RAHANDUSMINISTEERIUM

HENDRIKSON & KO

ESTONIAN MARITIME SPATIAL PLAN

Maritime spatial planning is a tool for the long-term planning of the use of the sea in order to ensure economic benefits resulting from the exploitation of marine resources as well as the value of the sea and coastal areas as socially and culturally important areas.

Upon maritime spatial planning, it has to be kept in mind that any human activity is based on the achievement and maintenance of the good status of the marine environment.

2021

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1. INTRODUCTION

The aim of the Maritime Spatial Plan (MSP) is to agree on the long-term principles of the use of the Estonian marine area in order to attain and maintain a good status of the marine environment and to promote the maritime economy. The plan identified the areas and conditions under which activities in the marine area could be carried out. During the preparation of the MSP, the synergies between the existing marine uses and the planned activities were considered. Assessment of their impact on the marine environment and the economy and the social and cultural impact of the activities was also carried out. The results of the impact assessment are reflected in the memorandum, (Summary Chapter 4.2), and a separate Impact Assessment Report has been prepared. The adopted MSP serves as a basis for decision-making by various ministries and agencies and also guides the activities of businesses, investors, local governments, and coastal communities. The MSP must be taken into account in the preparation of subsequent plans, in the admission of permits for different uses and in composing of national and local government's strategic development documents.

This document is the explanatory memorandum of the MSP. The memorandum explains the development of the solution (Chapters 2, 4), outlines the future trends, vision and spatial development principles of the marine area (Chapter 3) and provides guidelines and conditions for the future use of the marine area (Chapter 5). The memorandum provides general principles for the development of combined use in the Estonian marine area (Chapter 5.1) and explanations of terms used in the planning (Chapter 6). The spatial data of the MSP is reflected in the map application available on the website of the Ministry of Finance[1]. An action plan for the implementation of the MSP is attached as a separate annex.

[1] https://www.fin.ee/riik-ja-omavalitsused-planeeringud/ruumiline-planeerimine/mereala-planeering

2. STARTING POINTS

The Estonian MSP was drafted on the basis of both European and Estonian framework documents and substantive planning guidelines (see spatial layout 2.1). Directive 2014/89/EU of the European Parliament and of the Council establishing a framework for the MSP sets out the need to draw up a plan for the management of the intensified use of the marine area. The main principles for the use and protection of the sea are derived from the United Nations Convention on the Law of the Sea (UNCLOS). Achieving and preserving good environmental status of the marine environment is a cross-cutting principle stemming from both UNCLOS and the Convention on Biological Diversity, as well as from a number of EU legal instruments (in particular the Marine Strategy Framework Directive and the EU Strategy for the Baltic Sea Region).

In the Estonian legal space, the Planning Act, which entered into force on 01.07.2015, provides guidance for the preparation of the MPS. Effective and sustainable use of the marine area and Estonia's openness to the sea are emphasized in the national plan "Estonia 2030+" established by the Government of the Republic Order No. 368 on 30 August 2012. Marine use will also be guided in the long term by the strategic goals, reforms, and key activities of the country, which will be determined by the "Estonia 2035+" strategy.

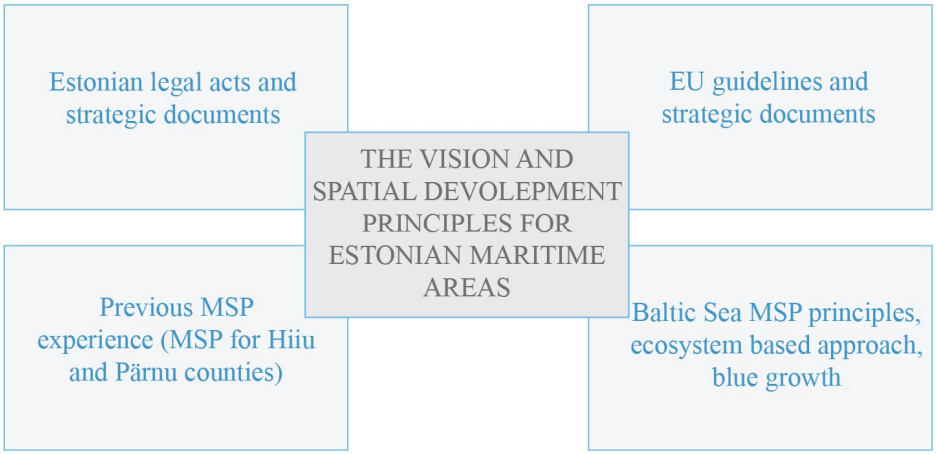
Maritime spatial planning is being conducted simultaneously in many countries around the world. The long-term use of the marine area in the European Union is based on the Integrated Maritime Policy (IMP) and its development program[2] along with guidelines such as the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the Committee of the Regions Blue Growth opportunities for marine and maritime sustainable growth[3]. Common principles[4] and guidelines for the implementation of an ecosystem-based approach[5] have been developed for comprehensive and well-considered planning of the Baltic Sea. As the Estonian representative, the Ministry of Finance regularly participates in the work of the European Commission and HELCOM-VASAB Maritime Spatial Planning Working Groups. The principles agreed in 2010 will contribute to the achievement of good environmental status in the Baltic Sea and thus enable the use of ecosystem services provided by the sea.

[2] https://eur-lex.europa.eu/legal-content/ET/TXT/PDF/?uri=OJ:L:2011:321:FULL&from=EN

[3] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52012DC0494

[4] http://www.helcom.fi/action-areas/maritime-spatial-planning/msp-principles

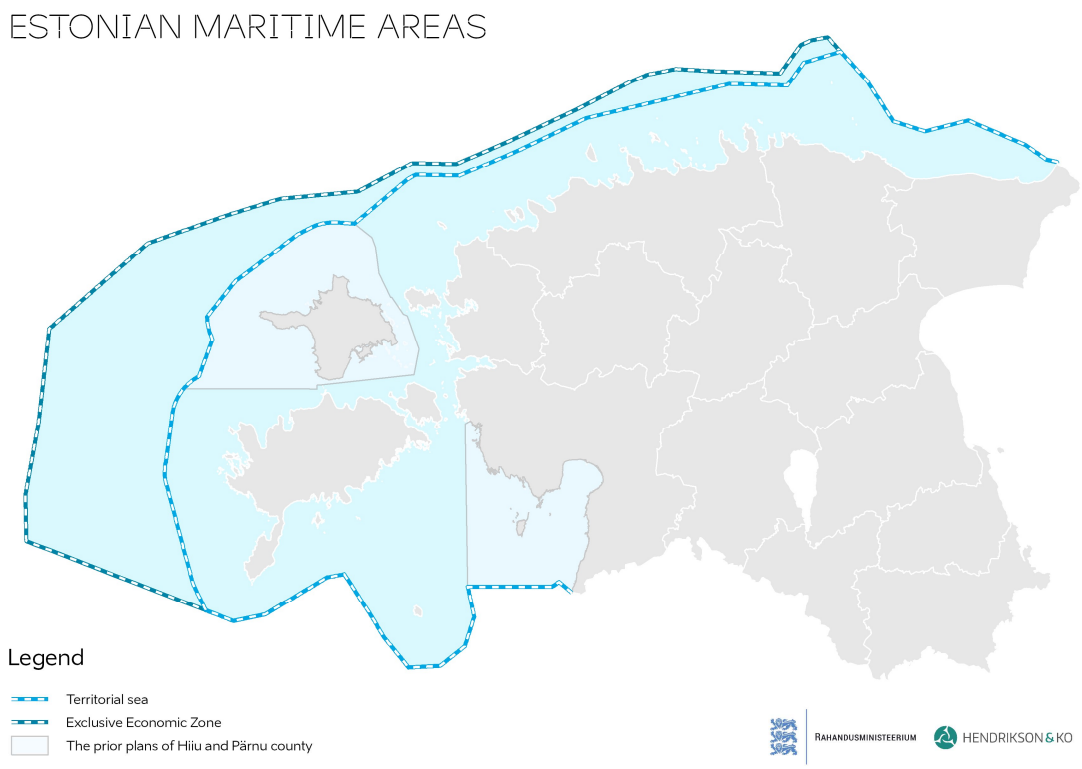
[5] http://www.helcom.fi/action-areas/maritime-spatial-planning/msp-guidelines/



Spatial layout 2.1 Starting points for Estonian MSP

The Estonian MSP covers the entire Estonian marine space: the internal waters, the territorial sea, and the exclusive economic zone (see spatial layout 2.2). In the MSP, land area is defined through the functional interactions (so-called land-sea interactions) (see Chapter 5.16)[6]. In order to ensure the implementation of maritime spatial planning, it provides general guidelines for terrestrial planning, for the national designated spatial plan, comprehensive and designated spatial plans for local governments, and for detailed spatial plans, as well as for decision-making related to marine uses.

[6] Land-sea interactions here and hereafter refer to activities that are performed at sea or on land, but which support land or sea activities, respectively. For example, fishing requires a land-based fishing port or landing place; in order to organize rescue at sea, land access to the sea must be guaranteed, and ports are essential for sea transport.



Spatial layout 2.2. Estonian marine space as an MSP area

The Estonian MSP is a strategic spatial development document on the national level, which plans the basic developments in marine space for the next 15 years or so. Therefore, the plan focuses on the principles of spatial development, and the activities are not planned on a detailed scale. The plan provides guidelines[7] and states conditions[8] for the next stages of planning the activities, including at the local government level. The planning solution was drafted on the basis of environmental considerations and the best available knowledge.[9] The inclusion of the best available knowledge is ensured by a broad-based expert group, cooperation with other countries, authorities and stakeholders, and further studies appropriate to the planning level.

As in many traditional uses (e.g., fishing, maritime transport), the rules of marine uses have predominantly been established; the plan focuses more on the combined use of the marine area and new uses of the sea. Guidelines are provided for all areas of activity to accommodate all different uses in the marine space.

For a more detailed description of the starting points for the MSP, including references to relevant documents guiding sectoral developments, see the Initial Outline for the Estonian MSP and the Memorandum of Intention to Conduct an Impact Assessment.

[7] Guidelines: general guidance from the plan, the following of which is desirable and based on the long-term vision of the marine area and the needs for combined use. Compliance with the guideline will be monitored by the authority responsible for the area. Deviations from the guideline must be made in collaboration with other involved or affected parties to ensure the full implementation of the planning solution.

[8] Condition - a requirement set by the plan, compliance with which is mandatory.

[9] The approach is based on EU Directive 2014/89/EU establishing a framework for the MSP, see also Planning Impact Assessment Report, Chapter 2.

3. MARINE AREA TRENDS, VISION AND PRINCIPLES FOR SPATIAL DEVELOPMENT

The Estonian marine area is characterized by the following long-term trends:

1. Use of marine area intensifies.
2. Improving the status of the marine environment requires close attention by all Baltic Sea countries.
3. New uses are emerging: renewable energy, aquaculture, infrastructure networks.
4. Traditional uses of the sea are diversifying. Potential permanent connections will be affecting passenger traffic. Recreational fishing and sailing are growing. The fishing sector is not an important employer, but it is an industry that values local resources. Recreational use is going to be more versatile.

Following an ecosystem-based approach, planning was based on marine area risk factors and cumulative impacts.[10]

The most significant negative anthropogenic impacts on the Baltic Sea are eutrophication, chemical pollution, overfishing of marine biological resources, and the spread of alien species. Particularly sensitive areas of the Baltic Sea are closed or shallow areas with limited water exchange. Climate change considerations can have a major impact. Poor environmental status can have significant negative economic impact on, for example, the maritime tourism-related economic sector, fisheries and aquaculture, and can lead to deterioration of human health and well-being.

The long-term vision of the Estonian marine area is:

The Estonian marine area has good environmental status, diverse and balanced use, and promotes the sustainable growth of a blue[11] economy.

[10] *Guideline for the implementation of ecosystem-based approach in MSP in the Baltic Sea area*

[11] Blue economy, including blue growth - sustainable maritime economy, covering all areas related to the sea: tourism, renewable energies, aquaculture, fisheries, biotechnology, use of seabed mineral resources, etc.

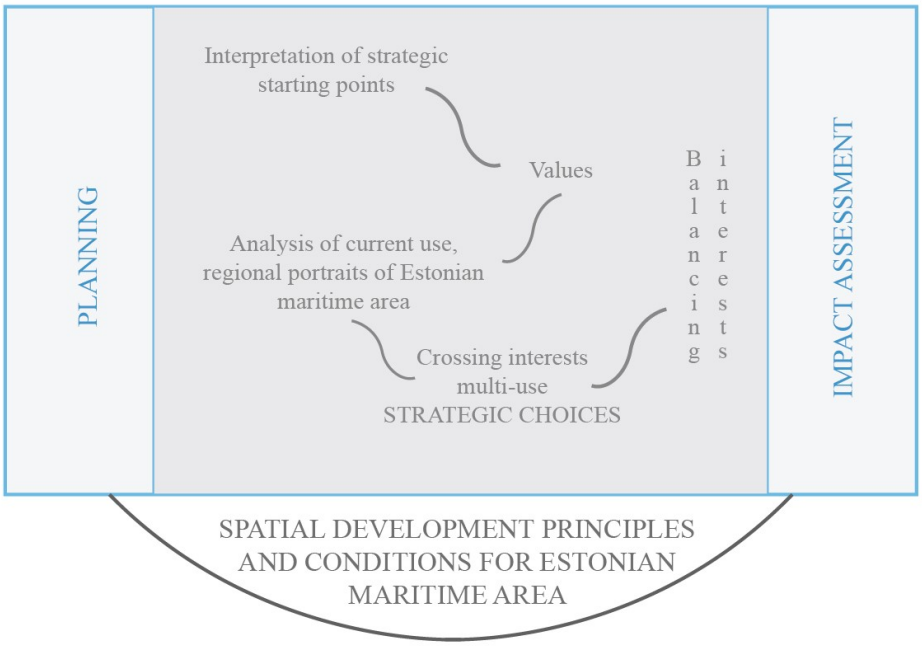
To achieve this vision, all traditional and new activities in the Estonian marine area must be based on an ecosystem-based approach (see also Chapter 4.1) and follow the following spatial development principles:

1. The Estonian marine area is characterized by synergistic combined use.
2. The use of the marine area must be diversified, favoring activities that are more suited to the region.
3. The marine area is used as a public good, including through ecosystem services.
4. Marine area related decisions are knowledge-based.
5. Cooperation and communication between states, authorities and stakeholders in decision-making on the use of the marine area takes place.

4. METHODOLOGICAL FRAMEWORK

4.1 A broad-based planning process

The development of the MSP was based on the generalized spatial layout below.



Spatial layout 4.1. Methodological framework of Estonian MSP

The methodological approach to planning is characterized by an ecosystem-based approach (see Chapter 2.1 of the Planning Impact Assessment Report for more details), which emphasizes the functioning of ecosystems and values broad-based expertise in both the know-how and interests involved.[12] In addition to the starting points described in the previous chapter, the solution was developed based on various baseline studies[13] and marine values mapped in the public discussions that took place in the coastal counties in June 2018. Values and interests, as well as existing usage and new directions, were brought together in a draft solution that was discussed with stakeholders and impact assessment experts. During the draft phase, issues related to the combined use of the marine area were also discussed (see Chapter 5.1). The maximum possible positive synergies have been sought in the design of combined use of the marine area. In the occurrence of conflicts and significant adverse impacts, an attempt was made to avoid overlapping incompatible uses. As a result of the discussions, the planning solution was refined. The solution was also updated based on the results of the impact assessment (see Chapter 4.2).

A detailed overview of the cooperation with authorities, stakeholders, and the public in the preparation of the plan and impact assessment is provided in Annex 3.

[12] see Helcom-Vasab guidelines for using an ecosystem-based approach in MSP.

[13] see http://mereala.hendrikson.ee/uuringud.html

4.2 Taking into account the results of impact assessment

Impact assessment of the MSP has gone hand in hand with the development of a planning solution. As a result, most of the planning guidelines and conditions were formulated, taking into account impact assessment considerations, already at the draft plan stage. After the draft was made public, the planning solution was updated, some baseline studies and a main solution were completed. Further proposals were made by the Impact Assessment Task Group on a comprehensive review of the main planning solution. Proposals were considered by the planners, and team experts were further consulted as necessary. The following table gives an overview of the main proposals that have been made during the impact assessment and how they have been taken into account.

Table 4.2.1 Overview of how the proposals made in the impact assessment have been taken into account in the planning

	Impact Assessment proposal	Taking account of the proposal
1.	Take account of ice conditions: 1. In view of the formation of ice cover and the movement of hummocked ice, it is essential to protect the planned submarine cables in the shallow coastal zone so that the ice cannot break the cable. 2. The design of facilities (type of wind turbine, fish farms, etc.) proposed in the marine area at the level of the licensing procedure must take into account the risk of ice conditions to ensure that the facilities are resilient to impacts. 3. At the level of the licensing procedure for the proposed activities, an assessment must be made of how the proposed activity, in combination with other similar developments, will affect changes in the ice cover and the movement of sea ice. Also, the impact of the activities related to the ice breakingactivities during the period of ice occurrence.	The proposals were accepted, guideline No 4 in Chapter 5.6.6, guideline No 3 in Chapter 5.7, condition No 13e in Chapter 5.3.1 and condition No 10c in Chapter 5.3.2 were supplemented. The subject was already reflected in Chapter 5.6.5, condition 12(h).
2.	Take into account spawning grounds for fish and benthic biota; include the obligation to carry out a more detailed assessment and study of the impact (both during the construction and dismantling phase) on fish fauna at the level of the superficies license, incl to the migration of fish. In order to mitigate impacts during construction, it is necessary to set a condition that noisy activities (e.g. installation of wind turbine foundations) are not to take place during the fish spawning season and in the fish spawning	The proposals were accepted, and the planning solution improved: - Guideline No 2 was added to Chapter 5.2 *Fisheries,* outlining a map of sensitive areas. - Guideline No 3 was added to Chapter 5.3.1 *Fish farming,* Sensitive areas for fisheries/Potential spawning areas up to 5 m depth were added in the spatial layout of areas unsuitable for fish farming.

	area, when large numbers of fish are concentrated in a limited area.	- In Chapter 5.6.4 *Wind Energy Guidelines and Conditions,* the condition 12 c was supplemented.
3.	Address the issue of biosecurity in fish farming.	The proposal was accepted, condition 13c was added to Chapter 5.3.1 *Fish farming*.
4.	Reduce wind energy development area No 1 in and around the migratory bird corridor, remove area No 3.	The proposal was accepted, and wind energy development area No 1 was reduced and area No 3 was removed.
5.	Supplement the conditions for wind energy on the basis of the expert assessment by the Estonian Ornithological Society from 2021: a. to provide that the minimum height of the wind turbine rotor above sea level shall be 25 metres, subject to the ancillary condition that this can be specified (increased to 30 or 35 metres if necessary) on the basis of a study to be carried out during the licensing procedure. b. At the stage of the licensing procedures of Area No 1 suitable for wind energy development in the Gulf of Riga, clarify the actual width of the migratory flow of terrestrial birds near the eastern part of the development area along the Kihnu-Ruhnu axis and identify other information necessary for the assessment of the risk of collision. Set a condition that a radar survey covering at least two years' bird migration periods shall be carried out in parallel with visual examinations. c. For Area No 2, west of Saaremaa, suitable for wind energy development, specify what proportion of all migrating terrestrial birds do not use the main migration route. Set a condition that a radar survey of birds covering at least two years' migration periods must be carried out in parallel with visual examinations. d. In the case of Area No 2, west of Saaremaa, suitable for wind energy development, taking into account the principle of combined use of marine areas, the principle passage corridor for shipping traffic should be specified, where possible, to better coincide with the expected predominant migration pattern of birds.	The proposals were accepted, condition 12 e of Chapter 5.6.5 *Guidelines and conditions for wind energy* was supplemented.

