed analyses)	Characterized by a greater breadth of investigation, i.e. a greater number of alternatives, and lesser depth of investigation (no detailed analyses)	Characterized by a smaller examination area, greater examination depth (detailed analyses).	Characterised by a smaller scope of investigation (limited number of alternatives) and greater depth of investigation (detailed analyses).
Takes into account spatial, national and global impacts as well as secondary, cumulative and synergetic impacts in the sense of an overall view.	Takes into account local, national and global impacts as well as secondary, cumulative and synergistic impacts in the sense of an overall view.	The determination of suitability can include specifications for the later project, in particular regarding the type and extent of the development of the area and its location.	Assesses the environmental compatibility of the project and formulates conditions. Considers primarily local impacts in the vicinity of the project.

Focus of the audit

Cumulative effects Overall plan consideration Strategic and large-scale alternatives Possible transboundary effects	Cumulative effects Overall plan consideration Strategic, technical and spatial alternatives Possible transboundary effects	Local effects related to the site and its location.	Plant, construction and operational environmental impacts Plant decommissioning Examination related to the concrete plant design. Intervention, compensation and replacement measures.	Plant, construction and operational environmental impacts Examination related to the concrete plant design. Intervention, compensation and replacement measures.
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Approval procedure (plan approval or plan permission) for WTGs

EIA

Examination subject

Environmental impact assessment on request for

- the construction and operation of wind turbines
- on the site defined and pre-examined in the FEP
- According to the FEP's specifications and the specifications of the investigation of sites.

Environmental impact assessment

Analyses (identifies, describes and evaluates) the environmental impact of the concrete project (wind turbines, platforms and internal cabling of the wind farm, if applicable)

Under Article 24 UVPG, the competent authority shall prepare a summary

- the environmental impact of the project,
- the characteristics of the project and of the site, which are intended to prevent, reduce or offset **significant adverse environmental effects**,
- measures to prevent, reduce or offset significant negative environmental impacts, and
- the compensation measures in the case of interference in nature and seascape (note: exception under Article 56 para. 3 BNatSchG)

Objective

Deals with the questions of the concrete design ("how") of a project (technical equipment, construction).

Serves primarily as a passive verification instrument, responding to the request of the tender winner/project sponsor.

Exam depth

Characterised by a smaller scope of investigation, i.e. a limited number of alternatives, and greater depth of investigation (detailed analyses).

Assesses the environmental compatibility of the project on the site under investigation and formulates conditions for this.

Considers mainly local impacts in the vicinity of the project.

Focus of the audit

The focus of the audit:

- Construction and operational environmental impacts.
- Examination related to the concrete plant design.
- Plant decommissioning.

Figure 3: Overview of key aspects of environmental assessments in planning and approval procedures.

2.5 Pipelines and data cables

On the upper level is the instrument of spatial planning. Within this framework, areas or corridors for pipelines and data cables are defined.

Pursuant to § 8 1 ROG, the likely significant effects of the designation on pipelines on the objects of protection must be identified, described and evaluated.

Pursuant to § 133 (1) in conjunction with § 4 BBergG, the construction and operation of a transit pipeline or a submarine cable (data cable) in or on the continental shelf requires a permit

- from a mining point of view (by the competent state mining authority) and
- with regard to the organisation of the use and exploitation of the waters above the continental shelf and the airspace above these waters (by the BSH).

Pursuant to § 133 (2) BBergG, the above-mentioned permits may only be refused if there is a risk to the life or health of persons or property or an impairment of overriding public interests which cannot be prevented or compensated for by a time limit, conditions or requirements. An impairment of overriding public interests exists in particular in the cases mentioned in § 132 (2) no. 3 BBergG. Pursuant to § 132 (2) no. 3 b) and d) BBergG, an impairment of overriding public interests with regard to the marine environment exists in particular if the flora and fauna would be impaired in an unacceptable manner or if a pollution of the sea is to be expected.

According to § 133(2a) BBergG, the construction and operation of a transit pipeline, which is at the same time a project within the meaning of § 1 (1) (1) UVPG, is subject to an environmental impact assessment in the approval procedure with regard to the organisation of the use and exploitation of the waters above the continental shelf and the airspace above these waters in accordance with the UVPG.

According to § 1(4) of the UVPG, the essential requirements of the UVPG must be observed for the construction and operation of data cables.

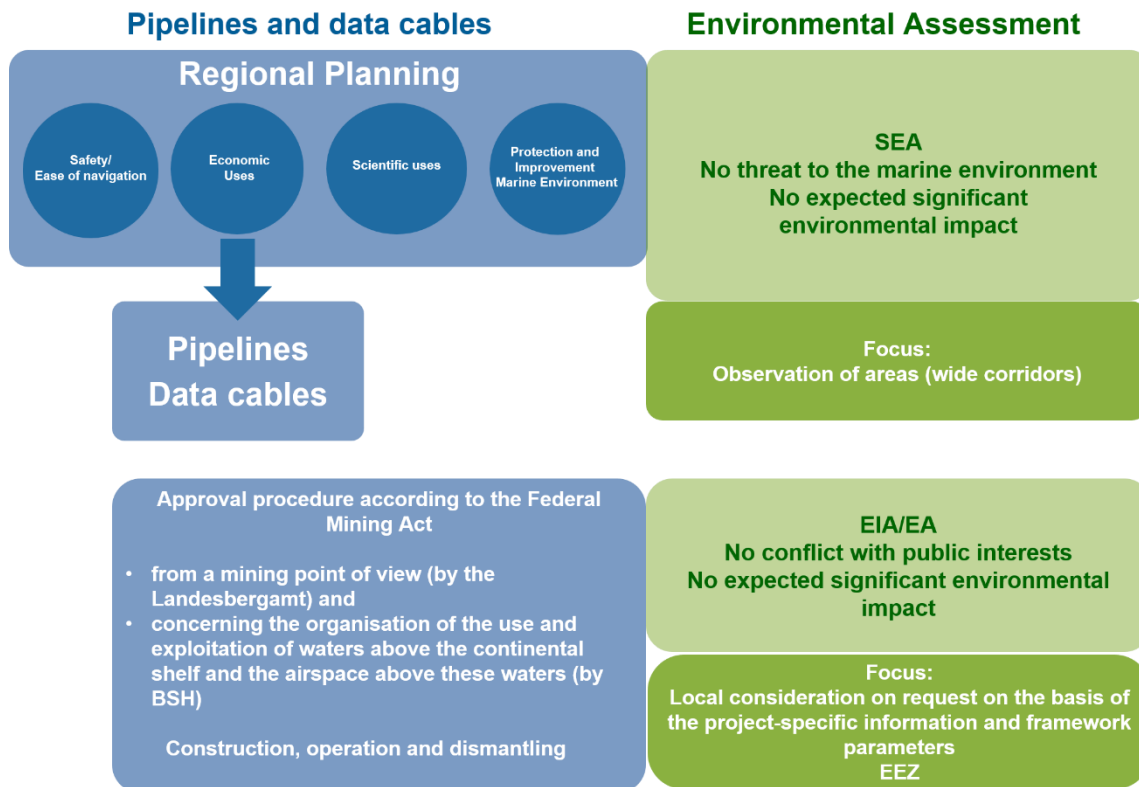


Figure 4: Overview of the focal points of environmental assessment for pipelines and data cables.

2.6 Ressource extraction

In the German North Sea and Baltic Sea, various mineral resources are sought and extracted, e.g. sand, gravel and hydrocarbons. As a superordinate instrument, spatial planning deals with possible large-scale spatial designations, possibly including other uses. The likely significant environmental impacts are assessed (see also Chapter 5.5).

The extraction of raw materials is regularly divided into different phases - exploration, development, operation and aftercare.

The exploration serves the purpose of exploring raw material deposits according to § 4 (1) BBergG. In the marine sector, it is regularly carried out by means of geophysical surveys, including seismic surveys and exploration drilling. The extraction of raw materials in the EEZ includes the extraction (dissolving, releasing), processing, storage and transport of raw materials.

For exploration in the range of the continental shelf, mining authorisations (permit, authorisation) must be obtained in accordance with the Federal Mining Act. These grant the right to explore and/or extract mineral resources in a defined field for a defined period of time. For development (extraction and exploration activities) additional approvals in the form of operating plans are required (cf. § 51 BBergG). For the establishment and management of a business, main operating plans are to be drawn up for a period not exceeding 2 years as a rule, which must be continuously re-established if necessary § 52 (1) S. 1 BBergG).

In the case of mining projects that require an EIA, it is mandatory to draw up a general operating plan, for the approval of which a planning approval procedure must be carried out (§ 52 (2a) BBergG). General operating plans are usually valid for a period of 10 to 30 years.

According to § 57c BBergG in conjunction with the Ordinance on the Environmental Impact Assessment of Mining Projects (UVP-V Mining), the construction and operation of production platforms for the extraction of crude oil and natural gas in the area of the continental shelf require an EIA. The same applies to marine sand and gravel extraction on extraction sites of more than 25 ha or in a designated nature reserve or Natura 2000 area.

The approval authorities for the German North Sea and Baltic Sea EEZ are the State mining agencies.

2.7 Shipping

In the context of spatial planning, the shipping sector is regularly defined in terms of areas (priority and/or reservation areas), objectives and principles. A tiered planning and approval process, as is the case for the offshore wind energy sector, grid connections, cross-border cables, pipelines and data cables, does not exist for the shipping sector.

With regard to the consideration of likely significant effects of the provisions on the shipping sector, reference is made to chapter 5.5

2.8 Fisheries and aquaculture

Fisheries and aquaculture are considered as concerns in the context of spatial planning. There is no tiered planning and approval process.

With regard to the consideration of the likely significant effects, reference is made to chapter 5.5

2.9 Military

Military is considered a concern in the context of spatial planning. There is no tiered planning and approval process.

With regard to the consideration of the likely significant effects, reference is made to chapter 5.5

2.10 Tourism

The issue of tourism is also considered. There is no tiered planning and approval process.

With regard to the consideration of the likely significant effects, reference is made to chapter 5.5

3 Presentation and consideration of the objectives of environmental protection

The preparation of the MSP and the implementation of the SEA shall take into account the objectives of environmental protection. These provide information on the environmental status that is to be achieved in the future (environmental quality objectives). The objectives of environmental protection can be found in an overall view of the international, EU and national conventions and regulations dealing with marine environmental protection, on the basis of which the Federal Republic of Germany has committed itself to certain principles and has committed itself to certain objectives. The environmental report will include a description of how compliance is assessed and what specifications or measures are taken.