6.	In the context of the licensing procedure, the impacts will need to be clarified with the involvement of the necessary expertise and, if necessary, studies will need to be carried out in the marine area to be developed prior to the construction of the wind farm and, if necessary, mitigation measures will need to be implemented. Monitoring of bats should continue during construction and operation of the wind farm.	The proposal was accepted, condition 12 f of Chapter 5.6.5 was supplemented.
7.	The choice of different types of foundations and technologies for wind turbines must take into account and assess the environmental impact on the seabed and its biota during construction and dismantling.	The proposal was accepted, condition 12(c) of Chapter 5.6.5 was supplemented.
8.	Consider additional guidelines to mitigate the visual impacts of wind energy development: a. Explore the possibility of leaving/creating an area free of wind turbines in wind energy development area No. 2 looking from the three coastal sections of the west coast of Saaremaa, as well as in development area No. 1, looking from the northern tip of Ruhnu. b. for the wind farms closest to the coast (11.1 km), indicate that the design of wind farms of the same height is preferable. c. avoid the formation of small clusters of wind turbines on the periphery of the wind farm, which appear as isolated clusters from the main row of wind turbines. d. in the development of wind farms by different developers, it is recommended to use, wherever possible, regular formations to reduce the visual impact of the wind turbines. Creating a wheel effect should also be avoided, where possible. e. it is recommended that the need to take into account the synergies of wind farms is more explicitly stated in the planning. f. it is desirable to make it more explicit in the planning that the visual impact assessment should be carried out methodologically, in accordance with generally accepted developed guidance material and by a specialist. Visualisations must be truthful and verifiable.	The proposals were accepted, Chapter 5.6.5 *Guidelines and conditions for wind energy* was supplemented.
9.	Recommendation: As a result of the Natura assessment, plan the locations of the marine cables in the new proposed corridors to exclude impacts on Natura 2000 sites and their protection objectives.	The proposal was accepted. The locations of the principle cable connection corridors were specified based on the results of the impact assessment. In the development of wind farms during the superficies license

		phase, an alternative location for cable installation may be found, provided that it does not have a significant adverse effect on wildlife and adverse impacts on Natura 2000 sites and their conservation objectives. The establishment of a cable corridor at an alternative location does not require a new plan to be carried out, provided that the conditions set out in this plan are complied with and significant impacts on protected natural objects, including Natura 2000 sites, are avoided (Chapter 5.6.6, condition 2).
10.	Proposals resulting from impact on nature were taken into account when clarifying the wording of the conditions of the permit procedure phase. The wording of the wind energy and aquaculture development conditions were improved to minimise impacts on fish, birds and bats and benthic fauna.	
11.	Consider including a condition in the MSP, which also takes into account the interest of fishermen in applying for aquaculture permits: the most used and yielding fisheries would not be adversely affected. Consider including a condition requiring fishermen and local authorities to be involved in decision-making processes in order to increase synergies and prevent/mitigate conflicts in aquaculture development.	The proposal was not taken into account. The conditions already contained in the planning solution adequately protect the interests of the fishing sector, and it is not considered appropriate to impose additional conditions on the well-being of a specific group of marine users. Stakeholders may be involved in the permit application process.
12.	Further consider balancing the interests of the developer-current user and the developer-local government in terms of the permitting procedure, including the consideration of possible local benefit mechanisms in the planning.	The proposal was not taken into account. The introduction of additional balancing mechanisms in the plan is not considered appropriate as the permit procedure already allows for additional conditions to be imposed. On the basis of the proposal, the action plan for the implementation of the MSP was supplemented, including the need to develop local benefit mechanisms. For wind energy development areas, the obligation to involve the local government was imposed on the visual impact assessment (Chapter 5.6.5).
13.	Consider allowing for the combined use of wind farms and fish farms.	The proposal was already included in the planning solution, and was also highlighted in the chapter on fish farms (see Chapters 5.3.1 and 5.6.5).
14.	Consider the principle of enabling the combined use of aquaculture farms with renewable energy (e.g., solar and wave energy).	The proposal was partially taken into account. In the absence of specific solutions and regulations at present, a reference to the general possible direction of development was added to Chapter 5.6.1.

15.	Consideration should also be given in the functional classification of the purpose of new marine use service vessels - the needs of new branches in ports may differ slightly from those of established ones.	The proposal was not taken into account. It was not considered necessary to include the purpose of the new marine use service vessels in the functional classification of the ports as they are not so specific vessels.
16.	Consider adding a condition for wind farm cable corridors that requires cooperation with the National Heritage Board (to avoid damaging seabed cultural assets) and the Ministry of Defense (to identify potential historical explosives and hazardous objects).	The proposal was accepted. The need for co-operation with the National Heritage Board and the Ministry of Defense on the introduction of cabling was included in the planning (Chapters 5.6.6 and 5.7).
17.	Consider highlighting in the memorandum the importance of an international electric grid corridor that promotes the development of wind farms and/or indicate the need for direction in a spatial layout of possible cable connections.	The proposal was already in the plan. The development of the energy network is described in Chapter 5.6.6. Known trends are reflected in spatial layout No 5.6.6.1. In the spatial layout, the innovation area was connected to the Ventspils-Hall basic passage corridor.
18.	Consider encouraging the development of local small-scale distributed energy solutions (individual wind turbines, etc.).	On the basis of the proposal, the guidelines in section 5.6.1 were clarified. Precise solutions were not proposed in the current MSP because of the cost and complexity of local solutions at sea in the short term.
19.	Consider treating seabed cultural assets as a single chapter and include both cultural monuments and unprotected wrecks.	The proposal was not taken into account. Merging the chapters was not considered useful, as the National Heritage Board has previously requested information on national cultural monuments as a separate chapter. Maritime culture is concerned with wider activities, cultural assets are part of this and are covered as specific objects.
20.	Consider the need to improve conditions for the use of mineral resources in terms of other potential interests (including threats) (e.g., need for cooperation with the Ministry of Defense on historic explosives, etc.).	The proposal was not taken into account. The inclusion of additional conditions was not considered necessary as the existing legislation sufficiently regulates this area.
21.	Consider supplementing the memorandum with the introduction of more location-based land-sea interactions.	The proposal was accepted. Regional location-based land-sea interactions are included in Chapter 5.16 in the form of a spatial layout.

4.3 Superficies license applications in the marine area

Several superficies license applications have been submitted in the area covered by the MSP. The MSP was initiated by the Government of the Republic by Order No 157 on 25.05.2017. An Act to Implement the Building Code and the Planning Act (AIBCPA) provides for processing the special regulation for the applications for superficies licenses submitted before the entry into force of the Act, i.e., before 01.07.2015, providing that an application for a superficies license application submitted before the entry into force of the Act shall be processed in accordance with the legislation in force at the time of application.

Requirements for the procedure of superficies license (incl. initiation) are provided by the Water Act. The Water Act currently in force provides that initiation of a superficies license procedure shall be refused, inter alia, if planning has been initiated in the area applied for, and the planning procedure has not been completed (§ 221 (2) 2). The foregoing does not apply if the applicant for the superficies license agrees that the superficies license shall be granted for a term of one year after the establishment of the plan.

Several applications for a superficies license have been submitted before the commencement of the planning. The Water Act currently in force does not apply to them. Taking into account the provisions of the AIBCPA, the provisions of the Water Act applicable at the time of submitting the applications must be followed. The Water Act, which was in force until 30.06.2015, provided that initiation of the superficies license procedure shall be refused if county planning has been initiated in the requested area, and the planning procedure has not been completed. Thus, the ground for refusal to initiate proceedings in respect of the application for a superficies license submitted before 01.07.2015 is the fact that county planning has been initiated in the area, and its preparation has not been completed. The establishment of the MSP does not affect the initiation of the procedure for the superficies licenses. Similarly, the decision to grant superficies licenses on the basis of applications for superficies license submitted before 01.07.2015 shall be based on the legal regulation in force at the time of submitting the applications. The said regulation, i.e., the Water Act which was in force until 30.06.2015, provided that the superficies licenses shall not be issued if the conditions of the superficies license applied for are in conflict with the valid county-wide spatial plan – the regulation in force at that time did not provide for contradiction with the MSP.

Thus, the processing, including decisions of applications for a superficies license submitted before 01.07.2015, shall be carried out in accordance with the requirements provided by the legislation in force at the time of submitting the superficies license, in particular in the Water Act. They have no relation to the MSP, i.e., in their proceedings, there is no need to consider what is planned in the MSP. However, in order to achieve a balanced spatial design and good environmental status, it is desirable to follow the principles, conditions and guidelines set out in the maritime spatial plan. In the processing and deciding on applications for superficies licenses submitted after

01.07.2015, the principles, guidelines, and conditions set out in the MSP shall be taken into account. There is also a difference with regard to applications that were submitted after 01.07.2015, but the initiation of which was decided on before 25.05.2017, i.e., before the launch of the MSP. In these cases, the initiation of the procedure could not be refused on the ground that the planning on the site had been initiated, and the planning procedure had not been completed. However, when deciding on granting the superficies license, the provisions of the MSP must be taken into account if the maritime plan has already been established at the time of the decision.

4.4 MSPs for the marine areas bordering with Hiiu and Pärnu counties

The Estonian MSP was drawn up on the basis of the experience of drafting the MSPs for the marine areas of Hiiu and Pärnu counties. The solution of the spatial plans of the marine areas of Hiiu and Pärnu counties have been taken into account in the development of this solution and in the impact assessment. Because of the different preparation times and degrees of accuracy of the plans, there are differences in the output data. As a result, the approaches to the topics are partly different. For example, a more detailed methodology for dealing with water traffic areas has been developed for this solution in cooperation with the Transport Administration. Therefore, the spatial information related to the MSP for Hiiu and Pärnu counties and to the water traffic covered in this solution does not coincide. The existence of differences does not mean that the plans are in material contradiction or their implementation is impeded. All plans have been prepared in collaboration with the relevant authorities, and they reflect the best available information at a given point in time. Continued inter-agency cooperation is a prerequisite for a more comprehensive implementation of the plans. The MSP for Hiiu and Pärnu counties remains in force upon the establishment of the National Maritime Spatial Plan. The Supreme Court ruling of August 8, 2018, annulled the Hiiu Island MSP for wind energy development areas (Case 3-16-1472). For other topics discussed, Hiiu Island MSP is valid. The implementation shall take into account the provisions of the corresponding MSP.

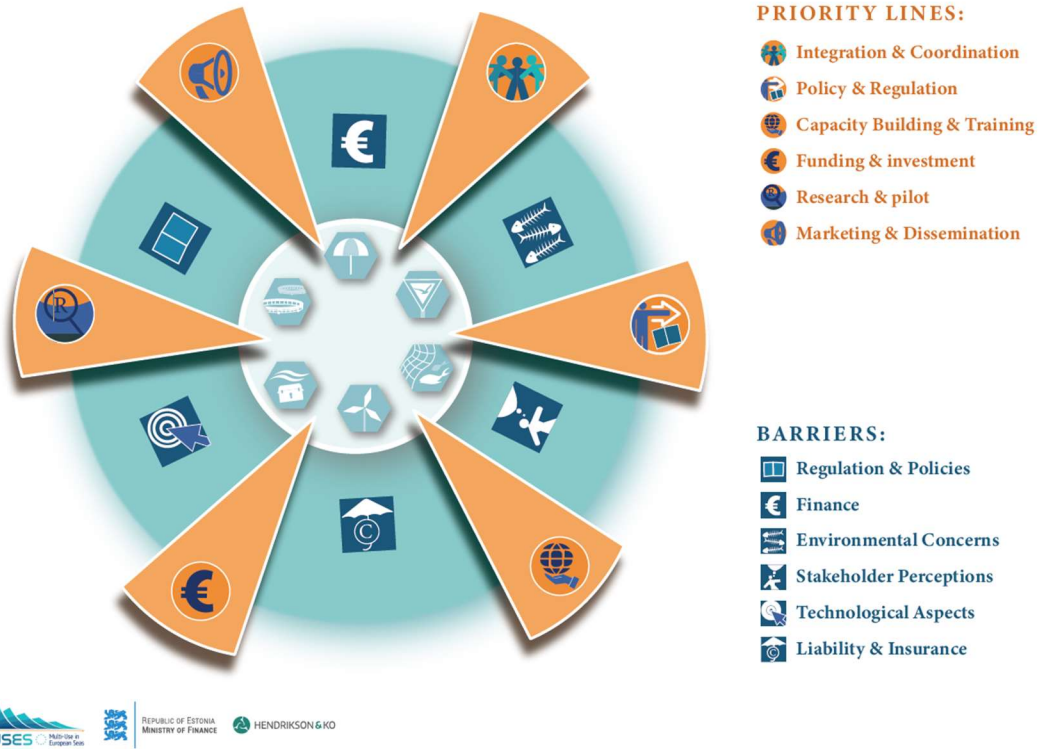
5. USE OF THE MARINE AREA

5.1 Principles of combined use of the marine area

The increasingly diverse use of the marine area necessitates accommodating a variety of activities into the marine space. Facilitating combined use reduces spatial pressure on the marine area. The aim is to share and sustainably exploit the sea as a resource and to enhance the positive synergies between different uses. As a result, the general guideline of this plan is to promote the combined use of the marine area wherever possible.

Combined use means the conscious joint use of the marine area within a single marine space, in geographical proximity. The term covers both the location of activities in the same sea area and the use of the same infrastructure.

The combined use of the marine area marks a turning point in the current way in which the sea is used. European guidance documents[14] emphasize that the deployment of combined use requires efforts from all parties involved (see spatial layout 5.1.1). The Estonian MSP is the first step in promoting combined use, the development activities of the combined use have been included in the action plan for the implementation of the MSP.



[14] vt https://www.msp-platform.eu/practices/ocean-multi-use-action-plan

Spatial layout 5.1.1 Recommendations and obstacles to the development of combined use of the marine area, based on the European Commission's MUSES project *Ocean Multi-Use Action Plan*

A pan-European approach[15] has been taken to promote the following combined uses of the marine area:

1) Tourism, fisheries and environmental protection
   The so-called fishing tourism, where tourists are introduced to fishing traditions on fishing boat trips. It provides additional income opportunities for fishermen and helps to promote an environmentally friendly attitude to fish stocks. Well developed, especially in southern Europe.
2) Tourism, underwater archaeological heritage, and protection of the environment
   Wreck visit for divers, which also introduces the marine ecosystem. It creates an additional source of support for heritage conservation and raises awareness. Widespread in the Baltic Sea and eastern Atlantic.
3) Tourism and aquaculture
   Boat trips, snorkelling, and diving near or in the immediate vicinity of aquaculture infrastructure. Provides an alternative source of income for aquaculture, raises awareness of local aquaculture products, and increases the tolerance needed to develop aquaculture. Currently operating on a small scale, predominantly in the Mediterranean and the Atlantic Ocean, popular in Malta and Portugal.
4) Wind energy and tourism
   Visits to offshore wind farms (unique wind turbine patterns can be an attraction), observation platforms built on wind turbines (rookeries for seals, resting place for divers, a restaurant). Helps mitigate resistance and provides economic benefits to nearby areas through additional attractions. Examples are found in the North Sea and the Baltic Sea.
5) Wind Energy and Fisheries
   Effective space sharing (setting conditions for fishing near wind turbines), sharing labor, and watercraft. Providing an alternative source of income for fishermen, e.g., for monitoring purposes, and relieves the conflict between the so-called New and Old Worlds. Examples from England, the Netherlands, and Denmark (fishing allowed between wind turbines).
6) Wind energy and aquaculture
   Use of wind turbine structures for fastening aquaculture infrastructure, or to develop new infrastructure solutions. Use of wind turbine areas for fish and/or shellfish farming that allows saving costs and directing farms deeper into the sea. There are only a few examples yet.

The first six combinations are also suitable for the Estonian marine area. However, the interactions of some uses may require concessions in development plans or significant changes in existing uses (e.g. wind energy and fisheries). The following combined uses do not directly fit into the Estonian marine area due to the nature of our sea, the

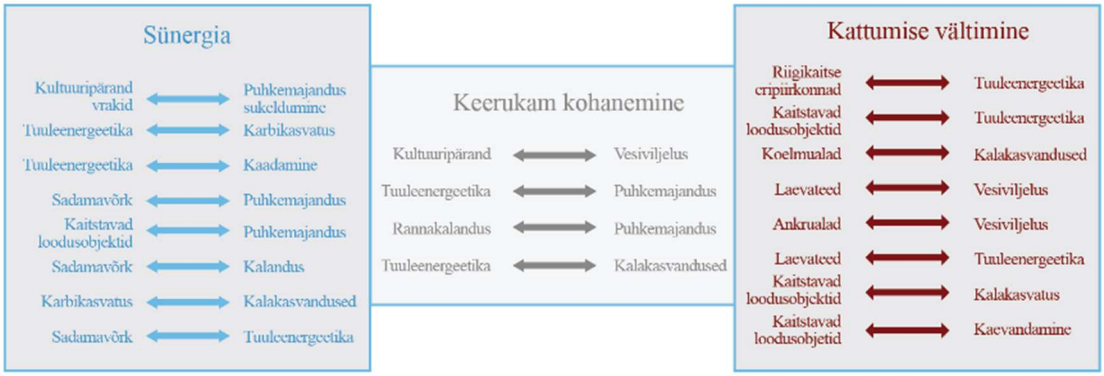
[15] European Commission MUSES project *Ocean Multi-Use Action Plan*, see https://www.msp-platform.eu/practices/ocean-multi-use-action-plan

resources used, and the state of the infrastructure, but they show potential for combined use elsewhere.

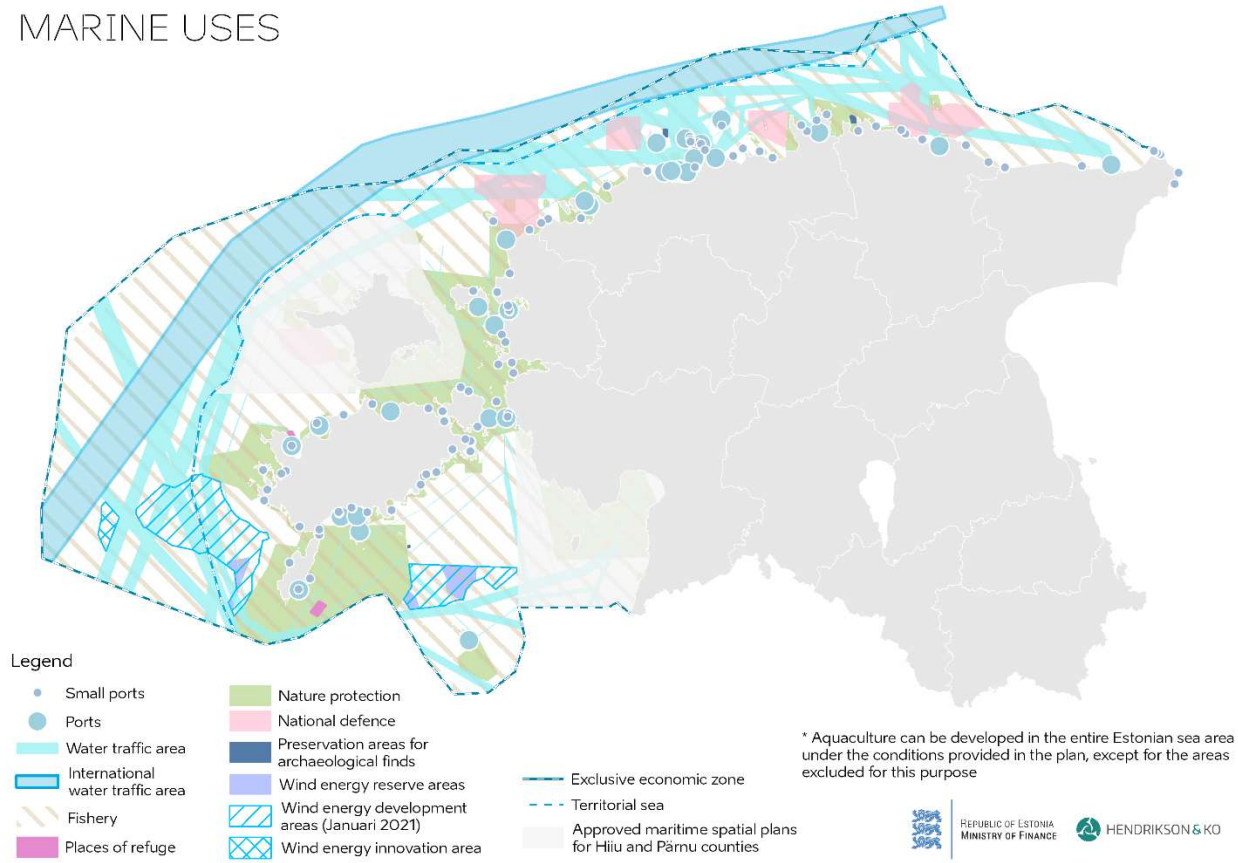
7) Recycling of oil and gas platforms
   Alternative (partial) reuse of disused platforms – artificial reefs; LNG platforms, aquaculture, or renewable energy infrastructure, that enables cost savings and sustainable use of the marine space with human impact. There are currently no examples, but development projects for oil and gas platforms in the North Sea and the Adriatic Sea have been prepared.
8) Wave energy and aquaculture
   Development of aquaculture farms and wave energy infrastructure physically linked or in the immediate vicinity, allowing direct use of wave energy on the farm – reduces associated costs. The first examples are based in Scotland.
9) Wind energy and wave and tidal energy
   Creation of a single renewable energy infrastructure in the form of specific physical platforms that can be used by different types of energy. Enables production of maximum energy per nautical mile, reducing installation and maintenance costs, and alleviates conflict between different stakeholders. The first development projects are underway in Scotland.

   .

All marine uses have their own character. Some uses of the sea are limited to a specific location; others cover the entire marine area; some uses exclude other uses, some work better with others (see spatial layout 5.1.2). The feasibility of combined use is further specified in the following chapters by the guidelines and conditions for the uses of the marine area. The combined use of the marine area is reflected in the planning solution in the spatial overlap between different uses (see spatial layout 5.1.3).



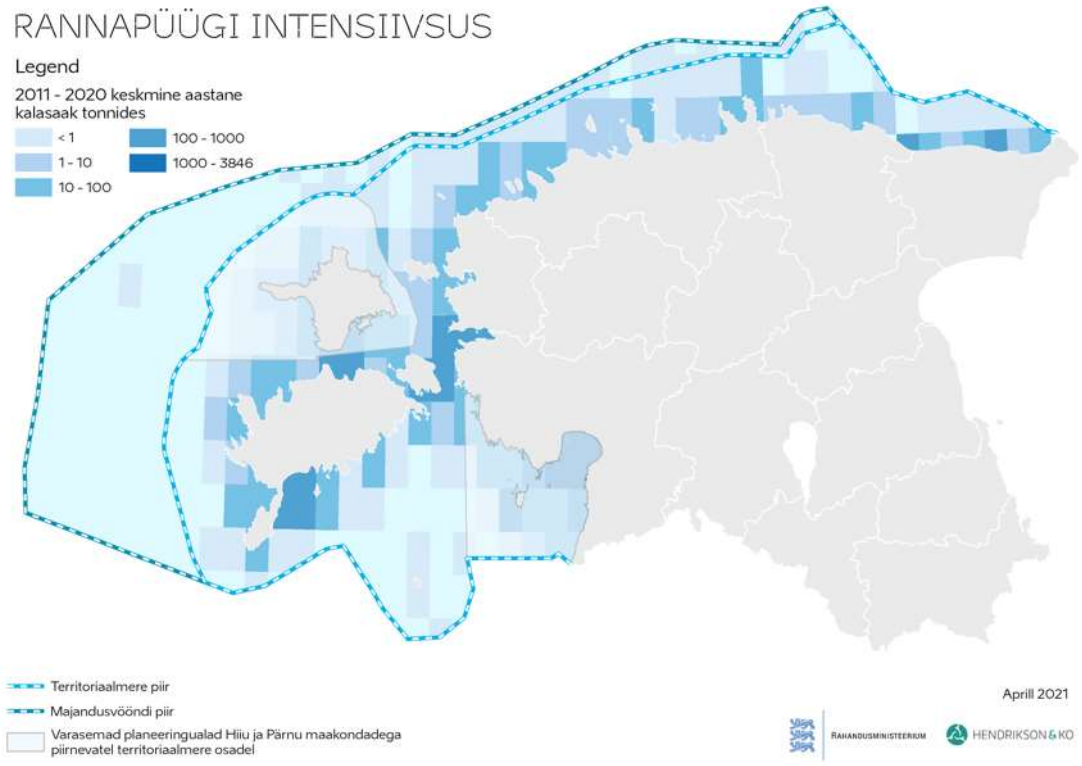
Spatial layout 5.1.2 Examples of interrelationships between different uses



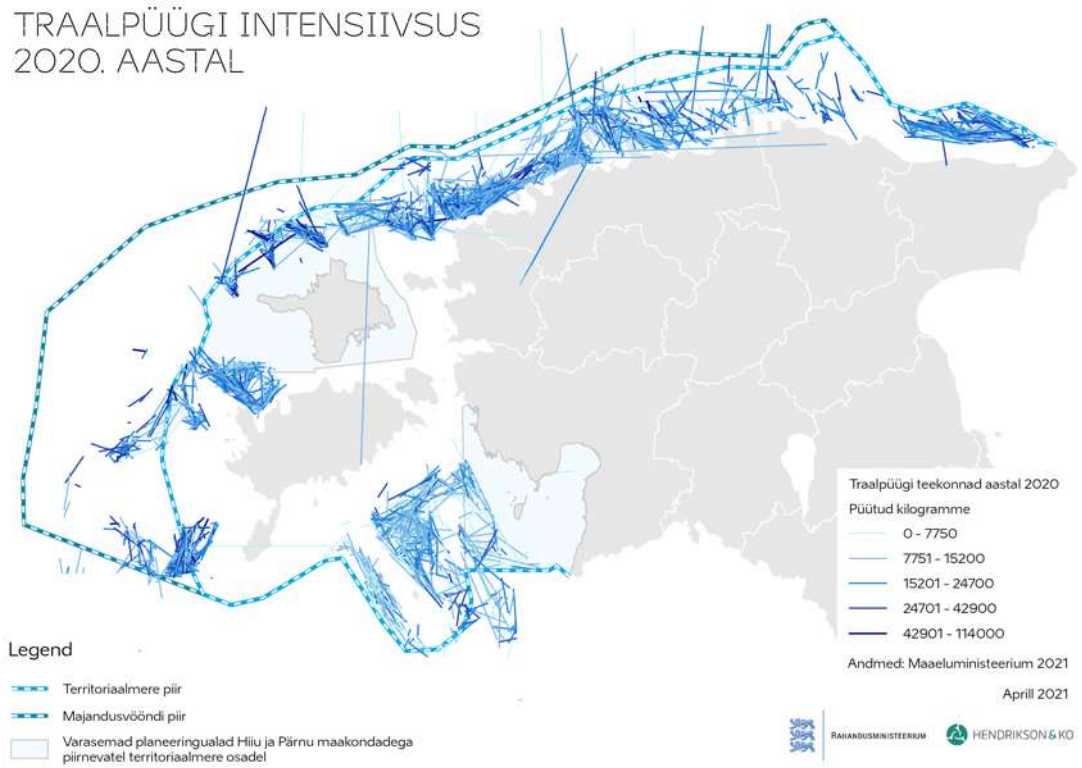
Spatial layout 5.1.3. Planning solution. The combined use of the marine area.

5.2 Fisheries

Fishing takes place throughout the Estonian marine area, except in areas with statutory fishing restrictions. Areas that are more heavily used for fishing are well-established and, to a large extent, are preserved by the combined use of the marine area.



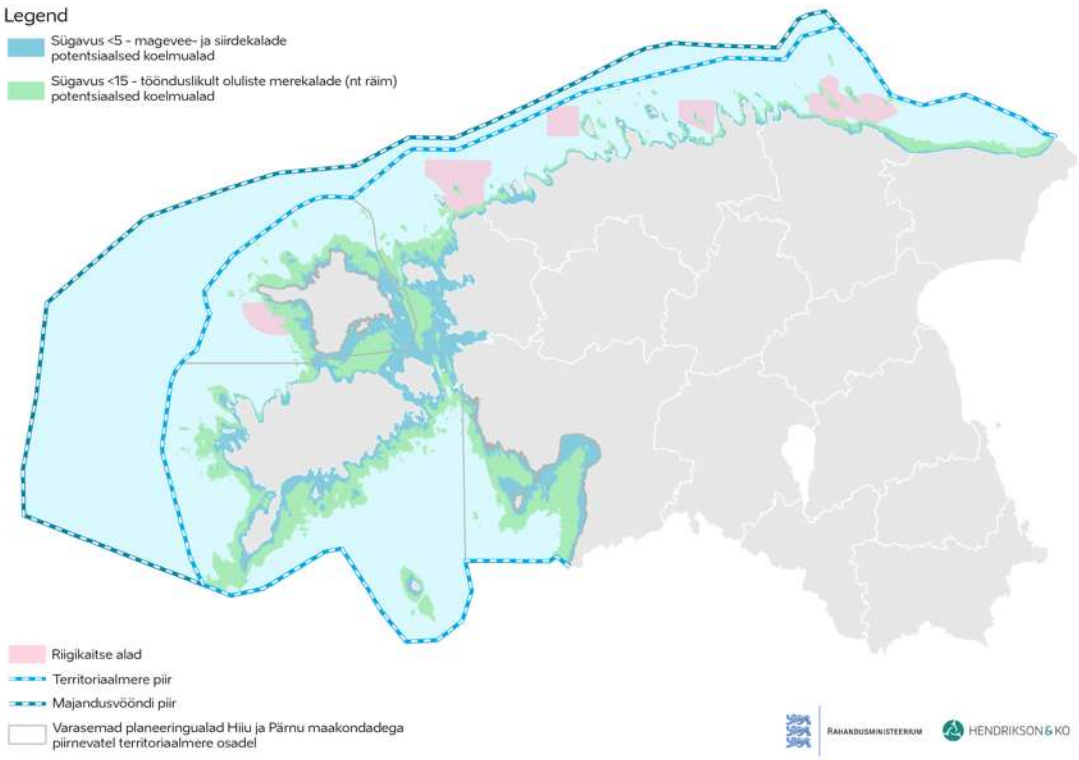
Spatial layout 5.2.1 Intensity of coastal fishing



Spatial layout 5.2.2 Intensity of trawl fishing

Guidelines:

1. Coastal and recreational fishing is more intensified in coastal and shallow-sea areas.
2. Preserve important spawning grounds for the natural recovery of fish stocks in the various marine areas (summarized in the spatial layout 5.2.3 below). The spawning grounds are areas that are more hidden from the waves in the coastal sea, especially in the Väinameri Sea, as well as at the ends of the peninsula (flounder) and the open sea shoals (autumn herring, flounder).



Spatial layout 5.2.3. Potential spawning grounds. Potential spawning grounds are shown in general, only depth of the sea is considered

3. Maintain/create open access to fishing areas (coastal fishing and trawl fishing), fishing ports, and landing sites for efficient exploitation of fisheries resources.

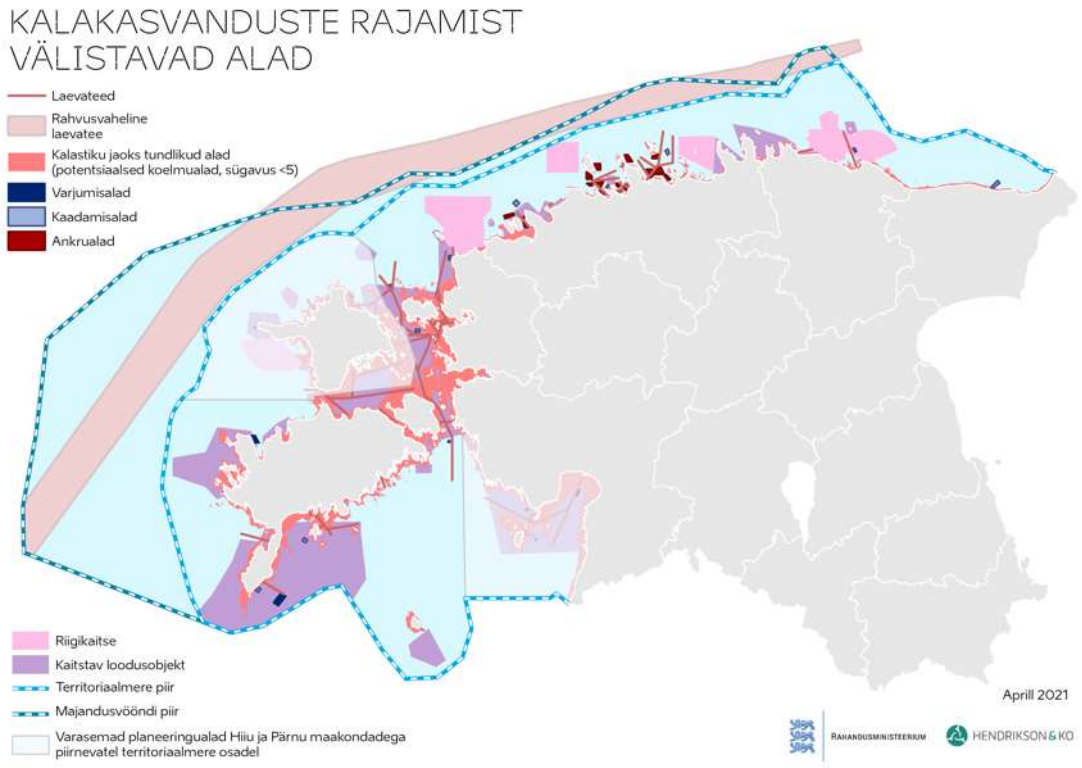
Conditions:

1. Trawling for fish (Baltic herring and sprat) is permitted in Estonia in marine areas deeper than 20 m. In shallower areas, trawling would damage the seabed and hence biodiversity.
2. When constructing harbors and bridges, developing aquaculture, constructing pipelines, wind turbines, dams, and heat pumps, dredging cables on the seabed or establishing other objects at sea, the permit procedure shall ensure that no significant long-term adverse impacts on fish spawning grounds would occur; if necessary, further studies shall be carried out.

5.3 Aquaculture

5.3.1 Fish farming

As a maritime country, Estonia has great potential for the industrial cultivation of fish in the marine area. The MSP does not designate areas suitable for fish farming, as offshore farm technology is in the process of development, and therefore the designation of suitable areas may unduly restrict the development of the blue economy, taking into account the environmental status. The establishment of fish farms is not allowed in unsuitable areas (see spatial layout 5.3.1.1 below).



Spatial layout 5.3.1.1. Areas not suitable for the development of fish farms, i.e. excluded areas

Guidelines:

1. It is desirable to favor areas outside the water traffic areas for fish farms. Co-operation with the Transport Administration is required to use up-to-date water traffic data
2. "Cluster solutions" are favored in aquaculture: combining a nutrient adding fish farm at sea with the nutrient-removing algae and/or shellfish farming in the same location or in a close-by area. Different types of aquaculture can also be developed separately and independently. In addition, wider cluster solutions through land-sea interactions (e.g., shared labor, use of common infrastructure, joint vessels, etc.) are favored. It is important to involve fishermen and other marine users in the maintenance of aquaculture facilities in order to alleviate the seasonal nature of sea-based employment.
3. Fish farms in wind energy areas are favoured in order to achieve positive co-benefits through spatial combined use of the marine area (co-location in the same marine space), possibly use of common infrastructure, etc.

Conditions:

1. The balanced development of fish farms is encouraged outside the areas that exclude fish farms (see spatial layout 5.3.1.1).
2. Fish farms will be established in deeper (> 5 m) and open sea areas to reduce the possible impact of pollution. In the open sea, nutrients are dispersed better due to the intensive movement of water, and deeper sea areas tend to have less affected biota (seabed habitats, fish spawning grounds, etc.).

3. The impacts associated with the establishment of a fish farm must be at an acceptable load for the state of the marine environment, if necessary, environmental measures must be implemented[16].
4. Fish farms cannot overlap with special areas of national defense.
5. Fish farms cannot overlap with fairways, including international ship traffic areas.
6. Fish farms cannot overlap with protected natural objects.
7. Fish farms cannot overlap with dumping areas.
8. Fish farms cannot overlap with anchorage areas.
9. Fish farms cannot overlap with the places of refuge for ships.
10. Fish farms cannot overlap with a cultural monument and the preservation area of an underwater cultural heritage.
11. Fish farms will be planned in cooperation with the Ministry of Rural Affairs, e.g. to take into account historical trawling areas.
12. When establishing a fish farm in the cable corridor, the risk of cable damage must be avoided[17].
13. When deciding the location and technological solutions of a fish farm at the level of permit procedure/Environmental Impact Assessment, it is necessary:
    a. to assess the impact on fish spawning grounds and the fishery on a larger scale, define the necessary mitigating environmental measures.
    b. to assess the impact on protected natural objects (including those being designed) if they are located within the area of influence of the activity. Significant impacts on protected natural objects and adverse impacts on Natura 2000 sites must be ruled out.
    c. to assess the biosecurity risks associated with different farm interactions[18]. To ensure biosecurity, a buffer must be left between fish farms[19].
    d. to assess the risks associated with the establishment of farms with regard to the distribution of alien species, genetic mixing of cultivated and wild species.
    e. to take into account the risk of ice conditions to ensure that facilities are resilient to impacts. Assess the impact of the proposed activities and possible icebreaking works on ice cover changes and sea ice mobility.
    f. to cooperate with the Ministry of Defense to determine the likelihood that historic explosives and other dangerous objects will be found in the area of interest.
    g. to cooperate with the owners of technical installations to determine the location and potential interaction of cables and pipelines.
    h. in case of overlap with the water traffic areas, specify the location of the fish farm and the functioning of shipping in cooperation with the

[16] As a result of the fish farm's activities, the state of the marine environment must not deteriorate if it is good or very good, nor must the fish farm prevent attaining at least good status in areas where the status is currently not good, or interfere with the objectives of the Baltic Sea Action Plan. *If nutrients and contaminants are added to the sea from the fish farm, they must be removed if necessary.*

[17] The submarine cable is shielded differently in different places. The risk is lower for recessed cables and/or cable covered with concrete slabs.

[18] Biosecurity refers to the need to prevent the introduction of pathogens and parasites from farms into the nature and vice versa, as well as the movement of pathogens and parasites between different nearby farms.

[19] The extent of the buffer depends on the specific circumstances (fish species, depth, technology).

Transport Administration, based on up-to-date data, assessing, inter alia, the impact on vessel traffic (among other things, assess the economic impact of longer travel distances and the increased level of risk associated with limiting and increasing traffic).

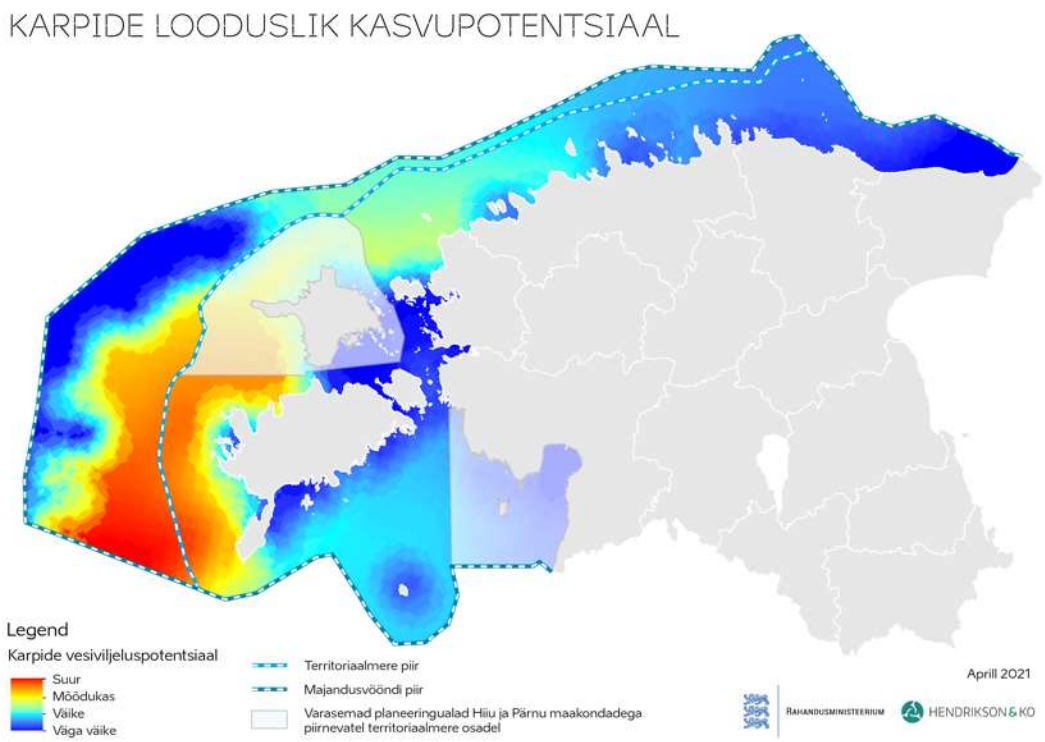
i. In case of overlap with underwater cultural heritage, specify the interaction in cooperation with the National Heritage Board, carry out an underwater archaeological survey if necessary.
j. In case of overlap with a mineral deposit, specify interaction in cooperation with the Land Board.