3.1 International conventions on marine environmental protection

The Federal Republic of Germany is a party to all relevant international conventions on marine environmental protection.

3.1.1 Globally applicable conventions that serve the protection of the marine environment in whole or in part

- International Convention for the Prevention of Marine Pollution from Ships, 1973, as amended by the Protocol of 1978 (MARPOL 73/78)
- 1982 United Nations Convention on the Law of the Sea
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London, 1972) and the 1996 Protocol

3.1.2 Regional agreements on marine environmental protection

- Trilateral Wadden Sea Cooperation (1978) and Trilateral Monitoring and Assessment Programme of 1997 (TMAP)
- 1983 Agreement for cooperation in dealing with pollution of the North Sea by oil and other harmful substances (Bonn Agreement)
- 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)
- Convention on the Protection of the Marine Environment of the Baltic Sea Area 1992 (Helsinki Convention)

3.1.3 Agreements specific to protected goods

- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) of 1979
- 1979 Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)

Within the framework of the Bonn Convention, regional agreements for the conservation of the species listed in Appendix II were concluded in accordance with Art. 4 No. 3 Bonn Convention:

- Agreement on the Conservation of African-Eurasian Migratory Waterbirds 1995 (AEWA)

- 1991 Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS)
- 1991 Agreement on the Conservation of Seals in the Wadden Sea
- Agreement on the Conservation of Populations of European Bats 1991 (EUROBATS)
- 1993 Convention on Biological Diversity

3.2 Environmental and nature conservation requirements at EU level

The substantive scope of application of the TFEU Treaty², and thus in principle also of secondary law, is extended in so far as the Member States experience an increase in rights in an area outside their territory which they have transferred to the EU (EuGH, Kommission./Ver. Vereinigtes Königreich, 2005) Thus, in the field of marine environmental protection, nature conservation or water protection, the applicability of Union law provisions also applies to the EEZ.

As relevant EU legislation should be considered:

- Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning (MSP Directive)
- Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (Environmental Impact Assessment Directive, EIA Directive)
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive),
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (Water Framework Directive, WFD)
- Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (Strategic Environmental Assessment Directive, SEA Directive)
- Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive, MSFD)
- Directive 2009/147/EC of the European Parliament and Council of 30 November 2009 on the conservation of wild birds (Birds Directive),
- Rules on sustainable fisheries under the Common Fisheries Policy

² Treaty on the Functioning of the European Union, OJ EC No. C 115 of 9.5.2008, p. 47.

3.3 Environmental and nature conservation requirements at national level

There are also various legal provisions at national level whose requirements must be taken into account in the environmental report:

- Act on Nature Conservation and Landscape Management (Federal Nature Conservation Act - BNatSchG)
- Water Resources Act (WHG)
- Environmental Impact Assessment Act (UVP/G)
- Ordinance on the establishment of the nature reserve "Sylter Außenriff - Östliche Deutsche Bucht", the Regulation on the establishment of the nature reserve "Borkum Riffgrund", and the ordinance on the establishment of the nature reserve "Doggerbank" in the North Sea EEZ
- Ordinance on the designation of the Fehmarnbelt Nature Reserve, ordinance on the designation of the Kadetrinne Nature Reserve and ordinance on the designation of the Eastern German Bight - Rönnebank Nature Reserve in the Baltic Sea EEZ
- Management plans for the nature conservation areas in the German North Sea EEZ (participation procedure not yet completed)
- Energy and climate protection targets of the Federal Government

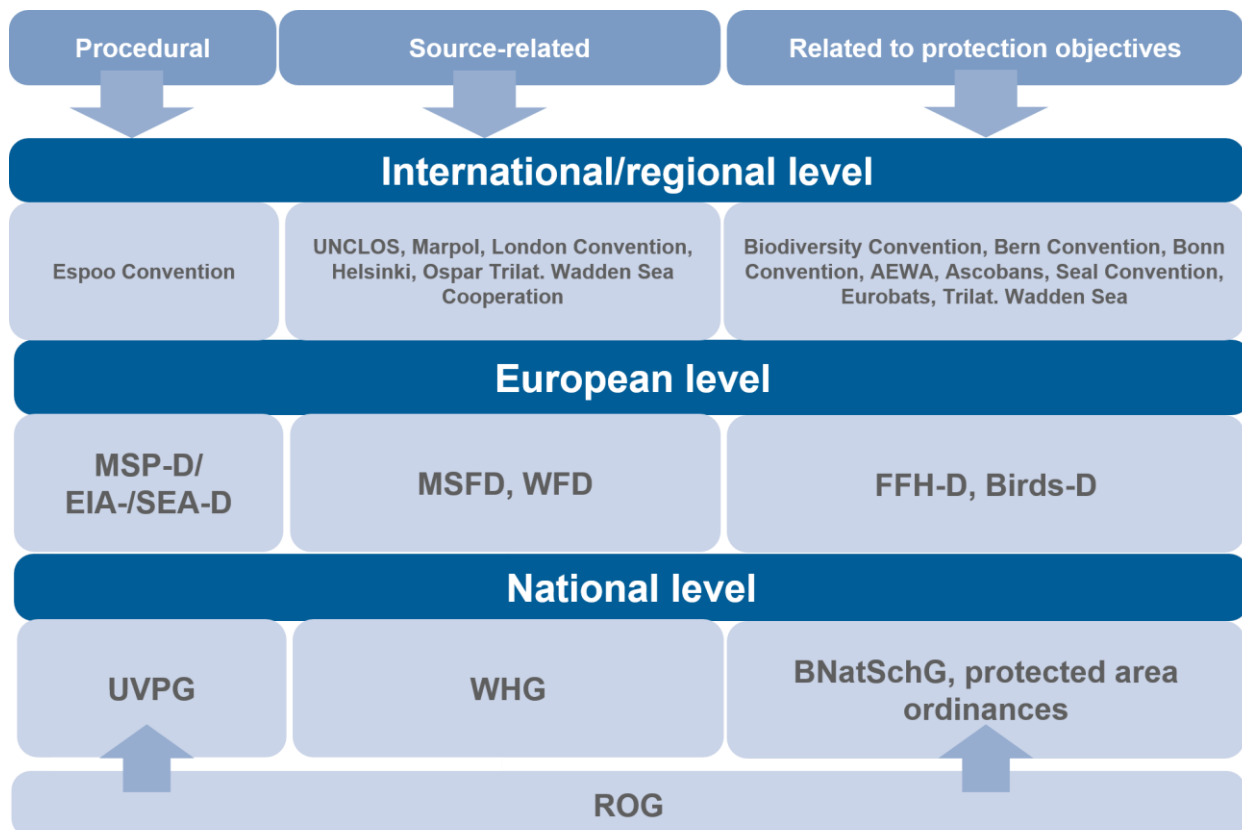


Figure 5: Overview of the levels of the relevant legal acts for the SEA.

4 Process and approach

4.1 Integration of the SEA into the planning process

SEA is seen as an integral part of the overall planning process (see figure below). Parallel to the consultation of this draft framework, the status report on the revision of spatial planning in the German EEZ in the North and Baltic Seas will be published. In addition to the evaluation of the 2009 spatial plans, the status report also includes a chapter on monitoring the plans. This analysis served as the starting point for the integrated planning and SEA process. In addition to the publication of the draft scope of environmental assessment, a preliminary assessment of selected environmental aspects in the sense of an early assessment of alternatives is carried out for the planning options (A, B, C) developed in the concept for updating the plans (see also Chapter 4.2).

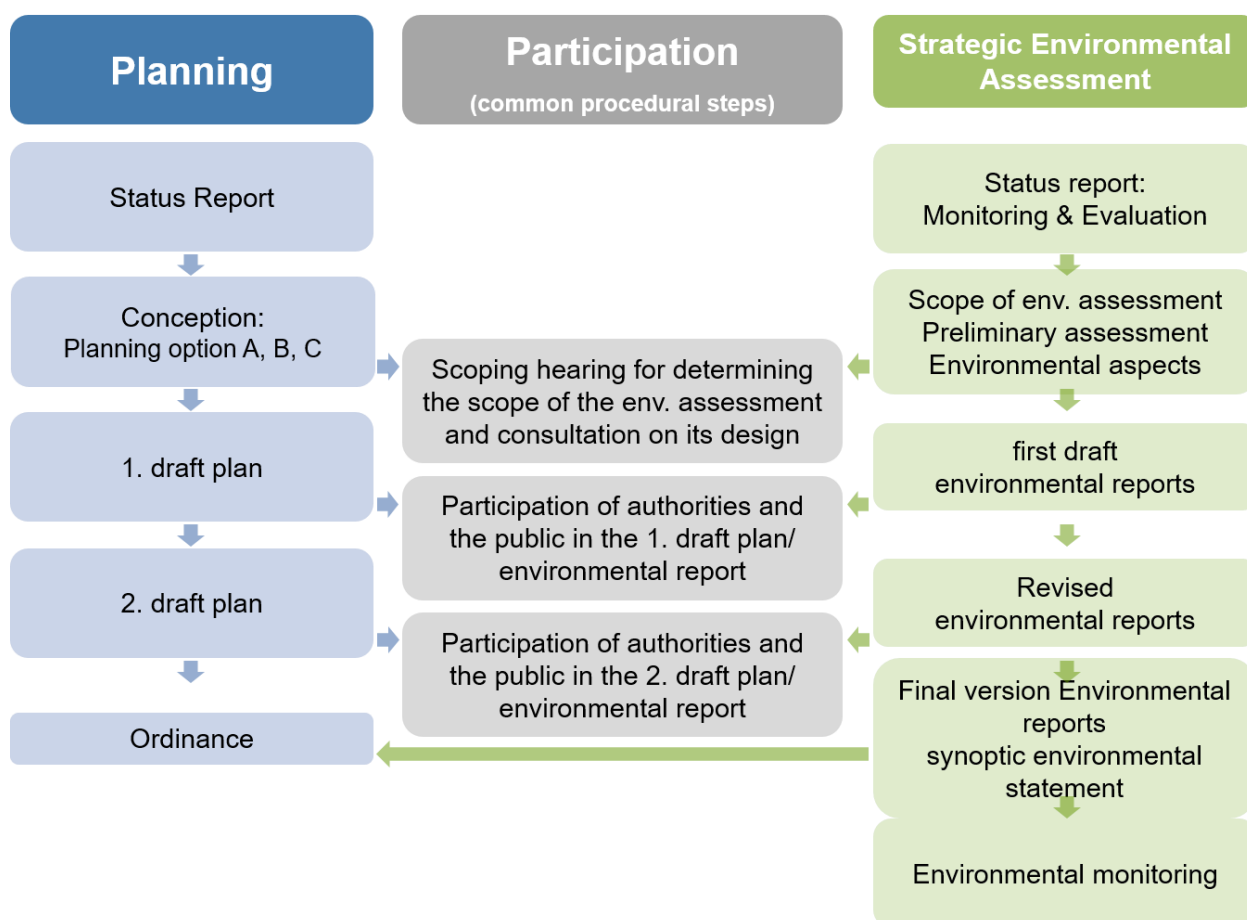


Figure 6: Overview of the planning and participation process.