5.3.2 Shellfish and algae farming

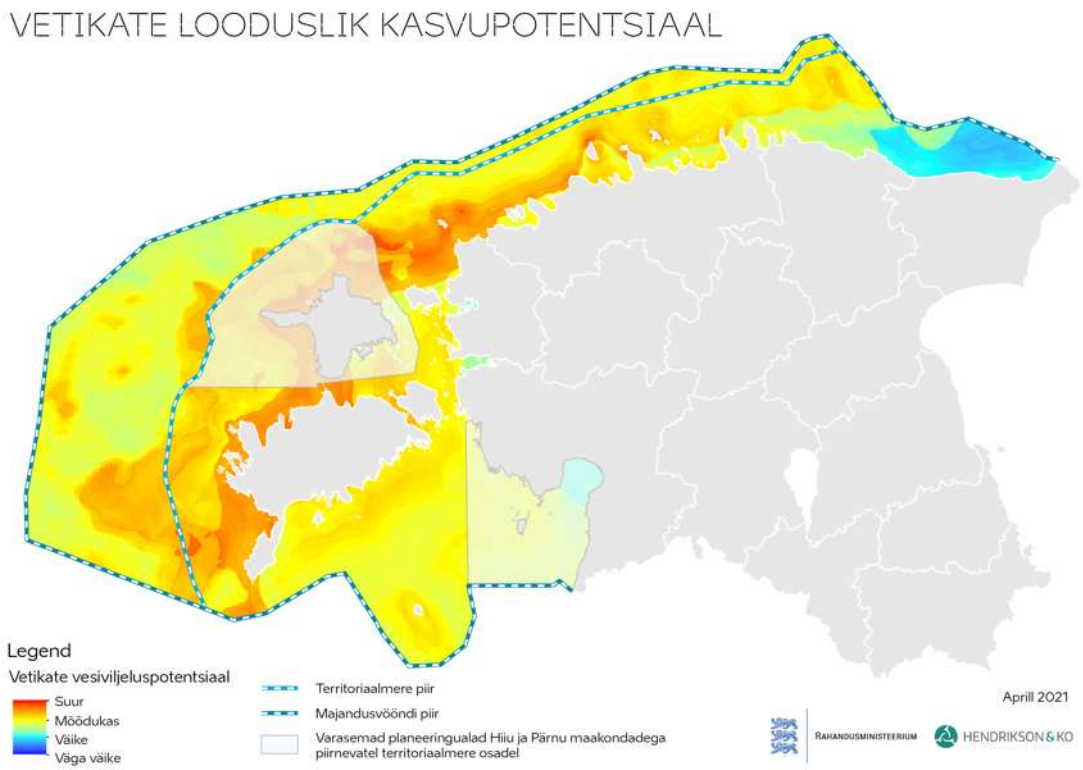
The Estonian marine area has great potential for the production of Mytilus (edible mussels). Based on current knowledge, mussels yield in the Estonian offshore with the best regional technologies are in the same range as the Danish straits, and the cost of production of large farms is expected to be economically competitive.

Based on basic marine area research,[20] the naturally most suitable areas for shellfish farming are mainly located in marine areas west of Saare County and Hiiu County. In addition, algae cultivation is from a natural point of view also promising in the Western part of the Väinameri Sea and the Gulf of Finland.

[20] The best available information on the physical and chemical characteristics of the marine area under study and on the seabed biota and habitats was used to identify areas suitable for aquaculture of invertebrates and algae and to determine the growth potential of the mussel. Identifying areas suitable for aquaculture modeled growth potential maps of the most important invertebrates and macroalgae species in aquaculture were used as input. The maps were prepared with the support of the EMFF project "Development of regional plans for aquaculture to manage possible environmental pressures". Modeling was revised in the summer of 2019. The survey can be found here.

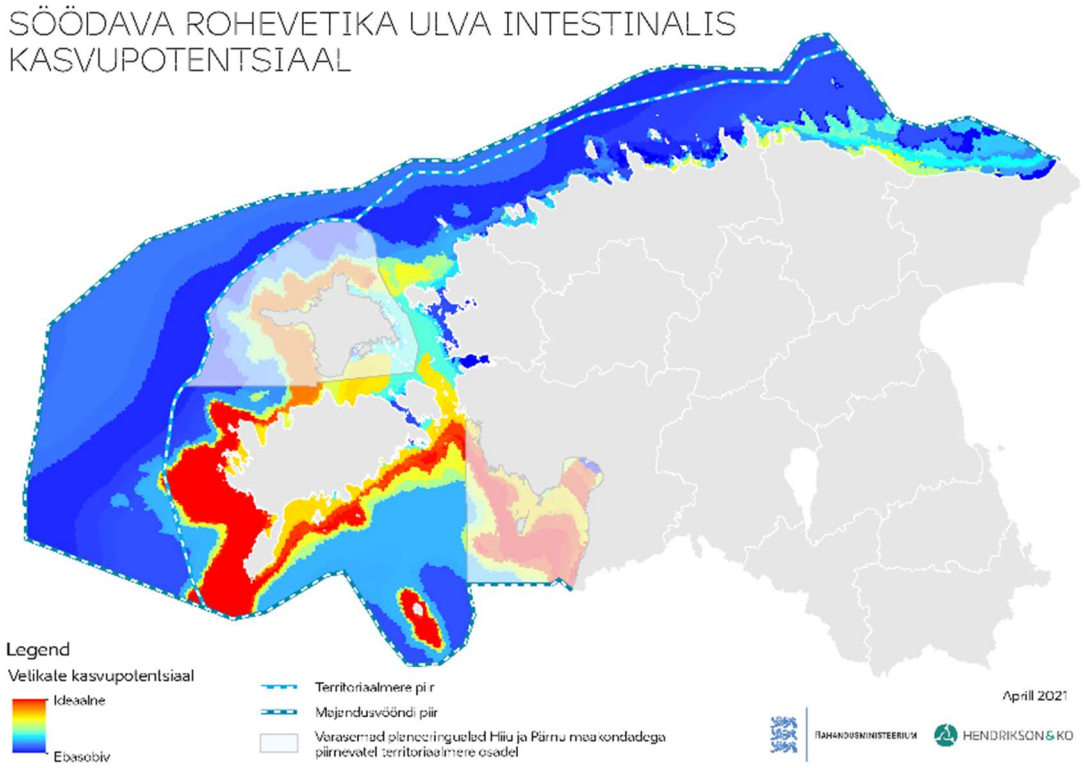


Spatial layout 5.3.2.1 Natural growth potential of shellfish



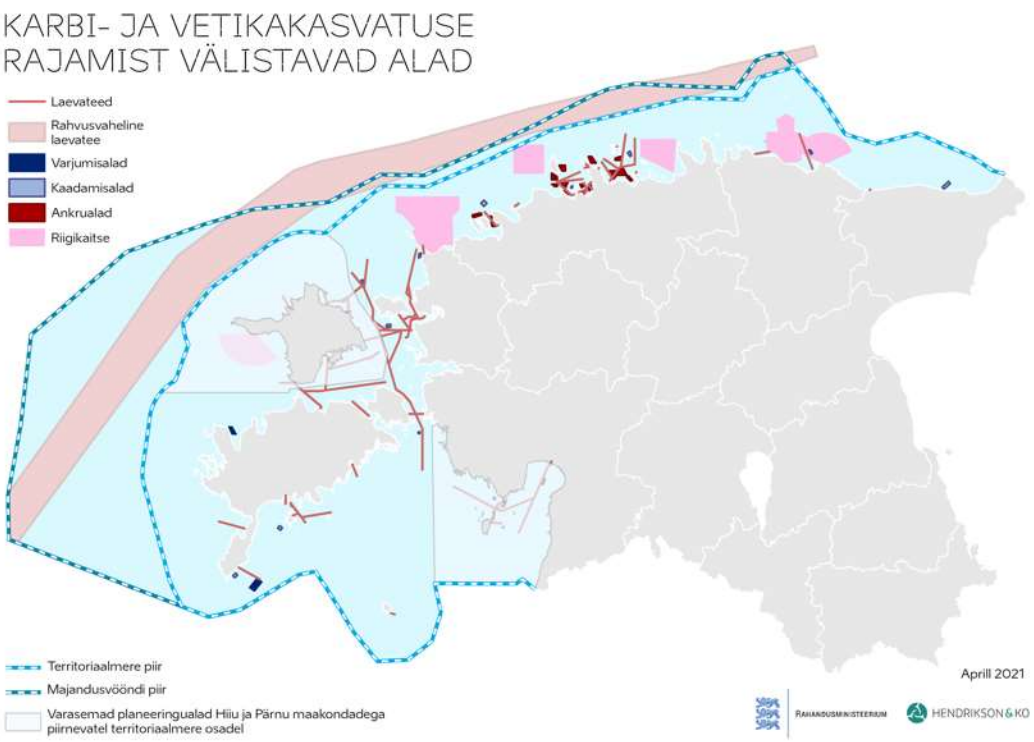
Spatial layout 5.3.2.2 Natural growth potential of algae

The most naturally suitable areas for the growth of the gutweed (*Ulva intestinalis*) are to the west and south of Saaremaa and in the Gulf of Riga, as well as around Ruhnu.



Spatial layout 5.3.2.3 Natural growth potential of gutweed (*Ulva intestinalis)*

Marine spatial planning maps the natural growth potential of algae and shellfish farming (spatial layouts above). The development of algae and shellfish farming is possible outside areas of high and moderate potential but may not be feasible there due to unfavourable growing conditions. Areas unsuitable for shellfish and seaweed cultivation are outlined in the following spatial layout.



Spatial layout 5.3.2.4 Areas excluded for the development of shellfish and algae production

Aquaculture, in particular shellfish farming, is expected to have a positive synergy with the establishment of wind turbines. The foundations of wind turbines are a growth medium suitable for shellfish and provide favorable solutions for fixing mussel lines.

Guidelines:

1. Encourage the balanced development of shellfish and algae cultivation in naturally suitable areas and outside the excluded areas (see the spatial layout above).
2. For shellfish and algae cultivation, it is advisable to favor areas outside the water traffic areas. Co-operation with the Transport Administration is required to use up-to-date water traffic data.
3. “Cluster solutions” are favored in aquaculture: combining nutrient adding fish farming at sea with the nutrient-removing algae and/or shellfish farming. It is also possible to develop algae and/or shell farming spatially separately from fish farming. In addition, wider cluster solutions through land-sea interactions (e.g., shared labor, use of common infrastructure, joint vessels, etc.) are favored. It is important to involve fishermen and other marine users in the maintenance of aquaculture facilities in order to alleviate the seasonal nature of sea-based employment.
4. Shellfish and/or algae cultivation in wind energy development areas is favored to achieve a positive synergy through the spatially combined use of the sea area (located in the same sea space), if possible the use of common infrastructure etc.

5. The use/production of renewable energy for the farm's own use is preferred in shellfish and algae farms, except wind energy development/production.

Conditions:

1. Shellfish and algae cultivation cannot overlap with a special area of national defense.
2. Shellfish and algae cultivation cannot overlap with fairways, including international ship traffic areas.
3. Shellfish and algae cultivation cannot overlap with the anchorage area.
4. Shellfish and algae cultivation cannot overlap with the dumping area.
5. Shellfish and algae cultivation cannot overlap with the places for the refugee of ships.
6. Shellfish and algae cultivation cannot overlap with cultural monuments and the preservation area of underwater cultural heritage.
7. When planning shellfish and algae cultivation in a protected natural site (including the one under design), the possibility of synergy is specified with the Environmental Board.
8. Planning shellfish and algae cultivation will be done in cooperation with the Ministry of Rural Affairs, e.g. to take into account historical trawling areas.
9. When designing shell and algae cultivation in the cable corridor, care must be taken to avoid the risks of cable damage[21].
10. When deciding the location and technological solutions of a fish farm at the level of permit procedure/Environmental Impact Assessment, it is necessary:
    a. to assess the impact on fish spawning grounds and the fishery on a larger scale, define the necessary mitigating environmental measures.
    b. to assess the impact on protected natural objects (including those being designed) if they are located within the area of influence of the activity. Significant impacts on protected natural objects and adverse impacts on Natura 2000 sites must be ruled out.
    c. to take into account the risk of ice conditions to ensure that facilities are resilient to impacts. Assess the impact of the proposed activities and possible icebreaking works on ice cover changes and sea ice mobility.
    d. to cooperate with the Ministry of Defense to determine the likelihood that historic explosives and other dangerous objects will be found in the area of interest.
    e. to cooperate with the owner of the technical installation to determine the location and potential synergies of cables and pipelines.
    a. in case of overlap with the water traffic area, to specify the location of the fish farm and the functioning of water traffic in cooperation with the Transport Administration, based on up-to-date data, assessing, inter alia, the impact on vessel traffic (among other things, the economic impact of longer travel distances and the increased level of risk associated with limiting and increasing traffic).
    f. in case of overlap with underwater cultural heritage, to specify interaction in cooperation with the National Heritage Board, if necessary to carry out an underwater archaeological survey.

[21] The submarine cable is shielded differently in different places. The risk is lower for recessed cables and/or cable covered with concrete slabs.

g. in case of overlap with a mineral deposit, to specify interaction in cooperation with the Land Board.

5.4 Maritime transport

5.4.1 Vessel traffic

Historically, ships have been the main users of marine areas. Based on navigation, very wide areas are used to navigate between ports – the choice of an optimal route depends on the size and type of the ship, hazards in the marine area, wind and waves, etc. New uses of the marine area may, in many places, be a constraint, necessitating alteration, narrowing, or redirecting of shipping lanes. This is reasonable in each case, taking into account the specificity of the location, the current pattern of traffic and the needs of new uses of the marine area of interest, and not restrict or divert ship traffic to narrower "passage corridors" where no competing interests exist.

The maritime plan shall reflect the fairways[22] published in the navigation information and shall determine water traffic areas[23] based on the volume of traffic and the main directions of navigation. In the rest of the marine area, ship traffic is scattered and rare. Vessel traffic is also permitted outside fairways and water traffic areas where the natural conditions, the size of the vessel, and existing restrictions allow and where it is necessary.

In places where fairway location is determined by natural constraints, in most cases, the designed, marked, and mapped fairways already exist, and changing their location is difficult or impossible. Compared to water traffic areas, fairways occupy a relatively narrow area, except for international ship traffic areas regulated by the International Maritime Organization[24]. Exceptionally, a fairway may overlap with other uses of the sea, but in this case, the preservation of the fairway and, where possible, the avoidance of additional restrictions to ensure the safety of water traffic, shall be a priority.

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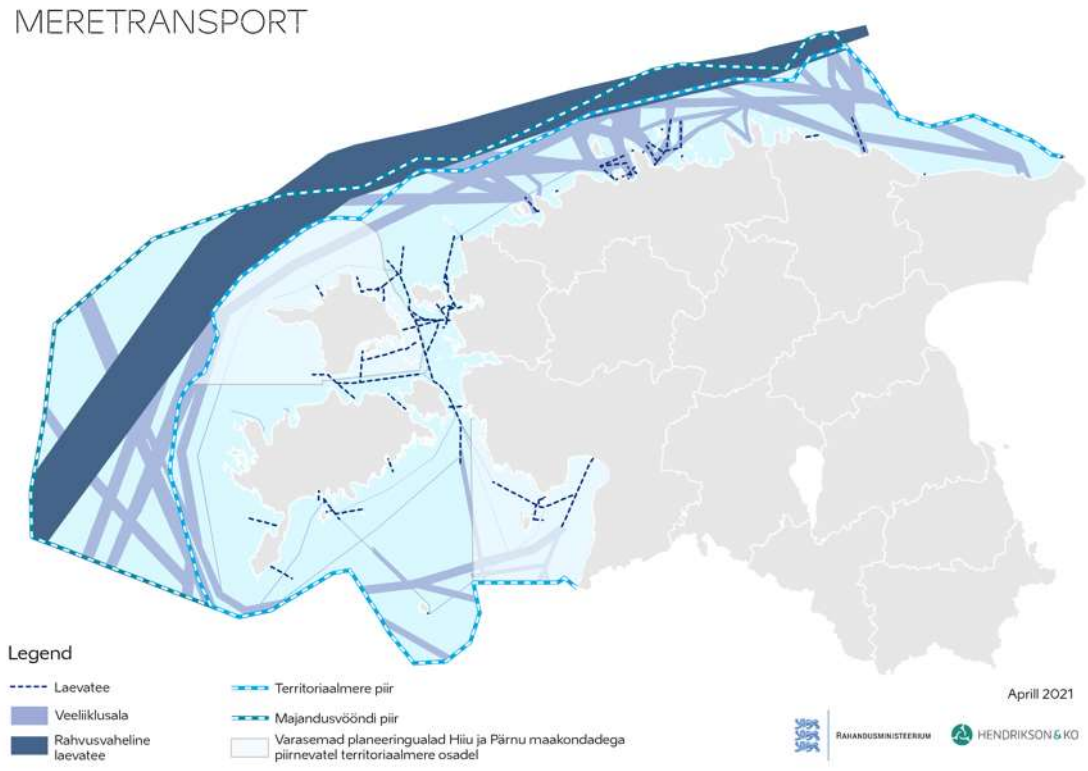
[22] For fairways of international importance with large ships and heavy vessel traffic, the area W is calculated by the formula W = Ws + 2 (Wr + Wc), where Ws is the lane width 4 ship lengths, Wc is the safety margin necessary for full collision avoidance 6 lengths of ship and Wr is the margin of 0.3 M necessary for the maneuver made to avoid collision.* The length of the ships has been analyzed on the basis of AIS data and the maximum length of 98.5% the ships moving in the fairways has been selected for the formula. On fairways which, in addition to the axis, have a fairway area published in the navigation information, the width of the fairway is the width of the fairway area and no safety margin is added. Fairways with only an axis published in the navigation information shall be 200 m or 400 m wide along the axis of the fairway, based on the largest vessels moving on the fairway.

[23] The water traffic areas are determined in cooperation with the Maritime Administration according to the following methodology. The axes of water traffic areas are determined by AIS footprints. For fairways of international importance with large ships and heavy vessel traffic, the area W is calculated by the formula W = Ws + 2 (Wr + Wc), where Ws is the lane width 4 ship lengths, Wc is the safety margin necessary for full collision avoidance 6 lengths of ship and Wr is the margin of 0.3 M necessary for the maneuver made to avoid collision.* The length of the ships has been analyzed on the basis of AIS data and the maximum length of 98.5% the ships moving in the fairways has been selected for the formula. Water traffic areas of local importance with shorter vessels (e.g., fishing vessels, ferries and recreational craft) have a width of 400 m or 200 m. For major ports that do not have fairways published in the navigation information, a 400 m wide water traffic area is designated according to the location of the AIS footprints (e.g., Saaremaa, Veere harbor). At the point where the water traffic area passes through a shallow or protection zone, the width of the area is reduced, taking into account the size of the vessels in the area. At the point where AIS footprints are fading and no longer run in one clear direction, the water traffic area is terminated.

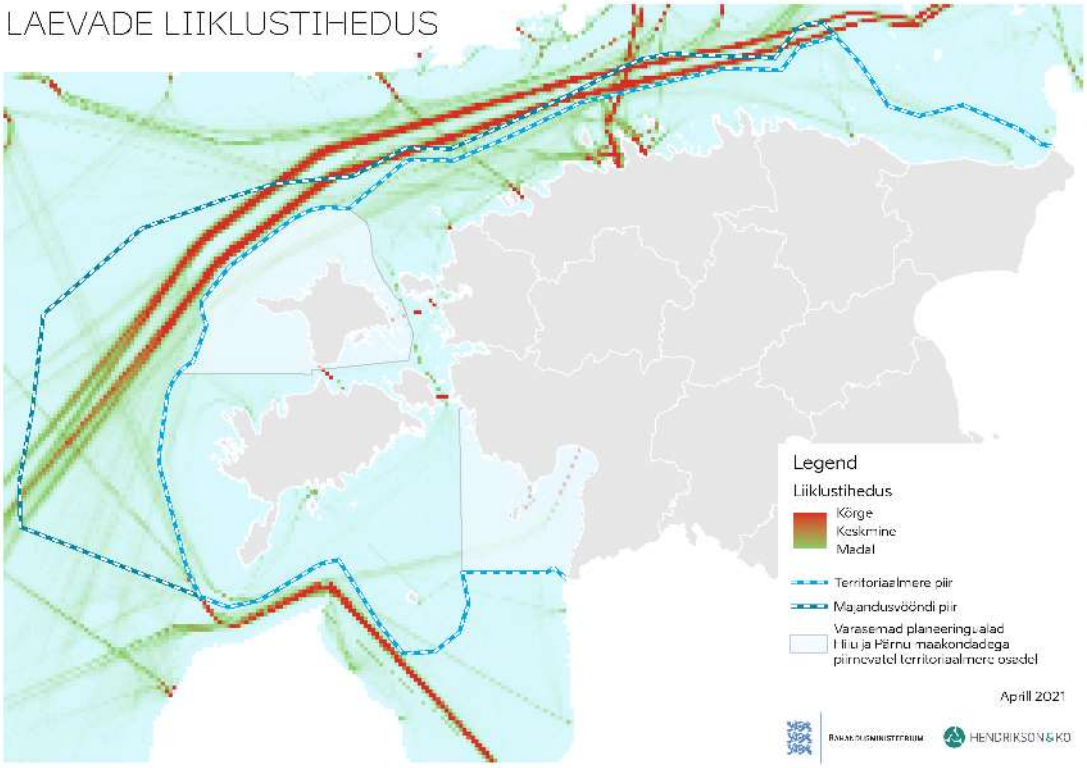
[24] The international ship traffic area is the area through the Estonian EEZ where there are vessel traffic management measures approved by the International Maritime Organization (IMO), with a safety margin added according to the methodology for determining the safety margin for a water traffic area. International ship traffic areas are considered equivalent to fairways in the context of the MSP.

The extent of water traffic areas usually leaves an opportunity for allocating space for other activities, leaving a sufficient margin for vessel traffic safety. Water traffic areas are thus designated, taking into account the need to allow other uses of the sea. For the purposes of this plan, water traffic areas may overlap with other uses of the sea.

The construction of new fairways takes place under the leadership (in public water areas) or with the approval (in port access roads) of the Transport Administration. Water traffic areas are explanatory information to planning, this plan will not be regulating the creation of new water traffic areas. When determining other uses for the sea in the future, the current traffic situation (based on the guidelines of the Transport Administration) and not the situation fixed at the time of planning (water traffic areas) should be taken into account at the permit procedure level and in the drawing up of subsequent strategic documents.



Spatial layout 5.4.1.1. Maritime transport

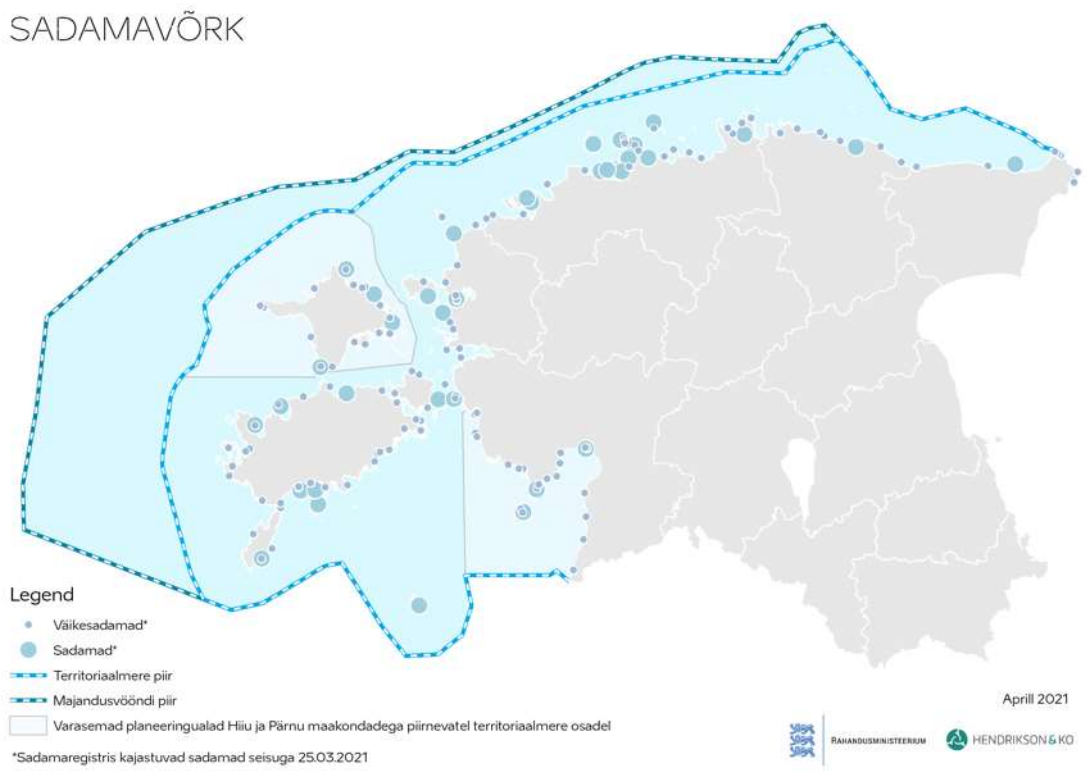


Spatial layout 5.4.1.2. Vessel traffic volume

5.4.2 Ports

In contrast to the deep waters of the Baltic Sea and the central Gulf of Finland, the Estonian coastal sea is mostly shallow and full of dangers. This requires proper signage of safe fairways and also imposing restrictions on the construction of ports. The most suitable harbors on the coast are already in use for this purpose. A naturally unfavorable harbor site, in particular, entails high costs (e.g., the need for repeat dredging to maintain the desired depth, the need for more abundant navigation signage, etc.). Although the network of cargo and passenger ports is largely developed, these ports are being expanded if needed. The network of small-craft harbors is developing, old harbors are being reorganized, and totally new small-craft harbors are being built.

The construction of new small-craft harbors and the reconstruction of existing ones are directly dependent on the existence of appropriate support programs, which make the bulk of large-scale investments. In addition to the new ports being built to complement the network of guest ports, a number of existing ports, whose facilities are coming to an end, will also require major investment.



Spatial layout 5.4.2.1. Port network

5.4.3 Ice roads

With suitable weather conditions, ice roads will be established in the Estonian marine area, which will facilitate the lives of the inhabitants of the islands and peninsulas and will also be tourist attractions. There are six official ice road routes in the marine area (Heltermaa-Rohuküla, Kuivastu-Virtsu, Tärkma-Triigi, Rohuküla-Sviby, Lao-Kihnu, Haapsalu-Noarootsi).

In addition to a cold winter, the formation of ice suitable for road construction depends on many other factors (ice quality, the thickness of snow cover on ice, water level fluctuations, etc.). In view of the increase in temperature during the winter months due to climate change, conditions suitable for the construction of ice roads tend to be less frequent. Maritime spatial plan does not spatially determine the location of ice roads. The exact location of the ice roads will depend on the particular winter ice conditions and will be determined by the Transport Administration.

5.4.4 Maritime transport guidelines and conditions

International ship traffic areas and local ship traffic areas, as well as the connection with the major and small islands, are important for the further development of maritime transport. The development is based on functioning transport infrastructure: a well-established network of ports with possible new small-craft harbors in naturally suitable locations. Ongoing attention to maritime safety is important.

Guidelines:

1. Water traffic areas may overlap in planning, for example, with wind energy development areas, aquaculture areas, and other uses of the sea. The location of areas with different uses will be specified at the permit procedure level, taking into account up-to-date water traffic data.
2. It is important to ensure the functioning of the established port network.
3. The aim of the intensification of the port network is:
    a. the construction of new small-craft harbors in naturally suitable locations, with suitable depths of sea and taking into account economic sustainability and safety to avoid disproportionately high environmental impacts and costs for dredging, protection from waves, etc.
    b. provision of primary port services for small vessels (the average daily distance of about 30 nautical miles, i.e., 6 hours traveling time with an average speed of 5 knots);
    c. the possibility of refueling motor yachts at a sufficient distance;
    d. creating safe mooring facilities to complement the network of guest ports.
4. With suitable weather conditions, ice roads will be established in the Estonian marine area, which will facilitate the lives of the inhabitants of the islands and peninsulas and enliven tourist activities.

Conditions:

1. Changing the location of fairways and imposing significant restrictions on water traffic should generally be avoided when planning other uses. The possibility of a change that is strictly necessary depends on the specific location and requires the approval of the Transport Administration.
2. Objects placed at sea shall not interfere with the distinction of navigational signs or lights for waterborne traffic and shall be marked in accordance with applicable regulations and international guidelines.
3. In order to ensure safe water traffic and the protection of objects, man-made objects (including fish cages, wind turbines, diving pontoons, etc.) must be marked in accordance with applicable legislation and international guidelines.
4. No aquaculture development area shall be established on the fairway or at the anchorage area to avoid damage to both the farm and the vessels.
5. Wind turbines shall not be placed on the fairway or at the anchorage area to ensure safety at sea.
6. When creating a new protected natural object, the spatial shape of the protected object shall, if possible, be adapted to the fairway. The process will involve cooperation with the Transport Administration and carrying out social and economic impact assessments to determine the impact on vessel traffic, including the economic impact of possible route extensions and the increase in the level of risk associated with traffic restrictions and increases.
7. Upon overlapping of the water traffic area with the wind energy development area the location of wind turbines and the functioning of water traffic will be determined based on up-to-date data in cooperation with the Transport Administration, assessing the impact on shipping (including the economic impact of possible route extensions and the increase in the level of risk associated with traffic restrictions and increases). In wind energy areas, basic

passage corridors for shipping must be kept free of wind turbines[25] (see the spatial layout No 11 and conditions in Chapter 5.6.4), to ensure smooth international freight transport and optimal length of the journey[26] and the need for turns[27].

8. When the water traffic area overlaps with existing protected objects, the interaction is based on protected natural objects and up-to-date water traffic data.
9. When the aquaculture development area overlaps with the water traffic area, the location and the operation of the vessel traffic will be specified based on up-to-date data in cooperation with the Transport Administration.
10. In the case of a conflict of interest between maritime transport and the establishment of a recreational area, co-operation with the Transport Administration shall be made in the preparation of the municipal comprehensive plan to ensure that both maritime transport and recreational needs are taken into account.

5.5 Maritime rescue, pollution response and guarding the state border

In the light of the intensification of the use of the marine area and the rapid growth of maritime transport, the functioning of maritime rescue and pollution response and guarding of state border are of great importance.

Maritime rescue needs are largely determined by land-sea interactions – the availability of ports and alternative vessel launching points, the availability of facilities for storing equipment in ports (response points), etc. The adequacy of these needs for the marine area of the region must be taken into account by the municipalities in the comprehensive plan, including in cooperation with the neighboring municipalities, since the coverage of marine areas by means of maritime rescue must be looked at over the whole water area and not at the municipal boundary, i.e., by the sections of the coastline. The volume of maritime rescue activities on land and at sea (including the number of members, number and density of response points, number of calls) is expected to be in line with and growing with the growth of the number of small craft as local traffic and maritime tourism progress.

From the point of view of the Estonian marine area as a whole, it should be borne in mind that although the resources required for disaster response (ships and equipment) are concentrated in the Tallinn area, the regional response capacity is primarily based

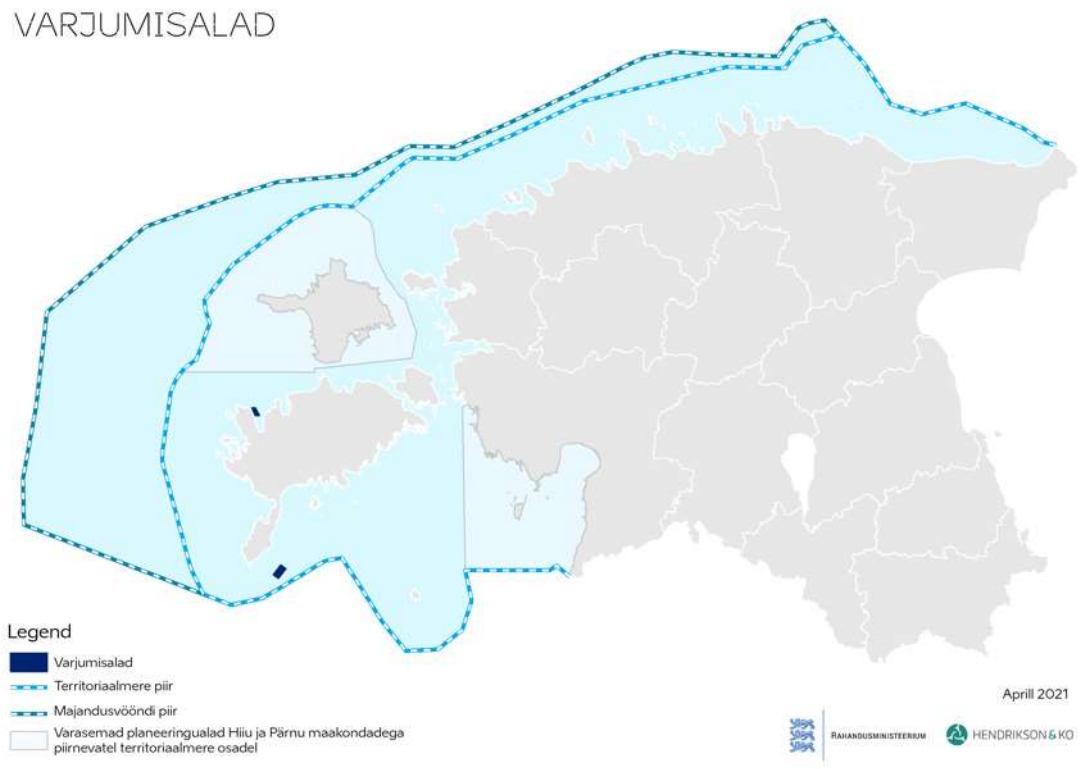
[25] In wind energy development area 2, there is a basic passage corridor for vessel traffic with a width of approximately 6250 m. The minimum breadth required for shipping is calculated according to the formula in footnote 21: W = Ws + 2 (Wr + Wc).

[26] When bypassing wind energy areas, the ship's voyage can be calculated to increase by 10 - 30 km depending on the destination and the time spent can increase by 0.5 - 1.5 hours. Depending on this, fuel consumption also increases, which is difficult to determine because it depends on the type of ship, the size of the cargo and many other factors.

[27] When bypassing wind energy areas, the ship has to make more turns compared to the existing directions of movement. Turning points should be avoided when designing fairways (*IMO, 2008, Ships' routeing, section A chapter 6 clause 6.4*), (*PIANC, 2014, MarCom Wg 121 Harbour approach channels design guidelines, chapter 3.1.2.1*), as they reduce the safety of vessel traffic.

on port pollution response duty (insofar as they are the risk sources) and portable pollution response containers of the Police and Border Guard Board. A regional response capacity is also needed to address the growing awareness of the so-called "sea litter." In the case of the sea litter washed to the shore, the main measure is removing litter from the shore and preventing new litter from being carried from the shore to the sea.

Places of refuge have been designated by Government Order No 529 of 18.08.2005 to ensure the safety of water traffic navigation, protect the marine environment and facilitate rescue at seaports and water areas to which a ship in distress or a ship which seeks to avoid getting in distress is directed, for example, until weather conditions or other hazards to shipping are eliminated. The ship is directed to the place for refuge by the Police and Border Guard Board.



Spatial layout 5.5.1 Places of refuge

Guidelines:

1. It is important to increase pollution control capacity at both the national and regional levels.
2. It is important to be aware of the growing problem of marine litter washed onto the shore.

Conditions:

1. It is necessary to ensure that vessels can be launched for maritime rescue purposes.
2. The activities carried out and planned at sea must not interfere with the operation of maritime surveillance radars.

3. Aquaculture development areas cannot overlap with a place of refuge for vessels in order to avoid damage to both the farm and the vessels in distress.

5.6 Renewable energy production

The development of renewable energy will minimize the environmental impact of the energy sector, strengthen energy security, and increase the competitiveness of the economy. The "Basic Principles of Climate Policy until 2050" aims at a gradual increase in the use of renewable energy sources in all sectors of final consumption. Estonia's National Energy and Climate Plan[28] plans to reach 42% of total final energy consumption (~50% of final energy consumption) from renewable energy by 2030. According to the Communication "National Energy and Climate Plan 2030", which specifies and complements the Energy Roadmap 2030, the offshore wind potential is 7000 MW.

Wind is the main potential source of energy in the Estonian marine area. This is supported by both strategic development documents and the Supreme Court, which in its decision No 3-17-2013 of 26.05.2021 found that the production of renewable energy is an important public interest and serves the goals of sustainable use of natural resources and sustainable development. When considering the possibilities of wind energy production, the renewable energy production targets set by the state must be taken into account. It is also worth paying attention to the use of the coastal sea adjacent to densely populated areas for cooling and thermal energy, as well as hydrogen production. Also, in exceptional cases (e.g., for the own use of aquaculture facilities) and in the future, floating solar plants and wave energy solutions may be worth considering. In the longer term, an important development trend could be distributed energy[29], which enables coastal communities, for example, to develop energy solutions that meet their needs.

5.6.1 Guidelines for renewable energy production

Guidelines and conditions for wind energy development areas are given in Chapter 5.6.5.

Guidelines:

1. The Estonian marine area must be used for the production of renewable energy. In the near future, the focus will be on developing wind energy (see Chapters 5.6.2 – 5.6.6).
2. In the longer term, it is expedient to consider wider opportunities for renewable energy production (e.g., hydrogen, solar and wave energy) throughout the Estonian marine area. The need to draw up a plan for wider renewable energy production capacity will be determined by the legal framework in place at a given time.
3. In the longer term, the development of distributed energy in the marine area, which will allow coastal communities, for example, to develop distributed energy solutions that meet their needs, may also be appropriate. The need to draw up a plan for the development of distributed energy will be determined

[28] Vt https://ec.europa.eu/energy/sites/default/files/documents/ee_final_necp_main_ee.pdf

[29] Distributed energy - the production of electricity generated at the consumer's site in micro- and mini-generation and heating plants located in isolated and dispersed locations

by the legal framework in place at a given time, including taking into account the spatial impacts of the proposed site.