4.2 Tiered assessment of alternatives

A tiered assessment of alternatives is planned for the spatial plan to be revised. Depending on the increasingly concrete planning, the alternatives to be examined are reduced in the course of the planning process and become increasingly (spatially) concrete.

In general, the environmental report pursuant to § 5 (1) sentence 1 SEA Directive in conjunction with the criteria in Annex I SEA Directive and § 40 (2) no. 8 UVPG contains a brief description of the reasons for the choice of the reasonable alternatives examined. When describing and assessing the environmental effects determined pursuant to § 8 (1) ROG, it shall contain information on the other planning options under consideration in accordance with No. 2 c Annex

1 to § 8 (1) ROG, taking into account the objectives and the spatial scope of the spatial plan. The prerequisite is always that they take into account the objectives and the geographical scope of the ROP.

At the same time, the identification and examination of the planning possibilities or planning alternatives under consideration can only relate to what can reasonably be required in terms of the content and level of detail of the spatial plan. The following applies: The greater the expected environmental impacts and thus the need for conflict management in planning, the more extensive or detailed studies are required.

Annex 4 No. 2 UVPG gives examples of the examination of alternatives with regard to the design, technology, location, size and scope of the project, but explicitly refers only to projects. At the planning level, therefore, the conceptual/strategic design and spatial alternatives play a major role.

In principle, it should be noted that a preliminary examination of possible and conceivable planning options is already inherent in all designations in the form of objectives and principles. As can be seen from the justification of the individual planning principles, in particular those relating to the environment, the respective principle is already based on a weighing up of possible affected public interests and legal positions, so that a "preliminary examination" of planning possibilities or alternatives has already taken place. There is already a wide range of different uses and legally protected interests in the EEZ.

In detail, the environmental report examines not only the zero alternative, but also spatial planning possibilities or alternatives, where relevant for the individual uses.

For the individual steps of the staged alternative see Figure 7: Tiered procedure in the assessment of alternatives.:

The concept for revising the spatial plans in the German North Sea and Baltic Sea EEZ includes three planning options (A-C) each as overall spatial plan variants in the early stages of the process of revising the spatial plans. The early and comprehensive consideration of several planning options represents an essential planning and review step in the revision of spatial plans. For this concept for updating, a preliminary assessment of selected environmental aspects is made before the actual environmental report is prepared. The preliminary assessment of selected environmental aspects in the sense of an early examination of variants and alternatives should support the comparison of the three planning options from an environmental point of view.

In a next step, the draft environmental report will be prepared in parallel to the 1st draft plan and subsequently consulted. The draft environmental report will examine selected sectoral and sub-regional planning options in the context of the assessment of alternatives in accordance with the planning that is becoming more concrete.

In the revised or final environmental report, the focus of the alternative assessment is in particular on justifying the weighed planning option.

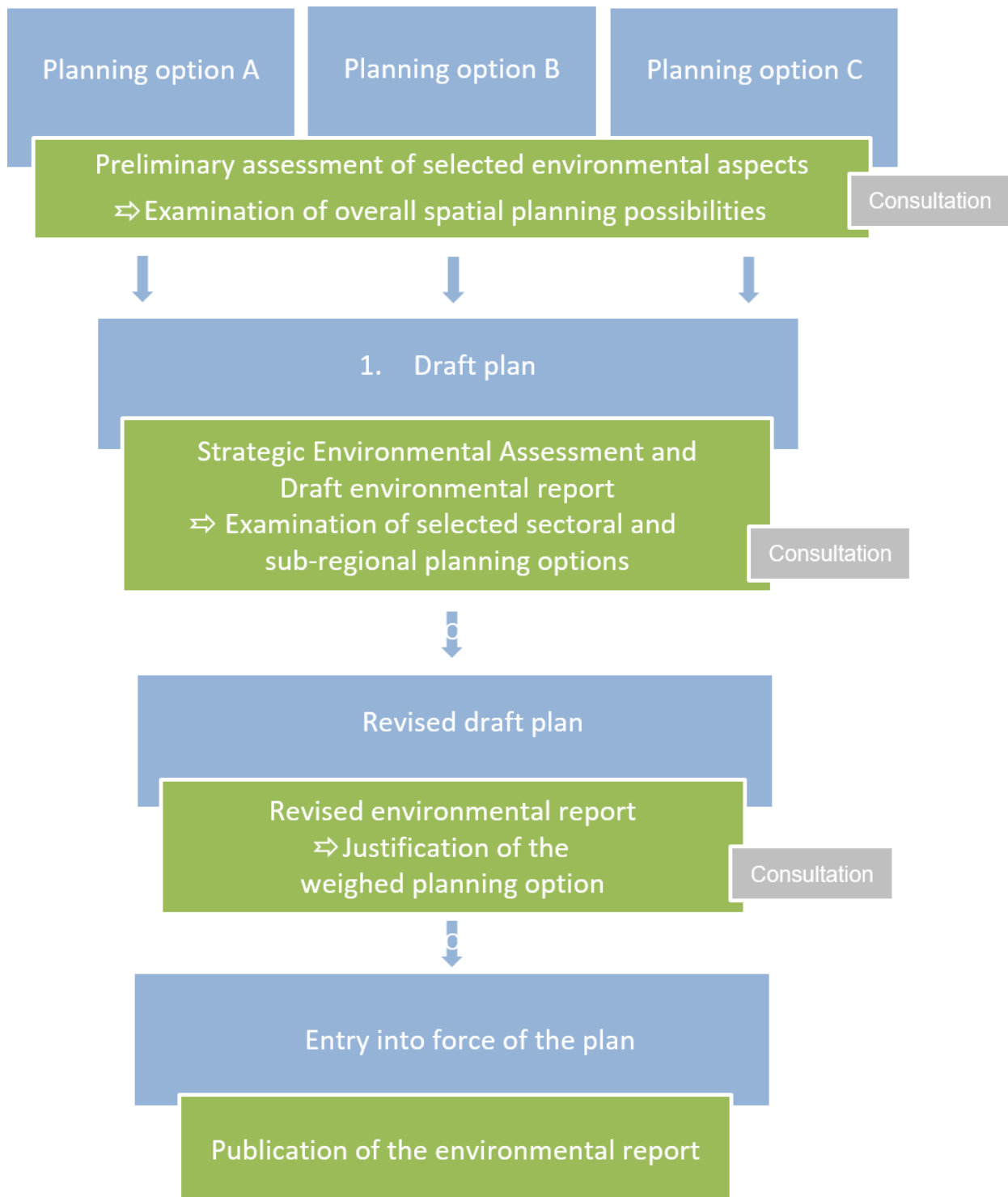


Figure 7: Tiered procedure in the assessment of alternatives.

5 Methodology of the Strategic Environmental Assessment

In principle, different methodological approaches can be considered when carrying out the strategic environmental assessment. The present environmental report builds on the methodology already applied in the strategic environmental assessment of the federal sectoral plans and the site development plan with regard to the use of offshore wind energy and grid connections.

For all other uses for which specifications are made in the ROP, such as shipping, extraction of raw materials and marine research, sector-specific criteria are used to assess possible impacts.

The methodology is based primarily on the provisions of the plan to be examined. This SEA will identify, describe and assess whether the individual specifications are likely to have significant impacts on the assets concerned. Pursuant to § 1 (4) UVPG in conjunction with § 40 (3) of the Environmental Impact Assessment Act, the competent authority shall provisionally assess in the environmental report the environmental effects of the provisions with a view to effective environmental precautions in accordance with the applicable laws. Criteria for the evaluation can be found in Annex 2 of the Federal Spatial Planning Act.

The object of the environmental report is to describe and assess the likely significant impacts of the implementation of the MSP on the marine environment for provisions on the use and protection of the EEZ. In each case, the test is carried out in relation to the protection objectives.

Pursuant to § 7 (1) ROG, spatial plans are to contain designations as **objectives and principles** of spatial planning on the development, organisation and safeguarding of space, in particular on the uses and functions of space. Pursuant to 7 (3) ROG, these designations may also designate areas.

Specifications on the following uses are the subject of the environmental report, in particular:

- Shipping
- Offshore wind energy
- Cables and pipelines
- Military
- Ressource extraction
- Research
- Fisheries

Under § 17 (1) (4) ROG, designations for the protection and improvement of the marine environment also play a role.

5.1 Spatial extent of the environmental assessment

Two separate environmental reports are produced for the North Sea and Baltic Sea EEZs. The description and assessment of the environmental status refers to the EEZs of the North Sea and the Baltic Sea, respectively, for which the spatial plan sets designations. The spatial extent of the environmental assessment of the SEA covers the German North Sea and Baltic Sea EEZ (Figure 8&9). It should be noted that the data situation within the North Sea EEZ is significantly better for the area up to shipping route 10 than for the area northwest of shipping route 10, due to the available project-related monitoring data.

For the area northwest of shipping route 10, the spatial plan also makes designations. Based on the available sediment data and findings from monitoring for the "Doggerbank" protected area, it is also possible to describe and assess the environmental status of this area and to evaluate potential environmental impacts.

The adjacent territorial sea and the adjacent areas of the neighbouring countries are not covered by this plan, but they are considered in the context of the cumulative and transboundary assessment in this SEA.