5.6.2 Starting points for wind energy development

Long-term planning for wind energy needs to take into account the rapid evolution of the technology. Wind turbines are increasing in size, both in tip height and, even faster, in rotor diameter. The capacity of wind turbines is also increasing and could reach 20 MW by the end of the planning period. Both the capacity and the other parameters of the wind turbines will depend on the specific location and siting, as well as on the timing of their realisation. It is likely that the realisation of the wind energy areas proposed in this plan will result in a situation where different wind turbines are located close to each other. In different wind farms, the height of the tips of the wind turbines, the rotor diameter and the distances between the turbines may vary. It is expected that the wind turbines will initially be sited in a shallower sea, with lower tip heights (at the beginning of the planning period) and closer spacing. In a later phase, more powerful and taller wind turbines are expected to be installed, with greater spacing between turbines. However, as the distance between the turbines will remain linked to the rotor diameter (see below), the change may not be noticeable in real space (i.e. the arrangement of the turbines will not be noticeably sparser). The planning solution has been developed on the basis of international experience, expert opinion and the assessments of wind energy developers[30] in order to identify suitable sites for wind energy development. On the basis of the recommendations of the Planning Expert Group, the following indicators have been used as a basis for the development of the solution, including the impact assessment:

- The **tip height of the wind turbine** is in the order of 300 m.
- The **rotor diameter** is in the order of 250 m.
- The **wind turbine foundation** shall be of the gravity-based foundation technology type or similar in its impacts. The expected diameter of the foundation is less than 100 m (probably 60 m).
- **The spacing between wind turbines in a wind farm** is between 4 and 7 rotor diameters, with a minimum of 800m.
- **The minimum spacing between wind farms[31]** will be approximately 8 rotor diameters of the rotor of a later wind farm, with a minimum of 2 km.

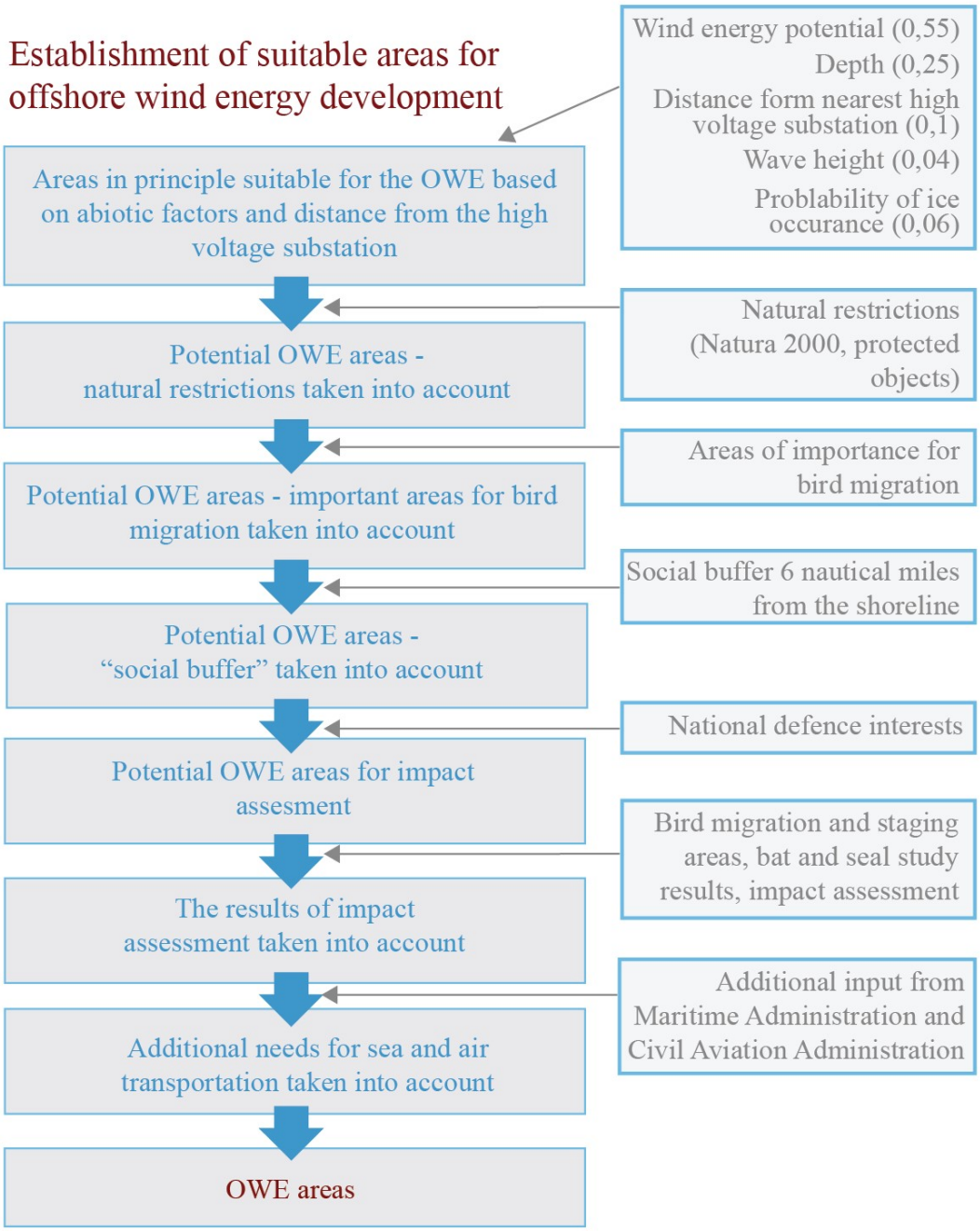
[30] In 2020, the Ministry of Finance, in cooperation with the Ministry of Economic Affairs and Communications, carried out a survey among developers to identify the likely parameters of proposed wind turbines.

[31] A future offshore wind farm development will be able to locate its wind turbines in such a way as to minimise wind-shadow effect in its wind farm compared to the existing one(s). It is also likely that the newer wind farm will already have newer and taller wind turbines, which will provide more wind-shadow effect for the previously established wind farm than equivalent wind turbines with a similar siting pattern. It is likely that wind farms will be built first in the eastern part of wind energy development areas, where the sea is shallower and the connection point is closer. The most productive winds in Estonia are southerly, southwesterly and westerly, with very low productivity in the northeast and east winds, so the first wind farm to be built in the east or northeast of the development area will provide little wind-shadow effect compared to a wind farm added to the west, but the opposite impact will be very significant.

5.6.3 Establishment of suitable areas for wind energy development

During the development of the MSP, the suitability of the Estonian marine area for the development of wind energy was analyzed (for a comprehensive methodology, see spatial layout 5.6.3.1 and diagrams; for weight setting, class distribution, and raster analysis methodology see Annex 2). The selection of suitable areas was based on a gravity-based foundation technology, which, according to current knowledge, is most suitable for the ice conditions which occur in Estonia.

Areas suitable for wind energy development based on natural conditions and the distance of the substations were associated with other uses of the sea and with known limitations. Environmental aspects were considered, and the best information available was used (see the methodological spatial layout below and thematic maps). The areas were further analyzed during the impact assessment. The proposals from maritime transport and aviation was also taken into account. Thus, areas where potential conflicts with other uses are absent or minimized were identified.

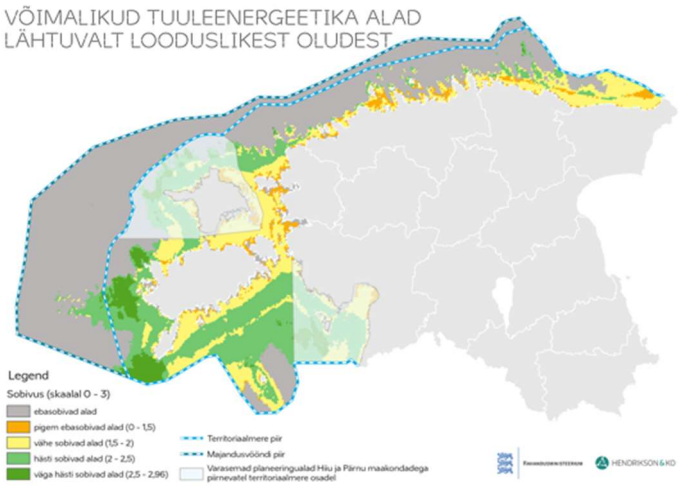


Spatial layout 5.6.3.1 Finding areas suitable for wind energy development.

As part of the consideration process described above, schematic thematic maps were prepared:

1. As a first step, areas that are in principle suitable for the development of wind energy were identified. Wind energy potential (weight 0.55), depth (0.25), distance from nearest high voltage substation (0.1), probability of ice occurrence (0.06), and wave height (0.04) were used as the basis.

Suitable areas are marked in green.

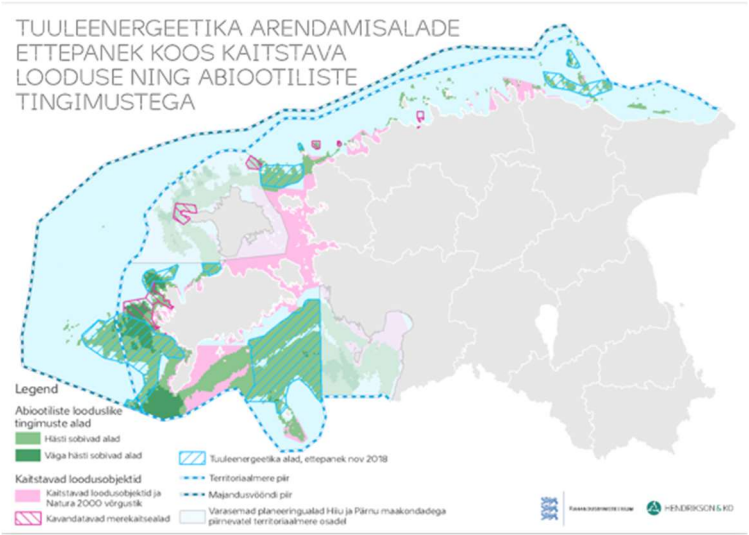


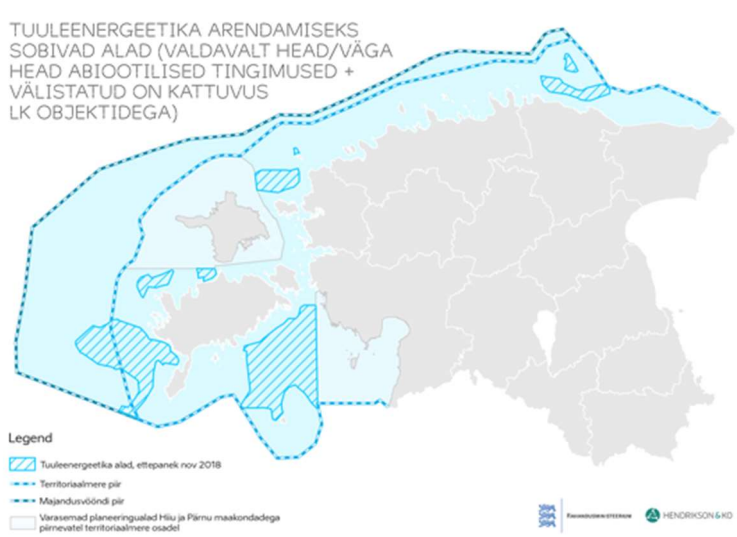
Possible wind energy development areas based on natural conditions

2. As a second step, the overlap of the suitable areas with natural values was analyzed. The overlapping areas were cut out.

Existing protected natural objects and Natura 2000 sites are marked in pink, while the proposed marine protected areas are marked with dark pink diagonal lines. The dataset is as of September 2018.

Proposed wind energy development areas energy with protected nature and abiotic conditions

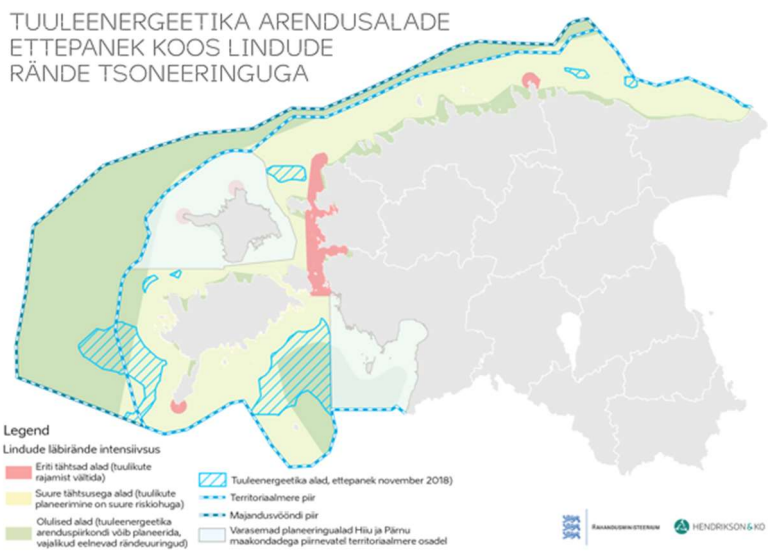


3. With the deduction of protected areas from basically suitable areas, an initial proposal for the planning of wind energy development areas was obtained. *Areas suitable for wind energy development are indicated by blue diagonal lines.*	Areas suitable for wind energy development of wind energy (predominantly good/very good abiotic conditions + no overlap with nature protection objects) 
4. The so-called visual buffer, 11.1 km from the coastline, was deducted from the initial wind energy development areas. *Wind energy development are indicated by blue diagonal lines.*	Areas suitable for the development of wind energy (predominantly good/very good abiotic conditions + no overlap with nature protection objects) 

5. The overlap of the wind energy development areas with the zoning of bird migration was observed. The proposed wind energy development areas do not overlap with particularly important migratory areas of birds. The interaction with areas of importance to birds was further considered during the impact assessment (see step 10).

Areas of particular importance for bird migration are indicated in red, areas of major importance in yellow, areas of importance in green.

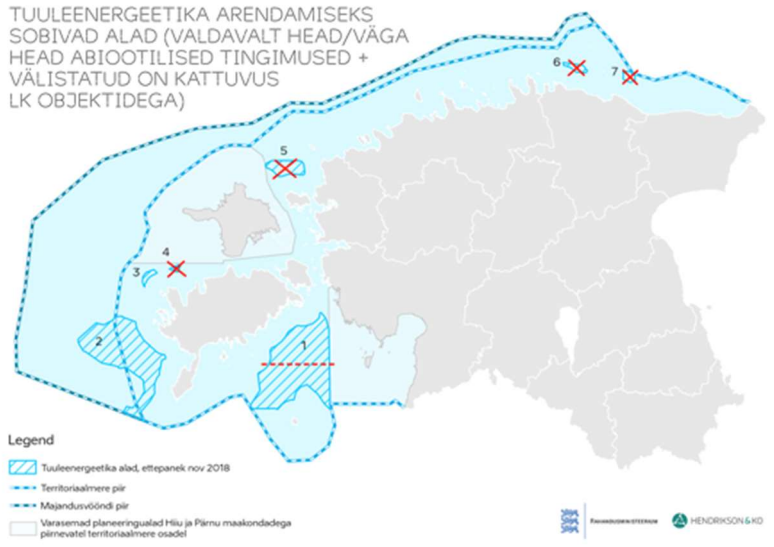
Proposed wind energy development areas with bird migration zoning

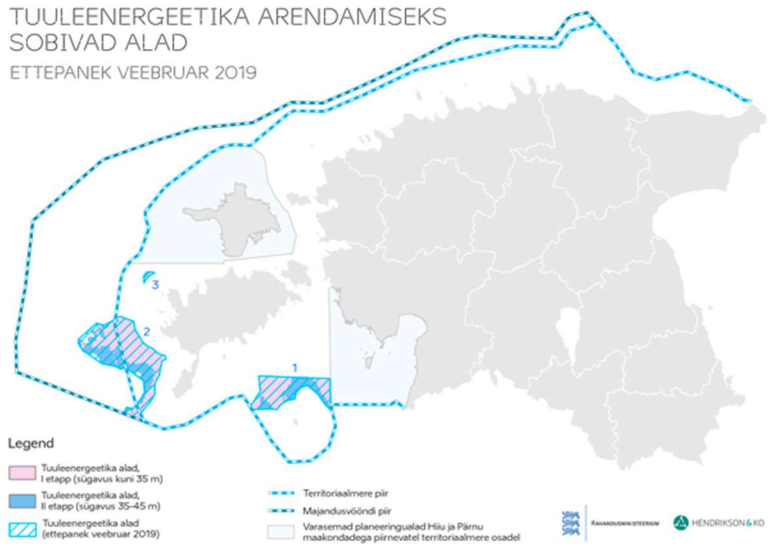


As an interim decision, it was considered that due to the size of the areas and national defense interests, the development of wind energy is not feasible in the northern part of the Estonian marine area on the time scale of the planning.

6. Possible wind energy development areas were analyzed in the light of national defense interests. Areas No 4, 5, 6, and 7 (in accordance with the interim decision taken in cooperation with the Ministry of Defence, not to plan wind energy development areas in the northern part of the Estonian marine area, in the Gulf of Finland) and the northern part of Area 1 have been deducted because of the need for air surveillance and operational radar capability.

Areas suitable for wind energy development (predominantly good/very good abiotic conditions + no overlap with nature protection objects)



7. For on-depth observation and assessment of feasibility, two stages were distinguished by depth: areas up to 35 m deep (stage I) and areas 35-45 m deep (stage II)[32]. The deeper (> 35 m) marine area is less promising due to the winter ice conditions in the timeline of the current planning as there is no suitable technology for Estonian sea conditions[33]. *Blue hatching with pink indicates Stage I, blue indicates Stage II.*	Areas suitable for wind energy development Proposal February 2019 

Based on the feedback of the draft solution and in view of the rapid development of technology, an innovation area of wind energy development areas was also included in the plan. The area free of fast ice targeted especially for wind turbines and wind farms predominantly on floating foundations, but also for other innovative solutions, remains within the exclusive economic zone west of the wind energy development area No 2. The area covers 88 km^2. The location of the innovation area is based on the layout of the international ship traffic areas and other water traffic areas, the depth restriction has not been considered important. The need to ensure a larger social buffer was also taken into account, which is why the area was set further away from the coast. The introduction of the innovation area does not require the prior exhaustion of other development areas of wind energy.

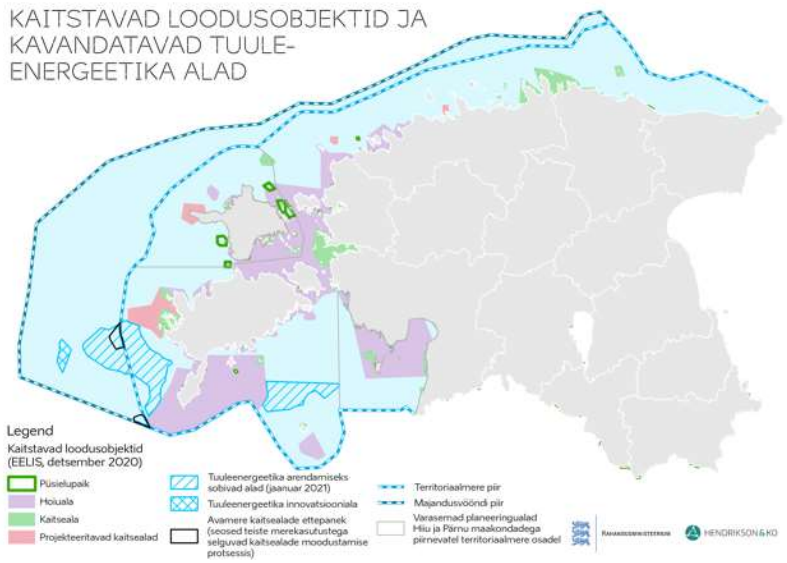
In the framework of the impact assessment of the main solution, the overlap with protected natural objects was checked as of December 2020 (see section 4.2.6 of the Impact Assessment Report) and the compatibility of areas suitable for the development of wind energy with bird staging areas and migratory trends was further analyzed, based on a study prepared by the Estonian Ornithological Society (2019, 2021). The overlap of the proposed wind energy development areas with the areas used by seals was also examined (see section 4.2.3 of the Impact Assessment Report).

[32] The distinction between the phases of wind energy development has taken into account the need for creation of more compact areas. Implementing the 35 m limit will also create larger areas in stage I, where there is more opportunities for efficient placement of wind turbines, taking into account other factors. For the next decade, 35 m will be a critical boundary, where the construction of foundations using gravity-based foundation technology in sea areas with icy and random drift ice may prove economically viable.