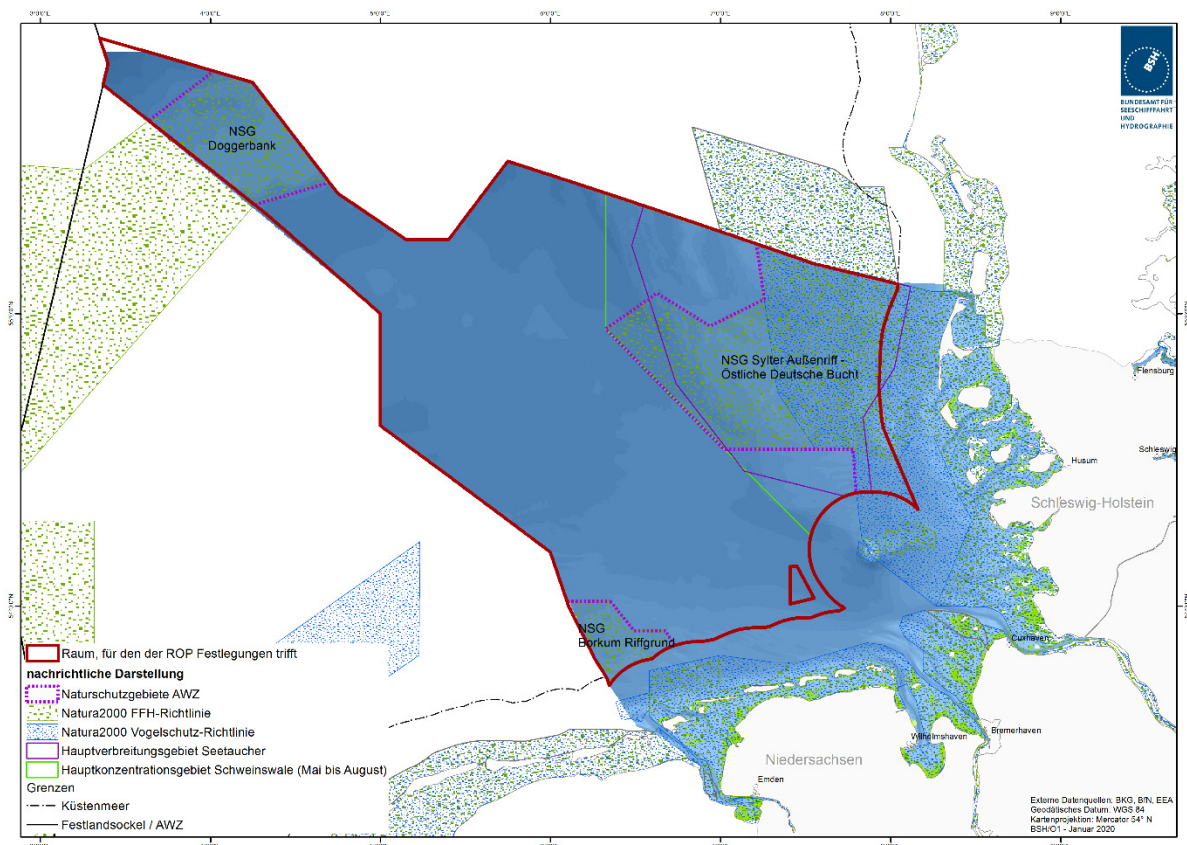


Figure 8: Boundary of the spatial extent of the environmental assessment for the SEA (Environmental Report MSP EEZ North Sea).

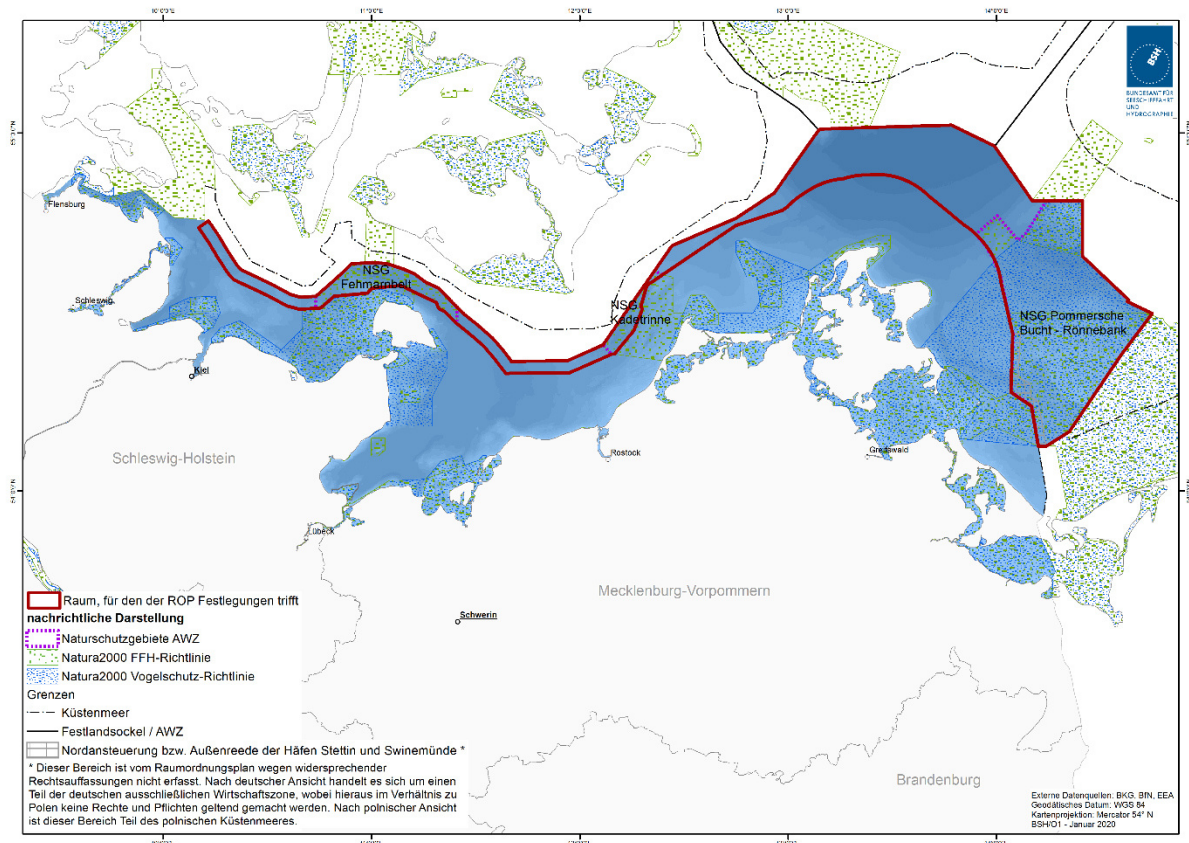


Figure 9: Boundary of the spatial extent of the environmental assessment for the SEA (Environmental Report MSP EEZ Baltic Sea).

5.2 Implementation of the environmental assessment

The assessment of the likely significant environmental effects of the implementation of the spatial plan shall include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects on the environment. Secondary or indirect effects are those which are not immediate and therefore may take effect after some time and/or in other places. Occasionally we also speak of follow-up effects or interactions.

Possible effects of the implementation of the plan are described and evaluated in relation to the protection objectives. A uniform definition of the term "significance" does not exist, as it is a "individually determined significance" which cannot be considered independently of the "specific characteristics of plans or programmes" (SOMMER, 2005, 25f.). In general, significant effects can be understood to be effects that are serious and significant in the context under consideration.

According to the criteria of Annex 2 of the ROG, which are decisive for the assessment of likely significant environmental impacts, significance is determined by

- "the probability, duration, frequency and irreversibility of the effects
- the cumulative nature of the effects;
- the cross-border characteristic of the effects;
- the risks to human health or the environment (e.g. in the event of accidents);
- the scale and spatial extent of the impact;

- the importance and sensitivity of the area likely to be affected, due to its specific natural characteristics or cultural heritage, the exceedance of environmental quality standards or threshold values and intensive land use;
- the impact on sites or landscapes whose status is recognised as protected at national, union or international level'.

Also relevant are the characteristics of the plan, in particular

- the extent to which the plan sets a framework for projects and other activities in terms of location, type, size and operating conditions or through the use of resources;
- the extent to which the plan influences other plans and programmes, including those in a planning hierarchy;
- the importance of the plan for the integration of environmental considerations, in particular with a view to promoting sustainable development;
- the environmental issues relevant to the plan;
- the relevance of the plan for the implementation of European environmental legislation (e.g. plans and programmes concerning waste management or water protection) (Annex II SEA Directive).

In some cases, further details on when an impact reaches the significance threshold can be derived from sectoral legislation. Thresholds were developed under the law in order to be able to make a delimitation.

The description and evaluation of potential environmental impacts is carried out for the individual spatial designations and regulations for the use and protection of the EEZ in relation to the protected area, taking into account the assessment of the status.

Furthermore, where necessary, a differentiation is made according to different technical designs. The description and assessment of the likely significant impacts of the implementation of the plan on the marine environment shall also relate to the protection objectives presented. All plan contents that could potentially have significant environmental impacts are examined.

Both permanent and temporary, e.g. construction-related, effects are considered. This is followed by a description of possible interactions, a consideration of possible cumulative effects and potential cross-border impacts.

The following protection objectives are considered with regard to the assessment of the state of the environment:

- Area
- Soil
- Water
- Plankton
- Biotope types
- Benthos
- Fish
- Marine mammals
- Avifauna
- Bats
- Biological diversity
- Air
- Climate
- Seascape
- Cultural heritage and other material goods
- Population, in particular human health
- Interactions between protection objectives

In general, the following methodological approaches are used in the environmental assessment:

- Qualitative descriptions and assessments
- Quantitative descriptions and assessments
- Evaluation of studies and technical literature
- Visualizations
- Worst-case assumptions
- Trend assessments (e.g. on the state of the art of installations and the possible development of shipping traffic)
- Estimations by experts/ the professional public

An assessment of the impacts of the designations of the plan is carried out on the basis of the status description and status assessment and the function and significance of the individual areas for the individual protection objectives on the one hand, and the effects emanating from these designations and the resulting potential impacts on the other. A prognosis of the project-related effects when the MSP is implemented is based on the criteria of intensity, scope and duration or frequency of the effects (see Figure10). Further assessment criteria are the probability and reversibility of the effects as set out in Annex 2 to § 8 (2) ROG.