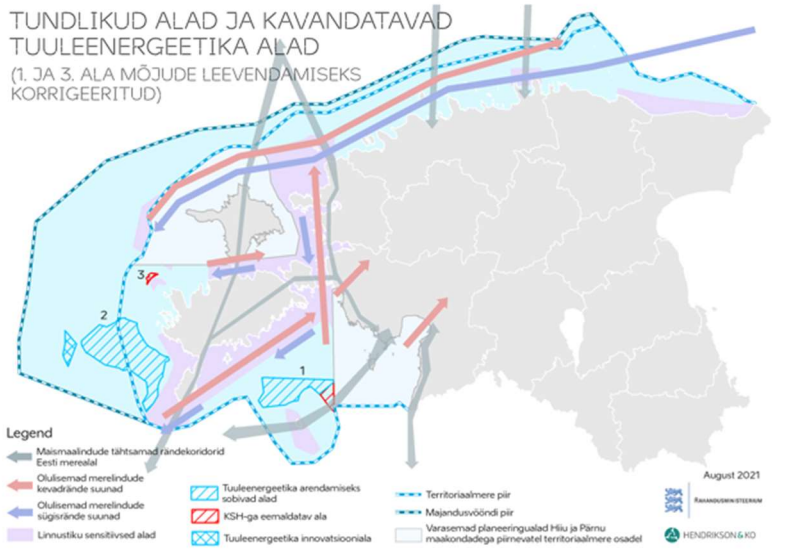
[33] The wind energy development areas do not have to be established strictly in a phased manner, i.e., it is possible to start the development wish in Phase II areas even if no development activities have been carried out in Phase I areas.

8. The impact assessment confirmed that wind energy development areas do not overlap with existing and planned protected areas, based on December 2020 data.
It was acknowledged that offshore protected areas have been proposed in the interim period, with a possible Kolgi Shoal Protected Area overlapping with wind energy development area No 2. According to the Impact Assessment Task Group it would not be prudent to put the overlapping area into economic use until the protected area establishment proposal has been finalised and the specific restrictions have been clarified.

Protected natural objects and proposed wind energy development areas



9. Based on a survey of bird staging areas and migratory directions and an impact assessment, wind energy development area No 1 was revised to reduce area coverage by 13% (from the surface area of the area No 1). In addition, it was decided to abandon wind energy area No 3, which was partly located in the sensitive area of Hülgerahu, an important winter staging area and spring migration area for waterbirds, and had therefore high development risk. Due to its small area, the viability would have been doubtful, and the area was also within the line of sight of important developed onshore viewpoints.
The wind energy development area No 3 to be removed as a result of the impact assessment is marked with a red hatch.

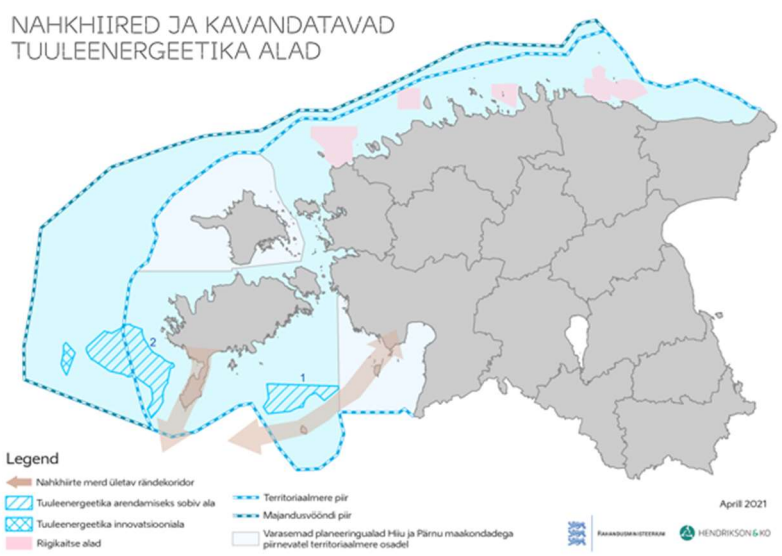


Sensitive areas and planned wind energy areas

Area no 1 and area no 3 have been revised to mitigate the impacts

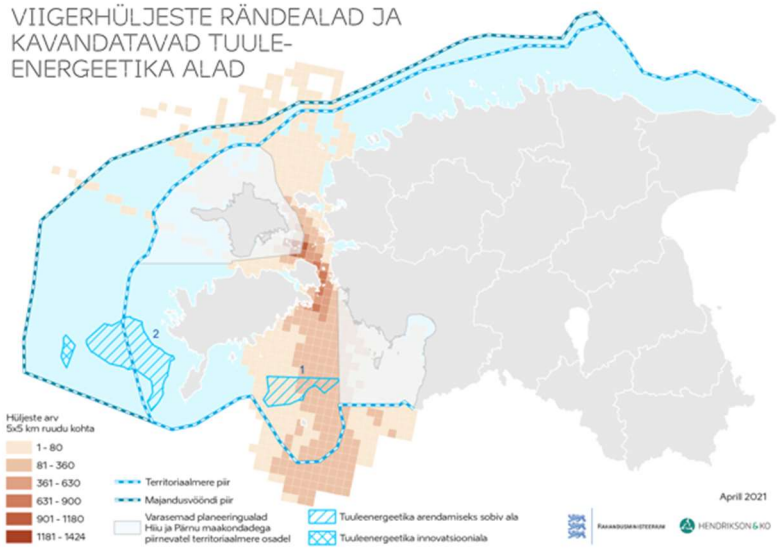
10. The impacts of wind energy development on bats were analysed (see Chapter 4.2.4 of the Impact Assessment Report). Major migration corridors do not overlap with wind energy areas.

Bats and proposed wind energy development areas



11. The impact on seals, especially on the movement areas of the Baltic ringed seal, that is more sensitive to human influences, was analysed. In the main, wind energy development areas are outside marine areas of importance for seals. The Gulf of Riga wind energy area partially overlaps with areas used by Baltic ringed seal. According to the final conclusion of the impact assessment, the implementation of the MSP is not expected to result in significant adverse impacts on seals, when respective environmental measures and recommendations are implemented at the permit level (see Chapter 5.6.5).

Baltic ringed seal migration areas and planned wind energy areas

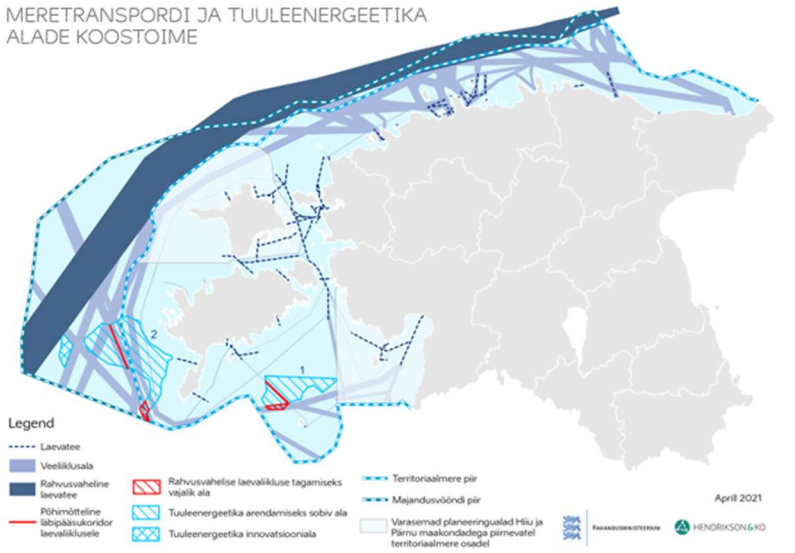


At the public display of the main solution (17.02-18.03.2020), the Maritime Administration (now: Transport Administration) and the Civil Aviation Administration submitted their proposals regarding the areas suitable for the development of wind energy. Based on the proposals, the scope of the areas was reduced (see the spatial layouts below). The reasons for the changes are presented under the spatial layouts.

12. Based on the input of the Maritime Administration, the scope of wind energy areas No. 1 and 2 was reduced. In these areas, the basic passage corridors for shipping, which need to be kept free of wind turbines, were also marked. Precise solutions are developed at the superficies license stage. In addition, the location of the innovation area was specified based on the needs of maritime transport.

Maritime transport needs are marked with a red hatch and lines.

Synergies of maritime transport and wind energy development areas



Grounds for changes:

Considering the combined impact of the planned wind farms on vessel traffic (incl. the area planned the Latvian MSP and the area planned with the Pärnu MSP south of Kihnu), the extent of area No. 1 in the southern part was reduced by 31 km^2. The reduction will ensure safe and optimal vessel traffic in the direction of Pärnu in a situation where prospective wind turbines create artificial obstacles to water traffic. The movement of the water traffic area - delimiting the area No. 1 from the south - to the south is hindered by the shoal extending from the island of Ruhnu.

In addition, in order to ensure smooth international ship traffic, wind energy area No. 2 was reduced by cutting off the area that overlaps with the water traffic area southwest of the Sõrve Peninsula (approx. 36 km^2). This water traffic area is a continuation of a fairway designed in Latvian waters, which is the only possible way to cross the Irbe Strait for ships with a higher draft due to the depths of the sea. It is an internationally important fairway with high traffic density.

A basic passage corridor was designated in area No. 2 to ensure the safety of intensive international shipping in the area. If offshore installations impede the movement of ships over a very large area and ships have to start to travel in a large circle compared to optimal routes, this will have a significant negative economic and environmental impact. Area No. 2 is passed through by several water traffic areas where international freight transport takes place and the main destinations are the ports of the Gulf of Riga, the Gulf of Finland and the Gulf of Bothnia. Therefore, in area no 2, a corridor as straight, optimal and safe as possible must remain open to shipping.

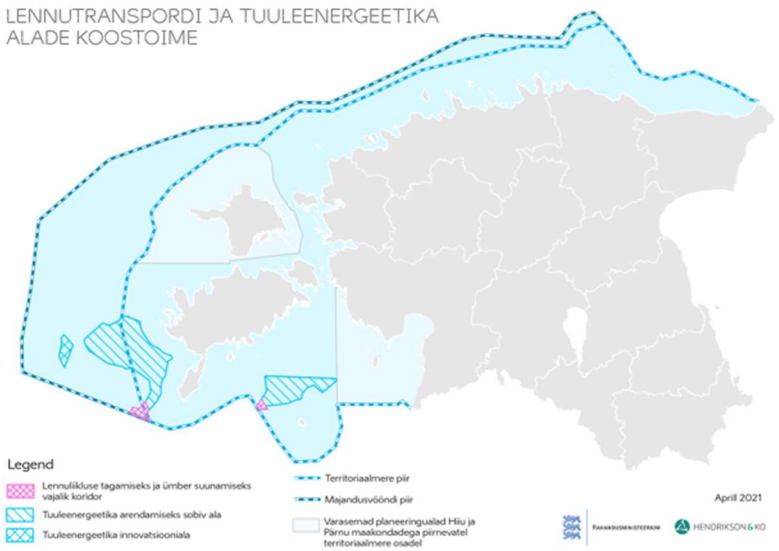
The basic passage corridor for shipping was also marked in area No. 1 in order to ensure the most direct possible crossing for the Roomassaare-Ringsu shipping line, which would not direct ships to the high seas and would thus be even more affected by suitable weather conditions. The operation of the Roomassaare-Ringsu shipping line is of national importance.

The specification of water traffic areas caused the shift of the innovation area in the north-east-southeast direction, the size and depth dimensions of the area did not change significantly with the shift.

13. Based on the input of the Civil Aviation Administration, the south-western part of wind energy area No. 1 and the southern part of area No. 2 (the latter partially coincides with the proposal of the Maritime Administration) were reduced in order to ensure safe air traffic.

The needs of air transport are marked with purple grid.

Synergies of air transport and wind energy development areas



Grounds for changes:

Reduction of Area No. 1 by approx. 22 km^2 is necessary to ensure air traffic in the direction of Ruhnu-Kuressaare. Due to weather conditions, it is estimated that three quarters of flights during the flight season have to be performed around wind farms due to the cloud height. Therefore, a free passage corridor is needed, which would ensure the possibility to turn around even in case of emergency without crossing the state border.

The reduction in Area No. 2 will ensure safe and optimal air traffic on the route Kuressaare - Gotland. It will also provide the Defense Forces aircraft with the fastest possible connection to Central and Western Europe.

During the public display of the main solution (July-August 2020), a conflict arose for local trawling businesses over the potential impact of offshore wind farm development on their business. In Estonia, 4.5% of trawling areas overlap with areas suitable for wind energy development. Overall, the overlap with trawling is 38% of the total wind energy areas, with the following overlaps for individual areas:

- Area No 1 overlaps with trawling 92%;
- Area No 2 overlaps with trawling 17%;
- Innovation area overlaps with trawling 27% (only two fishing trips were made in total in the innovation area in the period 2017-2019, so the overlap is not of major impact here).

The share of fish caught by trawling in wind energy areas was 7% of the total fish caught in 2019 (about 3 800 tonnes, out of a total of 55 000 tonnes caught). Thus, the economic impact is not significant for the Estonian trawling sector as a whole, but the impact on the local economic environment is significant. As both trawling and wind energy are important economic sectors for the Estonian state, further cooperation was carried out with the Ministry of Rural Affairs and the Ministry of Economic Affairs and Communications to find a solution, and a survey was conducted with representatives of wind energy developers as well as with the professional association representing the trawling sectors. Both sectors pointed out that active trawling in offshore wind farms is not possible, and that there are no concrete examples in international practice in

circumstances similar to Estonia, where active trawling in wind farms would be allowed.

The trawling sector pointed out that the Estonian quota in the Gulf of Riga can only be fished in the Gulf of Riga. Considering the developments of offshore wind farms already taking place in the Pärnu marine area and the areas that are now being planned, the situation will be that the fishing areas will be significantly reduced and the pressure on the remaining areas will increase. The areas will also remain largely distant from ports. This in turn will lead to increased time and fuel consumption, reduced revenue from catches (reduced catches), reduced quantities landed in ports, and potentially reduced fish quality due to time consumption. When fishing areas are far offshore, thus reducing the number of fishing days, weather-related risks also arise (storm resistance).

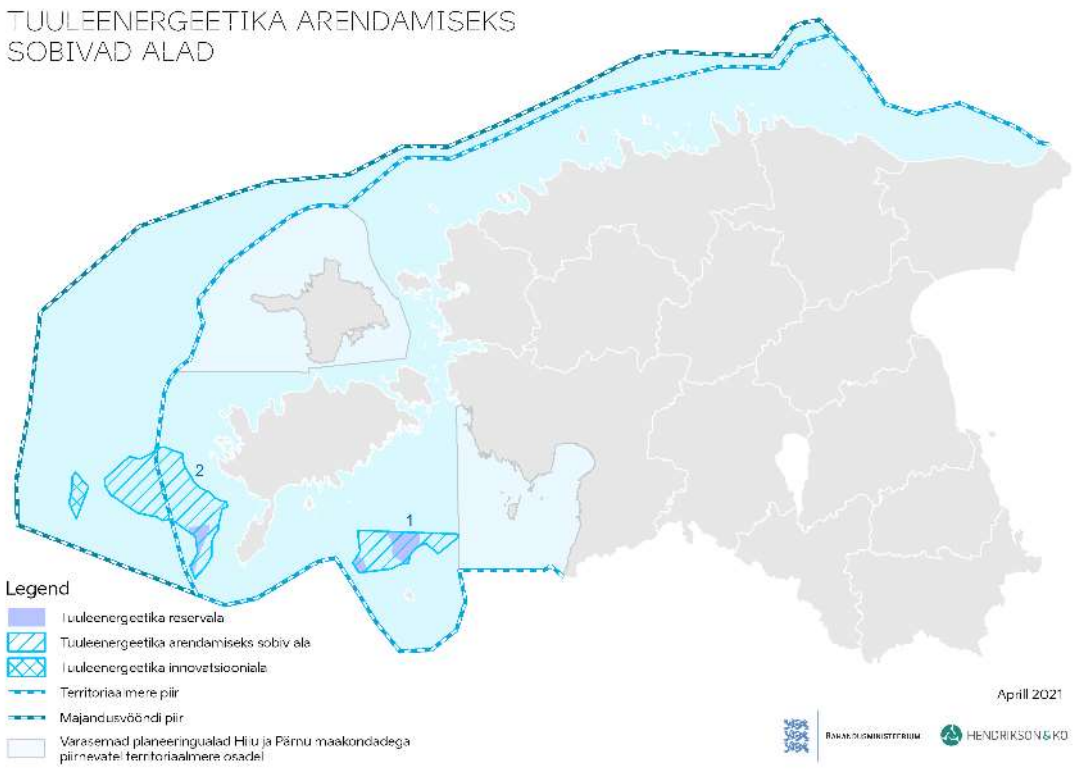
The wind energy sector argued that the areas for wind energy development should not be reduced, as they cannot be fully covered by wind turbines given all the different conditions. In order to achieve the 2050 climate neutrality targets, it is essential that there are sufficient wind energy development areas. The availability of sufficient areas will also ensure competition and the best price for consumers.

Taking into account the above sectoral considerations, the Government of the Republic decided to take an interim decision (29.04.2021), designating as reserve areas those areas proposed in the marine spatial plan for wind energy that coincide with historically more intensive trawling areas (see spatial layout 5.6.4.1). The reserve areas were defined on the basis of the trawling data of the last 3 years (2018-2020), by marking their concentration points according to the coordinates of the trawl hauls, and taking into account the minimum size of the area (90 km2) that is economically viable for wind energy development.

5.6.4 Areas suitable for wind energy development

The MSP will determine areas (total area 1783 km^2, including the innovation area and the reserve areas), guidelines, and conditions for the development of wind energy. Suitable areas determined by the plan are expected to be realized to the extent of approximately 70%. This shows that neither the technological aspects (including the buffer zone between different offshore wind farms), the results of the specifying studies carried out during the superficies license stage, nor the needs of maritime transport make it possible or realistic to wholly cover the area with wind turbines[34]. If the studies carried out at the superficies license/ EIA level identify significant adverse impacts that cannot be mitigated, establishment of the wind farms should be abandoned or their size or other parameters reduced so that no adverse impacts are created. The aim is to avoid associated significant adverse impacts.

[34] No account has been taken of the potential offshore protected area overlapping with area No 2 suitable for wind energy development.



Spatial layout 5.6.4.1. Areas suitable for wind energy development

5.6.5 Wind energy development guidelines and conditions

Guidelines:

1. The development of aquaculture (fish farms, algae and shellfish farming) is favoured in wind energy development areas, in order to achieve a positive synergy.
2. Wider cluster solutions through land-sea interactions (e.g., shared labor, common infrastructure, common vessels, etc.) are favored. It is important to involve fishermen and other sea users in the maintenance of wind farms in order to alleviate the seasonal employment associated with sea use.
3. In the case of a procedure for the protection of a natural object in wind energy development areas, an expert assessment of the justification and feasibility of protecting the natural object shall be carried out. The expert assessment shall include an assessment of the social and economic impacts of the establishment of the protected area and the impact on Estonia's climate and renewable energy objectives.
4. When developing wind energy, it is advisable to give preference to areas outside water traffic areas. Co-operation with the Transport Administration is required to use up-to-date water traffic data[35].
5. In wind energy development areas, it is desirable to base the siting of wind turbines on the location of the habitat types. Where possible, avoid installing wind turbines in areas with habitats of high nature protection value. Cooperation with the Environmental Board is necessary.

[35] The interaction between water traffic areas and wind energy development areas will be refined in February-March 2020 in cooperation between the Maritime Administration, the Ministry of Economic Affairs and Communications and the planning team.