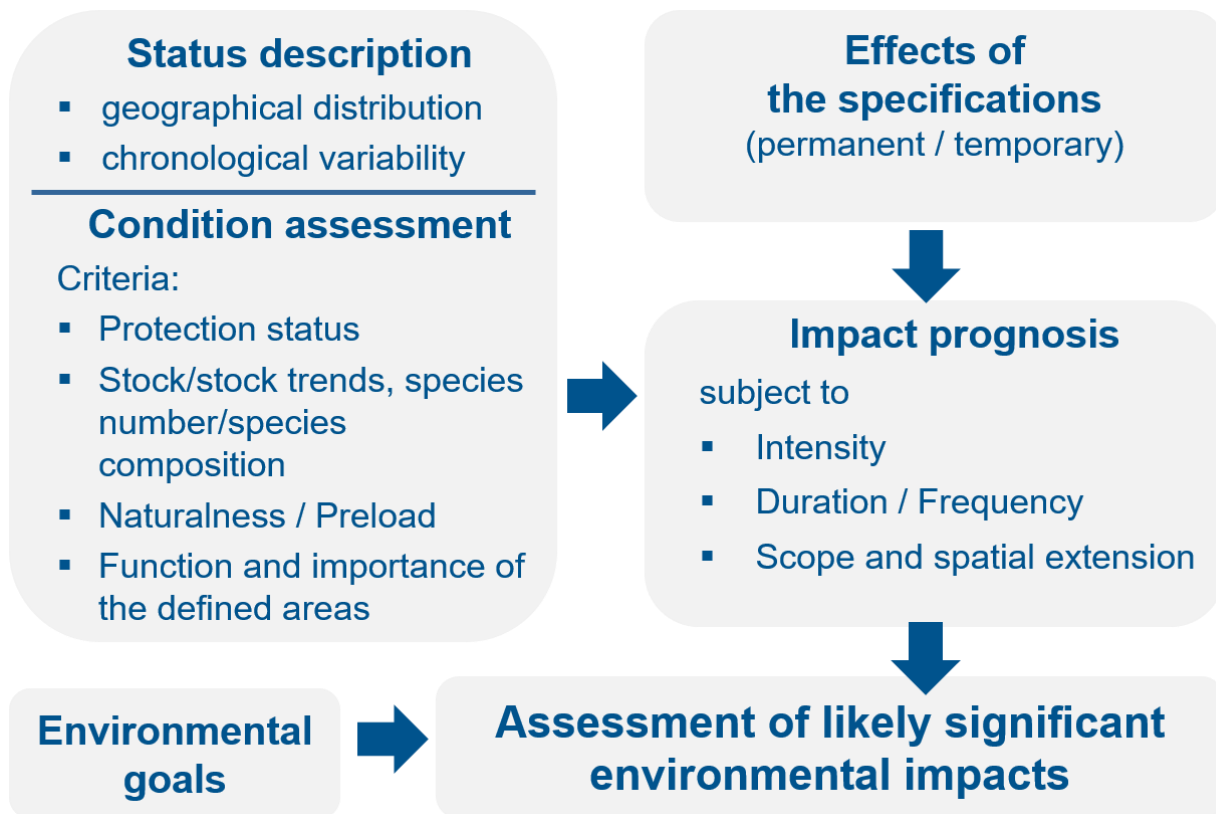


Figure10: General methodology for the assessment of likely significant environmental impacts.

5.3 Implementation of the ecosystem-based approach

The implementation of the ecosystem-based approach is a requirement under § 2 3 No. 6 p. 9 ROG with the aim of guiding human activities, sustainable development and supporting sustainable growth (cf. § 5 1 MSPD in conjunction with § 1 3 of the Marine Strategy Framework Directive).

Recital 14 of the MSFD specifies that spatial planning should be based on an ecosystem-based approach in accordance with the MSFD. It is also clear here – as stated in preamble 8 of the MSFD - that sustainable development and use of the seas should be compatible with a good environmental status.

According to § 5. (1) of the MSPD, Member States "shall consider economic, social and environmental aspects to support sustainable development and growth in the maritime sector, applying an ecosystem-based approach, and to promote the coexistence of relevant activities and uses."

§ 1 (3) of the MSFD specifies that "Marine strategies shall apply an ecosystem-based approach to the management of human activities, ensuring that the collective pressure of such activities is kept within levels compatible with the achievement of good environmental status and that the capacity of marine ecosystems to respond to human-induced changes is not compromised, while enabling the sustainable use of marine goods and services by present and future generations".

The following figure summarises the relationship between the two main directives, but also links to other relevant directives.

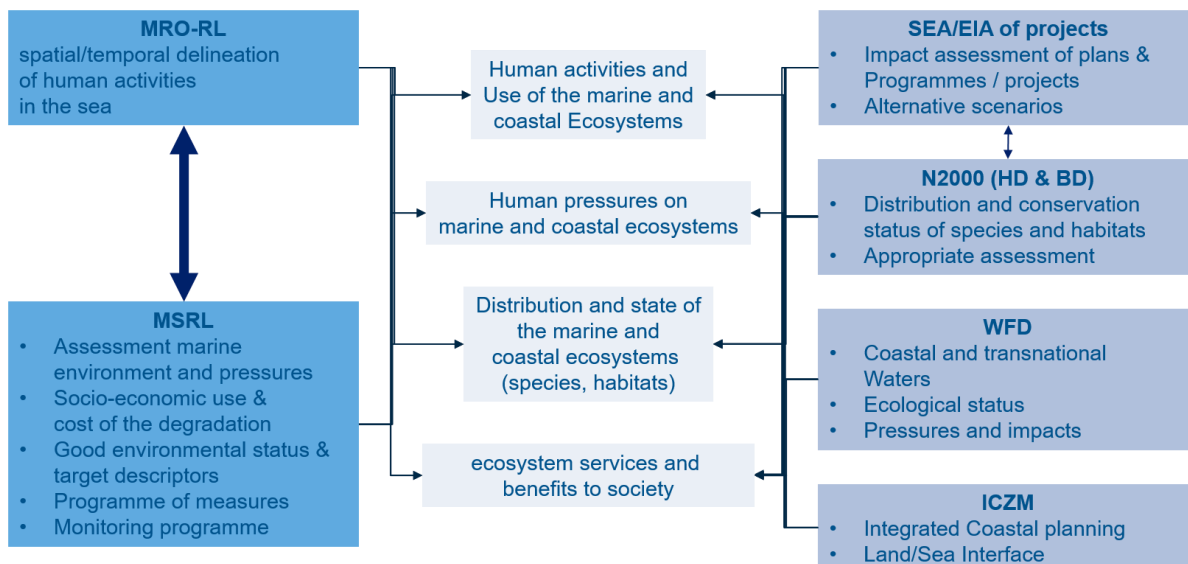


Figure 11: The directive on maritime spatial planning in relation to the MSFD and further relevant directives (amended after (Altvater, S.; Lukic, I.; Eilers, S., 2019)).

Thus, the ecosystem-based approach has become increasingly important in recent years. It allows a holistic view of the marine environment, recognising that humanity is an integral part of the natural system. Natural ecosystems and their services are considered with the interactions resulting from their use. The approach taken is to manage ecosystems within the "limits of their functioning" in order to safeguard them for use by future generations. In addition, understanding ecosystems enables effective and sustainable use of resources.

The implementation of the ecosystem-based approach requires a holistic perspective, the continuous development of knowledge about the oceans and their use, the application of the precautionary principle and flexible, adaptive management or planning. One of the greatest challenges in this context is to understand the cumulative effects that the combination of different activities can have on species and habitats (cf. Chapter 5.5.1). Another important aspect of the ecosystem-based approach is the promotion of communication and participation processes in order to use the broadest possible knowledge base of all stakeholders and to achieve broad acceptance of the plan.

Based on the so-called twelve Malawi Principles of the Biodiversity Convention, the ecosystem-based approach has also been concretised by the HELCOM-VASAB Working Group on Maritime Spatial Planning and specified for marine spatial planning (HELCOM, 2016). The key elements formulated there represent a suitable approach for implementing the ecosystem-based approach in the spatial plans of the German EEZ:

- Best available Knowledge and Practice;
- Precaution;
- Alternative development;
- Identification of ecosystem services;
- Mitigation;
- Relational Understanding;
- Participation and Communication;
- Subsidiarity and Coherence;
- Adaption.

These key elements can be assigned to one or more phases of MSP and SEA. In part, they are mutually dependent or build upon each other. Some of the key elements have a substantive focus, others are more related to the planning process.

Some of these aspects are in principle or have been part of the German planning system for many years. The bundling in an overall ecosystem-based approach for updating the spatial plans for the German EEZ, including the strategic environmental assessments, is a new approach. As shown in the following figure, the ecosystem-based approach is already applied in the conception for updating the spatial plans and the examination of the different planning options.

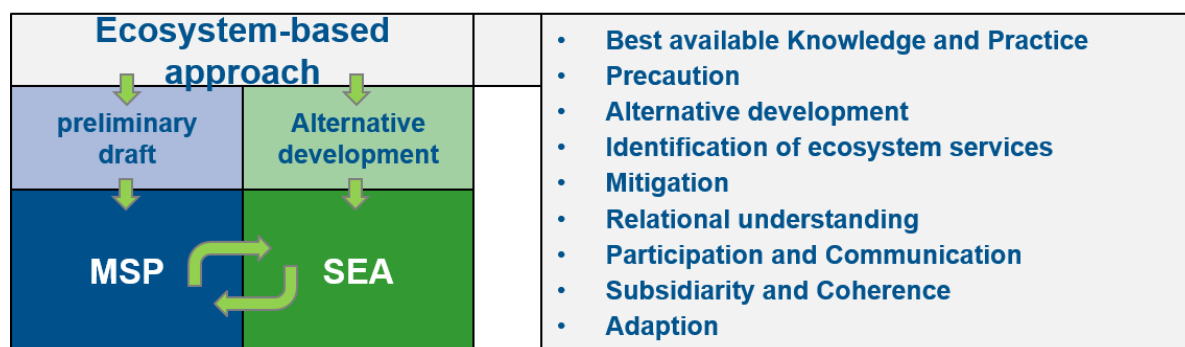


Figure 12: The ecosystem-based approach as a structuring concept.

5.4 Criteria for the description and assessment of the status

The status of the individual protection objectives is assessed on the basis of various criteria. For the protection objectives area/soil, benthos and fish, the assessment is based on the aspects of rarity and endangerment, diversity and uniqueness as well as naturalness. The description and assessment of the protection objectives marine mammals and sea and resting birds is based on the aspects listed in figure 10. Since these are highly mobile species, an approach analogous to that for the protection objectives area/soil, benthos and fish is not appropriate. For sea and resting birds and marine mammals, the criteria are protection status, assessment of occurrence, assessment of spatial units and prior endangerment. In addition to rarity and endangerment and naturalness, the aspects of assessing the occurrence and the large-scale importance of the area for bird migration are considered for the protection of migratory birds.

The following is a summary of the criteria that were used for the status assessment of the respective protection objectives. This overview deals with the protection objectives that are considered in the focus.

Area/soil**Aspect: Rarity and vulnerability**

Criterion: Percentage of sediments on the seabed and distribution of the morphological inventory of forms.

Aspect: Diversity and distinctiveness

Criterion: Heterogeneity of the sediments on the seabed and formation of the morphological inventory of forms.

Aspect: Naturalness

Criterion: Extent of the anthropogenic preload of the sediments on the seabed and the morphological inventory of forms.

Benthos**Aspect: Rarity and vulnerability**

Criterion: Number of rare or endangered species based on the Red List species detected (Red List by RACHOR et al. 2013).

Aspect: Diversity and distinctiveness

Criterion: Number of species and composition of the species communities. The extent to which species or communities characteristic of the habitat occur and how regularly they occur is assessed.

Aspect: Naturalness

Criterion: For the purpose of this criterion, the intensity of fishing exploitation, which is the most effective disturbance variable, shall be used as the assessment criterion. For other disturbance variables, such as eutrophication, shipping traffic, pollutants, etc., the appropriate measurement and detection methods are currently still lacking to be able to include them in the assessment.

Biotope types**Aspect: Rarity and vulnerability**

Criterion: national protection status and endangerment of biotope types according to the Red List of endangered biotope types in Germany (FINCK et al., 2017).

Aspect: Naturalness

Criterion: Endangerment due to anthropogenic influences.

Fish

Aspect: Rarity and vulnerability
Criterion: Proportion of species considered endangered according to the current Red List marine fish (THIEL et al. 2013) and for the diadromous species of the Red List freshwater fish (FREYHOF 2009) and assigned to Red List categories.
Aspect: Diversity and distinctiveness
Criterion: The diversity of a fish community can be described by the number of species (α -Diversity, 'Species richness'). The species composition can be used to assess the specific character of a fish community, i.e. how regularly habitat-typical species occur. Diversity and distinctiveness are compared and evaluated between the North Sea or Baltic Sea as a whole and the German EEZ as well as between the EEZ and the individual areas.
Aspect: Naturalness
Criterion: The naturalness of a fish community is defined as the absence of anthropogenic influences. Through the removal of target species and by-catch, and the impact on the seabed in the case of bottom trawling methods, fisheries are considered the most effective disturbance to the fish community and therefore serve as a measure of the naturalness of fish communities in the North Sea and Baltic Sea respectively. An assessment of stocks on a smaller spatial scale such as the German Bight is not carried out.

Marine mammals

Aspect: Protection status
Criterion: Status according to Annex II and Annex IV of the Habitats Directive and the following international protection agreements: Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention, CMS), ASCOBANS (Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas), Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)
Aspect: Assessment of the occurrence
Criteria: Stock, stock changes/trends based on large-scale surveys, distribution patterns and density distributions
Aspect: Evaluation of spatial units
Criteria: Function and importance of the German EEZ and the areas defined in the FEP for marine mammals as transit areas, feeding grounds or breeding grounds
Aspect: Preload
Criterion: Endangerment due to anthropogenic influences and climate change.

Seabirds and resting birds

Aspect: Protection status
Criterion: Status according to Annex I species of the Birds Directive, European Red List of BirdLife International
Aspect: Assessment of the occurrence
Criteria: Stocks in the German North Sea and Baltic Sea and stocks in the German EEZ, large-scale distribution patterns, abundances, variability
Aspect: Evaluation of spatial units
Criteria: Function and relevance of the areas defined in the FEP for breeding birds, migrants, as resting areas, location of protected areas
Aspect: Preload
Criterion: Endangerment due to anthropogenic influences and climate change.

Migratory birds

Aspect: large-scale importance of bird migration
Criterion: Guidelines and concentration areas
Aspect: Assessment of the occurrence
Criterion: Migration patterns and its intensity
Aspect: Rarity and vulnerability
Criterion: Number of species and endangered status of the species involved according to Annex I of the Birds Directive, Bern Convention of 1979 on the Conservation of European Wildlife and Natural Habitats, Bonn Convention of 1979 on the Conservation of Migratory Species of Wild Animals, AEWA (African-Eurasian Waterbird Agreement) and SPEC (Species of European Conservation Concern).
Aspect: Naturalness
Criterion: Prior exposure/endangerment due to anthropogenic influences and climate change.

5.5 Assumptions used to describe and assess the likely significant impacts

The description and assessment of the likely significant impacts of the implementation of the MSP on the marine environment is carried out for the individual designations on the use and protection of the EEZs based on the protection objectives, taking into account the status assessment described above. The following table sets out, on the basis of the main impact factors, the potential environmental impacts which form the basis for the assessment of the likely significant environmental effects. The effects are differentiated according to whether they are permanent or temporary.

Use	Effect	Potential impact	Protection Objectives																
			Benthos	Fish	Sea and resting birds	Migratory birds	Marine mammals	Bats	Plankton	Biotoypes	Biological diversity	Soil	Area	Water	Air	Climate	Population / human health	Cultural heritage and material assets	Seascape
Shipping	Underwater noise	Avoidance effects		x			x												
	Emissions and discharge of hazardous substances (accidents)	Adverse effect / damage	x	x	x		x		x	x	x	x					x		
	Physical disturbance during anchoring	Adverse effect on the sea floor	x t							x t		x t	x t					x	
	Emission of air pollutants	Adverse effects on air quality			x	x		x							x	x	x		
	Introduction and spread of invasive species	Change of species composition	x	x							x								
	Garbage disposal	Adverse effect / damage	x	x	x			x						x				x	
	Obstacle	Collision				x	x												
Visual unrest	Avoidance / barrier effects		x	x															
Resource extraction Sand- and gravel extraction / Seismic examination	Extraction of substrates	Habitat change	x	x						x	x	x						x	
		Habitat and area loss	x	x						x	x	x	x					x	
	Turbidity plumes	Adverse effect	x t	x t	x t									x t					
		Avoidance effects		x t															
	Physical disturbance by extraction	Adverse effect on the sea floor	x							x		x	x					x	
Underwater noise of seismic examinations	Avoidance effects, potential physical disturbance/ injury		x t				x t												
Scientific research	Extraction of selected species	Stock reduction		x															
	Physical disturbance by trawling	Adverse effect / damage	x	x						x		x						x	
Maritime uses without spatial designations in MSP																			
Military	Underwater noise	Avoidance effects, potential physical disturbance/ injury		x t			x t												
	Introduction / discharge of hazardous substances	Adverse effect / damage	x	x	x		x			x	x	x		x			x		
	Obstacle	Collision					x												
	Noise	Avoidance effects			x	x		x									x		
Recreation(al boating)	Extraction of selected species (Fishing)	Stock reduction		x															
	Underwater noise	Avoidance effects		x			x												
	Emission of air pollutants	Adverse effects on air quality			x	x		x						x	x	x			
	Garbage disposal	Adverse effect	x	x	x		x		x				x				x		
	Visual unrest	Avoidance effects			x														
Aquaculture	Nutrient input	Adverse effect	x	x					x		x			x					
	Fixed installations	Habitat change	x	x						x	x							x	
		Habitat and area loss	x	x									x					x	
Fishing	Extraction of selected species	Stock reduction		x							x								
		Change of nutrition basis			x		x												
	Bycatch	Adverse effect on stocks		x	x		x				x								
	Physical disturbance by trawling	Adverse effect / damage	x	x						x		x						x	

x potential impact on the protection objectives

x t potential temporary effect on the protection objectives

In addition to the impacts on the individual protection objective, cumulative effects and interactions between protection objectives are also assessed.

5.5.1 Cumulative assessment

According to § 5 (1) SEA Directive, the environmental report shall include an assessment of cumulative impacts. Cumulative impacts arise from the interaction of various independent individual impacts, which either add to each other through their interaction (cumulative impacts) or reinforce each other and thus produce more than the sum of their individual impacts (synergistic impacts) (e.g. SCHOMERUS et al., 2006). Both cumulative and synergistic impacts can be caused by the coincidence of impacts in time and space. The impact can be enhanced by similar uses or different uses with the same impact, thus increasing the impact on one or more protection objectives.

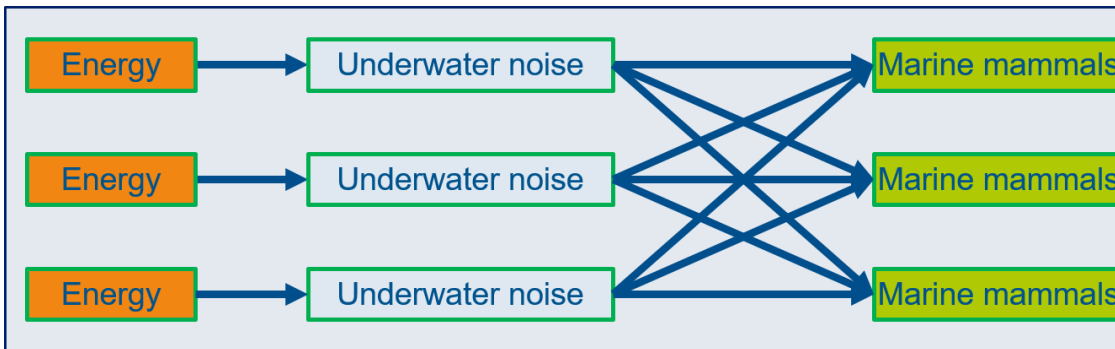


Figure 13: Exemplary cumulative impact of similar uses.

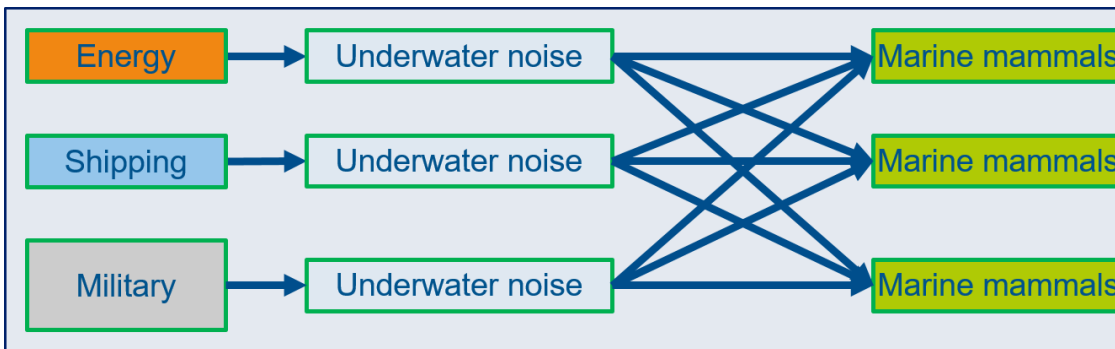


Figure 14: Exemplary cumulative impact of different uses.

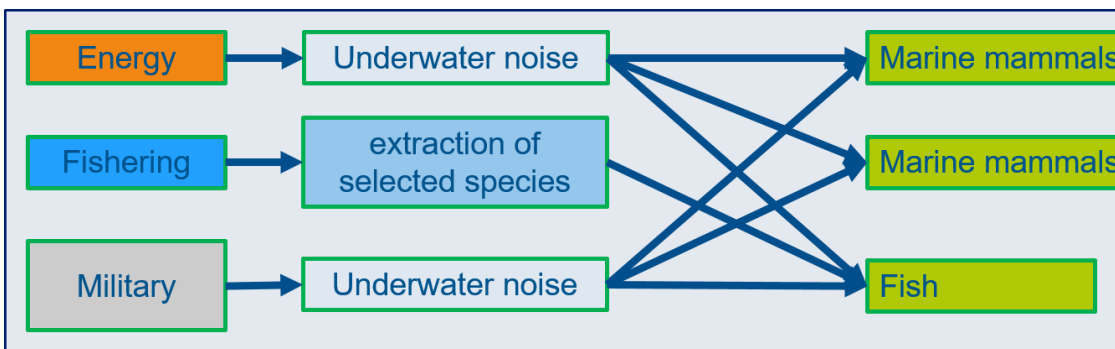


Figure 15: Exemplary cumulative impact of different uses with different impacts.

In order to examine the cumulative impacts, it is necessary to assess the extent to which the provisions of the plan can be attributed a significant adverse impact when combined. A review of the specifications is carried out on the basis of the current state of knowledge within the meaning of § 5 (2) SEA Directive. An important basis for assessing the impacts of habitat loss and underwater noise is provided by the position paper on the cumulative assessment of diver habitat loss in the German North Sea (BMU, 2009) and the noise abatement concept of the BMUB (2013).

5.5.2 Interactions

In general, impacts on a protection objective lead to various consequences and interactions between the protection objectives. The essential interdependence of the biotic protection objectives exists via the food chains. Due to the variability of the habitat, interactions can only be described in a very imprecise manner.

5.5.3 Specific assumptions for the assessment of likely significant environmental impacts

In detail, the procedure is followed in the analysis and examination of the respective specifications:

Offshore wind energy

With regard to priority and reservation areas for offshore wind energy, a worst-case scenario is assumed. For a consideration related to the protection objectives, certain parameters are assumed in this SEA. In detail, these are approximately the number of turbines, hub height [m], height of the lower rotor tip [m], rotor diameter [m], swept area of the rotor [m²], total height [m] and sealed area [m²] of the turbines.

As input parameters, the SEA takes particular account of

- Installations already in operation or in the process of authorisation (as reference and initial load)
- Transfer of the average parameters of the turbines commissioned in the last 5 years on the areas defined in the FEP 2019
- Forecast of certain technical developments for the priority and reservation areas for offshore wind energy additionally defined in the MSP on the basis of the parameters shown in Table 2. It should be noted that these are only partly estimation-based assumptions, as project-specific parameters are not or cannot be checked at SEA level.

Table 2: Parameters for the consideration of areas for offshore wind energy.

Wind energy	
Output per turbine [MW]	15
Hub height [m]	approx. 175
Height lower rotor tip [m]	approx. 50
Rotor diameter [m]	approx. 250
Swept area of the rotor [m ²].	approx. 49.000
Total height [m]	approx. 300
Area foundation incl. scour protection [m ²]	approx. 2,830

For the grid connection systems in the North Sea EEZ, one platform per 2 GW installed capacity is assumed for commissioning from 2029. A certain area [m²] is assumed for the platforms. For the connections of the priority areas for offshore wind energy, the route length (EEZ) varies between about 10 km and 160 km. For the reservation areas in zones 4 and 5, an average route length of around 250 km is assumed. For the assessment of the construction and operational environmental impacts, certain widths of the cable trench [m] are assumed for route corridors for submarine cables.

For grid connections in the Baltic Sea EEZ, the capacity is between 250 and 300 MW. The route length varies between 14 and 24 km.

Table 3: Parameters for the consideration of grid connections.

Submarine cable systems	
Cable trench width [m]	approx. 1
Platform area [m ²]	approx. 600

For the route corridors for pipelines, cross-border cables or data cables, the cable lengths result from the specifications. For pipelines, a width of 1.5 m is assumed for the assessment of the environmental impact for the overlying pipeline plus 10 m each for impairments due to "reef effect" and sediment dynamics.

For other uses, evaluation criteria or parameters for the environmental assessment are to be developed or specified in further proceedings. Initial considerations include the following parameters as examples:

Shipping

With regard to emissions in particular, the following parameters play a role in the assessment of environmental impact:

- Development of shipping traffic
- Number and size of vessels
- collision probability
- Ballast water exchange areas

The nature conservation assessment for individual species/species groups will probably be based mainly on specialist literature.

Ressource extraction

- Spatial extension of the mining area
- Land use intensity
- intensity and spatial extent of sediment drift
- mining technology etc.
- Sensitivity of the affected area

Military

- Type of military use
- Frequency of military exercises

6 Data

The basis for the SEA is a description and assessment of the environmental status in the area of the environmental assessment. All protection objectives must be included. The data is the basis for the assessment of the likely significant environmental impacts, the examination of the area and species protection law and the examination of alternatives.

Pursuant to § 8 (1) sentence 3 ROG, the environmental assessment refers to what can reasonably be required according to the current state of knowledge and generally accepted assessment methods as well as the content and level of detail of the spatial plan.

Under § 40 (4) UVPG, information available to the competent authority from other procedures or activities may be included in the environmental report if it is suitable for the intended purpose and sufficiently up-to-date.

The draft environmental report will, on the one hand, describe and assess the current state of the environment and present the likely development in the event of non-implementation of the plan. Secondly, the likely significant environmental effects resulting from the implementation of the plan are forecast and assessed.

The basis for the assessment of likely impacts is a detailed description and assessment of the state of the environment. The description and assessment of the current state of the environment and the expected development in the event of non-implementation of the plan will be carried out with regard to the following protection objectives:

- Surface/soil
- Water
- Plankton
- Biotope types
- Benthos
- Fish
- Marine mammals
- Avifauna
- Bats
- Biological diversity
- Air
- Climate
- Seascape
- cultural heritage and other material assets
- Population, especially human health
- Interactions between protection objectives.

6.1 Data Overview

The data and knowledge situation has improved significantly in recent years, particularly as a result of the extensive data collection in the context of environmental impact studies and the construction and operational monitoring for offshore wind farm projects and the accompanying ecological research.

This information also forms an essential basis for the monitoring of the 2009 spatial plans in accordance with § 45 (4) UVPG. Thereafter, the results of the monitoring shall be made available to the public and shall be taken into account when the plan is re-established. The results of the monitoring of the current plans are summarised in the status report on the revision of spatial planning in the German North Sea and Baltic Sea EEZ (Section 2.5).

In general terms, the following data bases are used for the environmental report:

- Data and findings from the operation of offshore wind farms
- Data and findings from approval procedures for offshore wind farms, submarine cables and pipelines
- Results of the preliminary investigations
- Results from the monitoring of Natura 2000 sites
- Mapping instructions for §30 biotope types
- Knowledge and results from R&D projects commissioned by the BfN and/or the BSH and from accompanying ecological research
- Results from EU cooperation projects such as Pan Baltic Scope and SEANSE
- Studies/ Technical literature
- Current Red Lists
- Comments of the competent authorities
- Comments of the (professional) public

A detailed overview of the individual data and knowledge bases is included in the Annex (Chapter 9) of the scope of the environmental assessment.

6.2 Indications of difficulties in compiling the documentation

According to No. 3a Annex 1 to § 8 (1) ROG, indications of difficulties that have occurred in compiling the information, such as technical gaps or lack of knowledge, shall be presented. There are still gaps in knowledge in some topics, in particular with regard to the following points:

- Long-term effects from the operation of offshore wind farms
- Effects of shipping and individual protection objectives
- Effects of research activities
- Data for assessing the environmental status of the various protected areas in the outer EEZ.

In principle, forecasts on the development of the living marine environment after the ROP has been carried out remain subject to a certain degree of uncertainty. Long-term data series or analytical methods are often lacking, e.g. for combining extensive information on biotic and abiotic factors in order to better understand the complex interactions of the marine ecosystem.

In particular, detailed area-wide sediment and biotope mapping outside the nature reserves of the EEZ is lacking. This means that there is no scientific basis for assessing the effects of the possible use of strictly protected biotope structures. Currently, sediment and biotope mapping is being carried out on behalf of the BfN and in cooperation with the BSH, research and academic institutions and an environmental consultant, with a spatial focus on the nature protection areas.

In addition, for some protection objectives there is a lack of scientific assessment criteria, both with regard to the evaluation of their status and with regard to the impacts of anthropogenic activities on the development of the living marine environment, in order to consider cumulative impacts in principle over time and space.

Various R&D studies are currently being carried out on behalf of the BSH on evaluation approaches, including those for underwater noise. The projects serve the continuous development of a uniform, quality-assured basis of marine environmental information for the assessment of likely impacts of offshore installations.

The environmental report will also list specific information gaps or difficulties in compiling the documents for the individual protection objectives.

7 Description of the individual assessment steps in the environmental report

The description and assessment of the state of the environment, the presentation of the likely development in the event of non-implementation of the plan and the assessment of the likely significant environmental effects are based on the designations of the MSP.

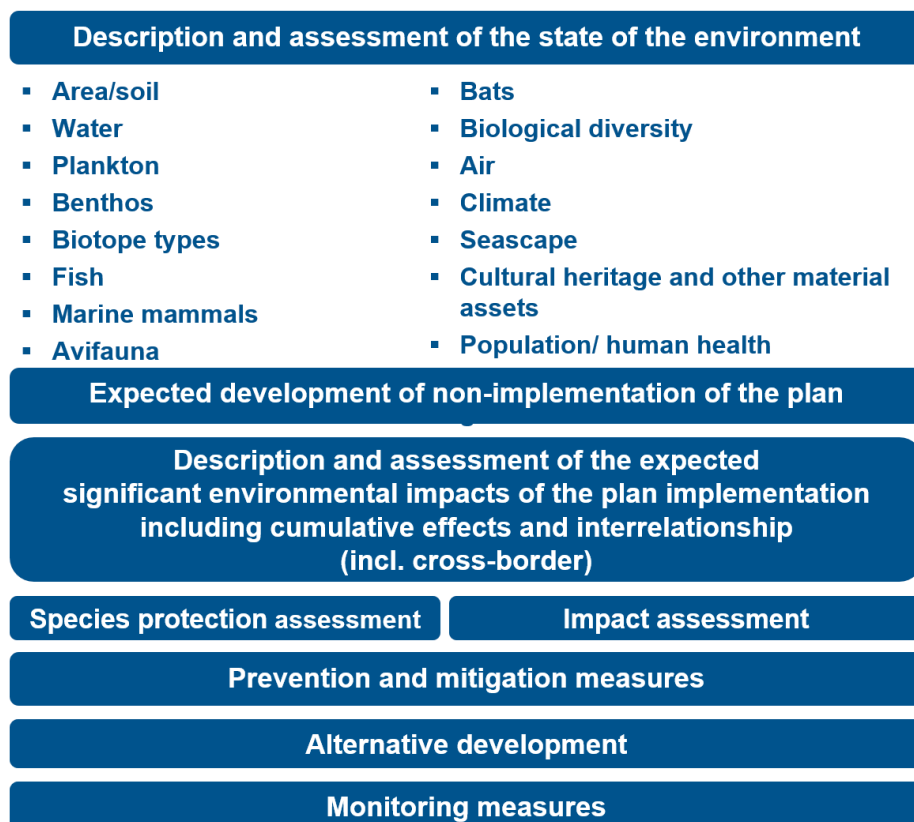


Figure 16: Components of the environmental report.

7.1 Description and assessment of the state of the environment

Pursuant to No. 2a Annex 1 to § 8 (1) ROG, the environmental report shall contain an inventory of the relevant aspects of the current state of the environment, including the environmental characteristics of areas likely to be significantly affected, including sites of Community importance and European bird protection areas within the meaning of the Federal Nature Conservation Act.

A description of the relevant aspects of the current state of the environment is necessary in order to be able to forecast changes in it as the plan is implemented. The subject of the inventory are the protection objectives listed in § 8 (1) ROG as well as interactions between them. The presentation is problem-oriented. Priorities are thus set for possible preload, environmental elements that are particularly worthy of protection and those protection objectives on which the implementation of the plan will have a greater impact. In spatial terms, the description of the environment is based on the respective environmental impacts of the plan. Depending on the type

of impact and the affected protection objective, the extent of these impacts varies and may extend beyond the boundaries of the plan.

7.2 Expected development in the event of non-implementation of the plan

For a comprehensive forecast of the environmental impacts associated with the MSP, it is also necessary to know how the environment would probably develop if the plan were not implemented (cf. No. 2b Annex 1 to § 8 (1) ROG). In the context of this assessment, it is particularly relevant that even without the revision of the plan, the uses within the EEZ would still exist, for example offshore wind energy would be expanded. This requires the fulfilment of the climate protection and energy policy objectives of the German government, for which the expansion of offshore wind energy plays a key role. The expected development in the event of non-implementation of the plan therefore includes a comparison with the environmental impacts with an identical time horizon without a revised MSP, but not a comparison of the environmental impacts of the plan with the current environmental status.

7.3 Description and assessment of the likely significant impacts of the implementation of the plan on the marine environment

The description and assessment of environmental impacts focuses on the protection objectives for which significant impacts cannot be excluded from the outset by the implementation of the MSP. Not taken into account are those protection objectives for which a significant impairment can already be excluded in the description and assessment of the status. All in all, the protection objectives listed in § 8 (1) ROG are examined before the assessments under species protection and territorial protection law are presented.

7.4 Species protection assessment

The environmental report also presents the assessment of the legal requirements for species protection.

Special rules with prohibitions apply to animals of specially or strictly protected species. Wild animals of specially protected species may not be injured or killed in accordance with § 44 (1) No. 1 BNatSchG. Wild animals of the strictly protected species and European bird species may not be significantly disturbed during the reproduction, rearing, moulting, wintering and migration periods according to § 44 1 No. 2 BNatSchG. A significant disturbance is deemed to exist if the disturbance causes the conservation status of the local population of a species to deteriorate.

It is irrelevant whether a relevant injury or disturbance is based on viable reasons, nor do motives, motivations or subjective trends for compliance with the prohibitions play a role (Landmann/Rohmer, 2018).

7.5 Appropriate assessment

The strategic environmental assessment also includes a separate assessment of the compatibility of the areas defined in the spatial plan with the protection purposes of the nature protection areas.

Where special areas of conservation or special protection areas may be significantly impaired in its elements relevant to the conservation or protection objectives, the provisions of the Federal Nature Conservation Act on the permissibility and implementation of such interventions, including the obtaining of the opinion of the European Commission, must be applied when drawing up spatial plans (cf.)

In the German North Sea EEZ there are the nature protection areas "Sylter Außenriff - Östliche Deutsche Bucht", "Borkum Riffgrund" and "Doggerbank", which were established by decree of 22.09.2017.

In the German Baltic Sea EEZ there are the nature protection areas "Pomeranian Bay - Rönnebank", "Fehmarn Belt" and "Kadet Trench", which were established by decree of 22.09.2017.

In principle, the construction of artificial facilities and structures in nature protection areas is prohibited. However, according to the regulations of nature protection areas, this does not apply to projects and plans for energy generation from wind and laying or the operation of submarine cables, subject to an admissibility review. These projects and plans are to be examined for their compatibility with the conservation objective from the respective regulation. They are permitted if, pursuant to § 34 (2) of the Federal Nature Conservation Act, they cannot lead to significant adverse effects on the conservation objective of the decisive elements of the nature protection area or if they meet the requirements pursuant to Article 34 (3) to (5) of the Federal Nature Conservation Act. Compatibility according to the BNatSchG must be examined in accordance with the test previously carried out for the Fauna-Flora-Habitat sites (FFH sites). With the designation of the nature protection areas, this examination now relates to the conservation objective of these nature protection areas.

The habitat types "reefs" and "sandbanks" according to Annex I of the Habitats Directive, certain fish species and marine mammals according to Annex II of the Directive (river lamprey, feint, harbour porpoise, grey seal and common seal) and various bird species listed in Annex I of the Birds Directive (*Gavia stellata*, *Gavia arctica*, *Larus minutus*, *Sterna sandvicensis*, *Sterna hirundo*, *Sterna paradisaea*, *Fulmarus glacialis*, *Morus bassanus*, *Melanitta nigra*, *Stercorarius skua*, *Stercorarius pomarinus*, *Larus canus*, *Larus fuscus*, *Rissa tridactyla*, *Uria aalge ibericus*, *Alca torda*). Species listed in Annex IV of the Habitats Directive, e.g. the harbour porpoise, must be strictly protected everywhere, including outside the defined protection areas.

7.6 Measures envisaged to prevent, reduce and offset any significant adverse effects of the site development plan on the environment

Pursuant to No. 2 c) Annex 1 to § 8 (1) ROG, the environmental report shall contain a description of the measures planned to prevent, reduce and offset any significant adverse environmental effects resulting from the implementation of the plan.

In addition, the designations of the MSP are subject to a continuous optimisation process, as the knowledge gained from the SEA and the consultation process is taken into account when revising the plan.

While individual avoidance, mitigation and compensation measures can be initiated at the planning level, others only come into effect during the actual implementation phase, where they are regulated on a project- and site-specific basis in the individual approval procedure. With regard to prevention and mitigation planning measures, the MSP lays down spatial designations and regulations of objectives and principles which, in accordance with the environmental objectives set out, serve to prevent or reduce significant negative impacts on the marine environment from the implementation of the spatial plan.

7.7 Measures planned to monitor the environmental impact of implementing the spatial plan

Pursuant to No. 3 b) Annex 1 to § 8 (1) ROG, the environmental report also contains a description of the planned monitoring measures. Monitoring is necessary, in particular to identify unforeseen significant impacts at an early stage and take appropriate remedial action. The monitoring measures shall be determined on the basis of the information in the environmental report.

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9 Annex

Data and knowledge bases

In addition to the overview of the data basis in Chapter 6.1, the following is a compilation of relevant documents that are to be used as a basis for the description and assessment of the environmental status in the study area and for the evaluation of the likely significant environmental impacts, the examination under area and species protection law and the examination of alternatives. This overview is a draft, it is explicitly not complete and not exhaustive.

- Data, expertises and reports from the operation of offshore wind farms
- Data, expert opinions and reports from approval procedures for offshore wind farms, submarine cable systems and pipelines
- Results from the preliminary area survey, e.g. study on bird migration in the Baltic Sea
- Results from the monitoring of Natura2000 sites
- Mapping instructions for §30 biotope types
- Knowledge and results from R&D projects commissioned by the BfN and/or the BSH and from accompanying ecological research
- Results from EU cooperation projects such as Pan Baltic Scope and SEANSE
- Project results FABENA, MSP-Trans, MSP-Int
- Studies/ Technical literature
- Current Red Lists
- Comments of the technical authorities
- Comments of the (professional) public

In detail:

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