6. As technology develops, when wind farms are built, preference should be given to foundation structures with a smaller "footprint", both in terms of seabed area and ecological footprint[36].
7. In the case of more sensitive habitats, a monolithic foundation is preferable, as the impact on the seabed biota will be one-off. Where possible, use a foundation material that is as similar as possible to the natural substrate (surface roughness, neutral chemical reaction), and consider enriching the outer surface of the foundation with natural rock material. This will allow the creation of an attachment substrate for marine organisms that is as similar as possible to the natural one.
8. In the wind energy development areas, wind turbine-free areas/corridors will be formed based on different interests, which should, if possible, perform as many different functions as possible (combining, for example, a shipping corridor, a waterbird autumn migration corridor, habitats of high nature conservation value etc. in the same location).
9. The horizon must be sectioned (i.e. not fully covered by wind turbines). To this end, it is recommended:
    a. To explore the possibility of leaving areas free of wind turbines in wind energy development area No 2 when looking from the west coast of Saaremaa and in wind energy development area No 1 when looking from the coastal sections on the northern tip of Ruhnu (see the spatial layout 5.6.5.1 below). These sections concentrate the viewpoints located in valuable landscapes that are most affected[37];
    b. The feasibility, location and extent of leaving wind turbine-free areas will be determined through a visual impact assessment at the superficies license stage, cumulatively with adjacent windfarms and with the involvement of the local municipality. In the case of wind farms visible from a single coastline section, it is desirable to carry out a joint assessment of visual impacts;
    c. In addition, it is important to consider the values identified in the comprehensive plan, the more specific landscape character of the view[38] (viewpoint on the peninsula, in the turn of the coastline) and also the opinion of the municipality and the community (including how the viewpoints will be used, how the municipality will direct the viewpoints in the context of the comprehensive plan to be prepared).

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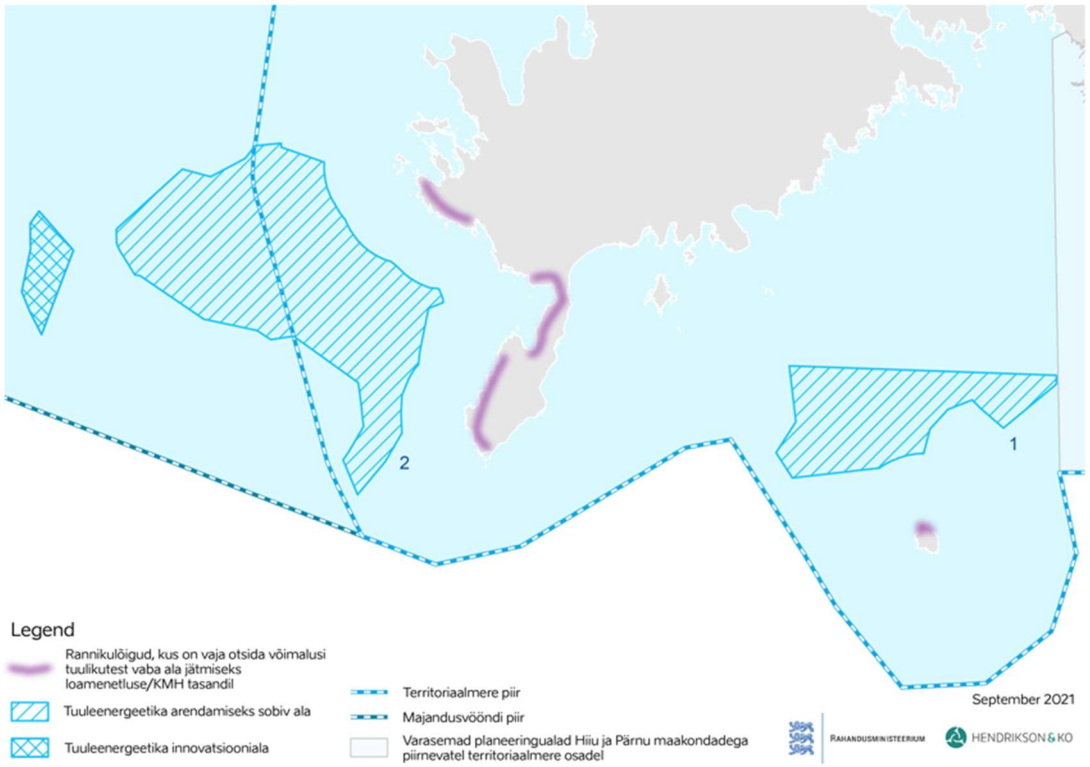
[36] The smaller the area of seabed under the foundation (and the part prepared for this purpose), the smaller the loss of natural seabed in a given location. Consideration must be given to ensuring that the physical installation of wind turbines during the construction or dismantling phase does not generate significant and extensive noise and does not cause significant sediment movement.

[37] As part of the impact assessment of the plan, a coastal viewpoint mapping was carried out, based on the beautiful viewpoints of the Saare County Plan, the coastal objects of the Saare Geopark, and the information of the State Forest Management Centre's recreation sites, and the potential viewpoints of the Class I valuable landscapes of the County Plan were added. For the viewpoints found, the sites most affected by the planning of wind energy developments were identified. See in more detail the impact assessment report Chapter 4.4.1.6.

[38] The "Guidelines for Methodological Recommendations for Visual Impact Assessment to Promote the Development of Offshore Windfarms", AB Artes Terrae OÜ, 2020 (available on the website of the Ministry of Finance) or another at least equivalent methodology, the conditions of which can be applied to the circumstances in Estonia, should be followed.



Spatial layout 5.6.5.1. Coastal sections where it is necessary to look for opportunities to leave areas free of wind turbines at the level of the permit procedure/EIA.

10. Wherever possible, wind turbines will be positioned in an orderly manner to minimise their visual impact[39]. Orderly wind turbine formations should also be taken into account in different developments/wind farms located behind each other, where possible. Where possible, the 'wheel effect'[40] should be avoided.
11. For wind farms closest to the coast, the design of wind turbines of the same height (+/- 10% of the total height) is recommended. Avoid, where possible, the disturbing view created by the topography of the seabed and the siting of the wind turbines, where towers of different heights "bounce" against the sky, creating a "broken silhouette". Visual similarity in both the layout and the parameters of the wind turbines will help to reduce visual distraction.[41].

[39] It is important to keep this condition in mind in Area 2 from Sõrve to the Elda peninsula and in Area 1 northwards from Ruhnu from the viewpoints closest to the wind farms and where the proposed wind energy development areas extend deepest into the high seas.

[40] A situation where the rotors of the wind turbines lined up one behind the other overlap, creating a "spinning wheel" on the horizon that attracts the observer's attention. This effect is to be avoided when deciding on the siting of the wind turbines, see more details in „Guidelines for Methodological Recommendations for Visual Impact Assessment to Promote the Development of Offshore Windfarms", AB Artes Terrae OÜ, 2020.

[41] See more details in „Guidelines for Methodological Recommendations for Visual Impact Assessment to Promote the Development of Offshore Windfarms", AB Artes Terrae OÜ, 2020.

Conditions:

1. In order to increase the share of energy production based on renewable resources, suitable areas for the development of wind energy must be used for the production of wind energy.
2. Areas suitable for wind energy development overlapping with historically more intensive trawling areas are designated as reserve areas.
    a. The reserve areas can be brought into use from 2027 if the procedures and studies carried out in other areas suitable for offshore wind development show that it is not possible to develop sufficient volume of offshore wind farms in these areas.
    b. The criterion of 70% of the volume of all areas suitable for wind energy development (including reserve areas) is set out in Chapter 5.6.4 as sufficient volume. The definition of sufficient volume is based on an assessment carried out jointly by the Consumer Protection and Technical Regulatory Authority and the Ministry of Economic Affairs and Communications.
    c. The introduction of reserve areas should be based on an analysis of the existing situation[42] and the economic impact of wind park development on the fisheries sector trawling and should promote combined use of the fields of activity in the overlapping areas, including, where appropriate, implementing compensatory measures.
3. In areas suitable for the development of wind energy, wind turbines will be built with foundation solutions the environmental impacts of which are equivalent to or less than the impacts of building wind turbines using gravity-based foundation technology.
4. If the impact of wind energy development on other technologies is estimated to be greater than the present one, the gravity-based foundation technology of wind turbines, a new plan needs to be prepared for the relevant part of the marine area, and areas suitable for other technologies should be identified.
5. In the light of the rapid development of technology and in order to promote innovation, the wind energy innovation area shall be designated[43].
    a. Wind turbines will be built primarily on floating foundations in the wind energy innovation area. The environmental impact of floating foundations is equivalent to or smaller than that of the gravity-based foundation technology underlying this planning solution.
    b. The introduction of the innovation area does not require the prior exhaustion of other wind energy development areas.
    c. The conditions set out in this plan must be followed when introducing the innovation area.
6. In order to reduce the risk of collision with waterbirds the minimum permissible height of the wind turbine rotor must be at least 25 m above the average high sea level[44]. The minimum permissible height can be specified (increased to 30

[42] The analysis of the existing situation will be based on e.g. the status of superficies licenses, studies and EIAs carried out, national climate and energy targets, and other relevant factors.

[43] In the designation of the innovation area, overlaps with water traffic areas and areas of high importance for bird migration were avoided; following the depth limitation (up to 40 m) was not considered important due to the innovative technology.

[44] The average sea level plus the average wave height of the corresponding sea area.

or 35 m, if necessary) on the basis of a study to be carried out during the permit procedure.

7. The minimum distance between wind farms to mitigate potential wind-shadow impacts is about 8 wind turbine rotor diameters of the later added wind farm, with a minimum of 2 km.
8. To minimize the visual impact:
    a. Wind turbines shall not be located closer than six nautical miles (11.1 km from the nearest wind turbine) to the mainland and an island with a permanent settlement).
    b. Where several wind farms are planned at the same time, the combined visual impact of the wind farms shall be assessed. Where possible, the interaction with other proposed wind farms[45] in the same area shall also be assessed.
9. For reasons of maritime safety, wind turbines shall not be placed on fairways, including international ship traffic areas and anchorages.
10. In wind energy areas, basic passage corridors for shipping must be maintained free of wind turbines[46] (see step nr 12 in the wind energy development table), in order to ensure smooth international freight transport and as optimal journey length as possible[47] and the need for turns[48]. Precise solutions are developed at the superficies license stage in cooperation with the Transport Administration and the relevant authorities in neighbouring countries.
11. Wind turbines must not cause the operational capacity of national defense air surveillance system and sea surveillance system to be impaired, and, where necessary, compensation mechanisms should be developed and implemented. In order to avoid a situation where it would be possible to erect buildings that could pose a threat to security, the competent authority and the developer must comply with the coordination requirements under the Building Code.
12. When deciding the location and technological solutions of the location of wind turbines at the level of permit procedure/Environmental Impact Assessment, it is necessary:

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[45] Proposed wind farms are wind farms for which the permit procedure has been completed or for which a positive interim decision has been taken (e.g. an EIA report has been submitted for public consultation). The approach is based on the European Commission Communication 2021/C 437/01 "Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC", whereby the provision on interactions refers to other plans or projects which have been completed, which have been approved but not completed, or which are proposed (i.e. where a request for approval or consent has been submitted).

[46] In Area no 1, the width of the basic passage corridor, based on current knowledge (vessel traffic density and dimensions), shall be at least 2000 m in order to avoid the extension of the Roomaassaare-Ringsu shipping line and its diversion towards the high seas. Area no 2 shall have a corridor width of at least 6250 m to ensure the safety and optimal journey of heavy international vessel traffic. The minimum width required for vessel traffic is calculated according to the formula in footnote 21: W = Ws + 2 (Wr + Wc).

[47] When bypassing wind energy development areas, the ship's voyage can be calculated to increase by 10 - 30 km depending on the destination and the time spent can increase by 0.5 - 1.5 hours. Depending on this, fuel consumption also increases, which is difficult to determine because it depends on the type of ship, the size of the cargo and many other factors.

[48] When bypassing wind energy development areas, the ship has to make more turns compared to the existing directions of movement. Turning points should be avoided when designing fairways (*IMO, 2008, Ships' routing, Part A, Chapter 6, Section 6.4*), (*PIANC, 2014, MarCom Wg 121 Harbor approach channels design guidelines, Chapter 3.1.2.1*), as they reduce the safety of vessel traffic.

a. To assess noise-related impacts (during construction, operation and dismantling, with a particular focus on underwater noise, but also addressing atmospheric airborne noise). Conduct noise modelling and, upon modelling, consider other wind farms located or planned in the area.
b. to assess the possible significant adverse impacts of the released heat energy and possible vibrations related to the magnetic field and facilities. Carry out modelling, if necessary, and take into account other wind farms and infrastructure in the area and possibly planned wind farms in the area.
c. To assess the impact on the living environment of fish, including fish spawns and migration and benthos. In line with the precautionary principle, when wind farms are planned, more detailed studies[49] must be carried out at the level of the licensing procedure in the area of the wind farm and in the area of influence (e.g. studies describing the impacts of wind turbine operating noise on fish migration, including mass migrations of economically important fish to important spawning grounds). In order to mitigate the impacts during construction, it must be stipulated that noisy activities (such as the installation of wind turbine foundations, dismantling of wind turbines) should not take place in the fish spawning period nor area where a large amount of fish has accumulated in a limited area.
d. To assess the impact on the living environment of seals. The design of waterways planned for the maintenance of wind turbines must take into account the need to minimise disturbance to Baltic ringed seals.

e. To assess the impact on birds. In collaboration with an avian expert, to specify the impacts on birds in the light of the scale of the proposed activity, its exact location, and the technical solution.
    i. The eastern part of Area No 1, which is suitable for wind energy development in the Gulf of Riga, is located close to an important migration corridor for terrestrial birds (including birds of prey) across the sea. Clarify the actual width of the migratory flyway of terrestrial birds near the eastern part of the development area along the Kihnu-Ruhnu axis and identify other information necessary for collision risk assessment (species flight intensities and flight altitudes). To this end, it will be necessary to carry out a radar survey covering at least two years of bird migration periods, in parallel with visual observations[50].

[49] If an experimental noise study (or other study) is carried out in the Estonian marine area and it is found that certain fish species are not affected by noise during migration, then this result can be taken as a basis and no further studies are to be carried out. If a noise study shows that noise is impeding fish migration, further detailed studies are necessary to map fish migration corridors. If the study shows that there are significant adverse impacts on fish migration that cannot be mitigated, the scale or other parameters of the proposed activity should be reduced to avoid adverse impacts or the activity should be abandoned.

[50] The methodology should broadly follow the standard survey protocol established in Germany. (BSH, 2013).

ii. In the case of Area No 2, west of Saaremaa, which is suitable for wind energy development, specify which part of all migratory terrestrial birds flies over the sea from the direction of Hiiumaa to Kuramaa (NNE-SSW) and which part does not use the main migration route, i.e. does not go via the Sõrve peninsula to Sääre and from there over the sea to Kuramaa, but takes the direction from the west coast of Saaremaa towards Gotland, in which case the wind energy development area may remain on the migration route. To this end, it will be necessary to carry out a radar survey covering at least two years of bird migration periods, in parallel with visual observations[51]. If necessary, design wind turbines within the wind farm so that birds can fly through the farm.

iii. In the case of Area No 2, west of Saaremaa, suitable for wind energy development, the principle of combined use of marine area should be taken into account and the principle passage corridor for vessel traffic (currently NNW-SSE) should be specified, if possible, to better coincide with the expected predominant migration direction of birds (NNE-SSW). Birds will then be able to use the area as a migration corridor, as the width of the shipping corridor for Area 2 is estimated to be approximately 6250 m.

f. In cooperation with the bat expert, the impacts on bats in the light of the scope, exact location and technical solution of the proposed activity are to be specified, by conducting field surveys of bats before construction of the wind park in the sea area to be developed. Monitoring of bats is to be continued during construction and operation of the wind farm[52].
g. Carry out geological surveys[53] and assess the impact on the seabed.
h. assess the impact of the proposed activities and possible icebreaking works on changes in ice cover and the mobility of sea ice; and consider the risk to the resilience of installations due to ice conditions.
i. to design a sea-grid substation in cooperation with AS Elering in wind energy area No 1 and area No 2[54]. The approximate construction area of the substation is 200 x 200 m (see also the explanation on the sea-grid in Chapter 5.7).
j. To assess the spread of suspended solids during construction (potential impact on habitats, plants, spawning ground).
k. To assess landscape and visual impacts. The assessment must be carried out by an appropriate expert using the guidance material developed[55] or

[51] The methodology should broadly follow the standard survey protocol established in Germany. (BSH, 2013).

[52] This requirement is also included in Resolution No. 8.4 of the Meeting of the Parties to the European Agreement on the Conservation of Bats (EUROBATS) (adopted in October 2018, see https://www.eurobats.org/node/1422#1).

[53] The "Overview of marine geological datasets for the planning of offshore wind farms", prepared by the Geological Survey of Estonia in 2021, provides a starting point for the studies.

[54] If the cooperation during the licensing procedure shows that the design of a sea-grid substation is not necessary in the context of a specific permit procedure, there is no need to address the issue.

[55]See more details in „Guidelines for Methodological Recommendations for Visual Impact Assessment to Promote the Development of Offshore Windfarms", AB Artes Terrae OÜ, 2020.

an equivalent generally accepted methodology appropriate to Estonian circumstances, involving the local municipality and the coastal community[56]. Attention should be paid, inter alia, to the following points:

i. The need to meet climate objectives and the fact that the siting of wind turbines may also be constrained by the preservation of natural assets and other uses of the sea (e.g. maritime transport).
ii. The methodological assessment of the visual impact for the optimal siting of wind turbines must start at an early stage of the wind farm design and take into account the realistic visibility distance.
iii. The visualisations elaborated for the wind farm shall give as true a representation of the wind farm as possible to the human eye without distortion, and the execution of visualisations must be verifiable.
iv. Wind turbines should be grouped as compactly as possible, taking into account the needs of the technological solutions of the wind turbine (e.g., dispersion to maximize power production and longevity).
v. avoiding the formation of small clusters of wind turbines, or individual isolated wind turbines on the periphery of the wind farm, which appear to be isolated clusters from the main row of wind turbines.

l. To set conditions for wind turbine demolition, including considering the additional damage to benthic biotopes associated with the removal of wind turbine foundations.
m. To cooperate with the Police and Border Guard Board in ensuring the operational capability of maritime surveillance radar communications and protecting national borders. Where appropriate, a study shall be conducted to clarify the effect on the surveillance radar and to determine compensatory measures.
n. To cooperate with the Ministry of Defense to ensure the operational capability of national defense air surveillance.
o. To cooperate with the Transport Administration in order to specify the possible air traffic corridors, and to avoid disturbances in navigation systems.
p. In case of overlap with the water traffic areas, to specify the location of the wind turbines and the functioning of water traffic in cooperation with the Transport Administration, based on up-to-date data, assessing, inter alia, the impact on vessel traffic (among other things, the economic impact of longer travel distances and the increased level of risk associated with limiting and increasing traffic and taking into account the needs of neighbouring countries). In cooperation with the Transport Administration, the need for cross-border maritime transport cooperation will be determined.
q. To specify the width of the buffer zone required for maritime safety when bordering the water traffic area, based on up-to-date data in cooperation with the Transport Administration.

[56] E.g. through the use of workshops, debates, surveys or other participatory methods.

r. Wind turbines cannot overlap with cultural monuments. To evaluate the impact on cultural heritage, which will be the subject of a preliminary underwater archaeological study.
s. To cooperate with the Ministry of Defense to determine the likelihood that historic explosives and other dangerous objects will be found.
t. To co-operate with the Ministry of Rural Affairs when placing wind turbines in areas overlapping with trawl fishing, analyse the economic impacts of trawling on the fisheries sector and promote combined cross-sectoral use in overlapping areas, including, where appropriate, through implementing compensatory measures.
u. when designing wind farms, the combined impacts of wind turbines and cables (both internal and external) in the marine area must be assessed.

5.6.6 Cable corridors from wind energy development areas to land

In order to transmit the electricity planned to be generated, it is necessary to create an energy network that is connected to the onshore transmission network. The specific connection capacity in wind farms depends on the connection conditions provided by AS Elering. Reinforcement work is also needed in the current transmission network. In the long run, in order to connect wind farms to today's transmission network, an energy network connecting the development of offshore wind energy must be created based on the total social cost. With the help of it, the planned wind energy development areas must be connected to each other and also to the wind energy development areas of neighboring countries. In this case, it is possible to use the wind resource of areas for wind energy development planned for the entire Estonian marine area. The construction of the energy network of marine areas will be resolved separately; following the conditions set out in Chapters 5.6.6 and 5.7, it does not constitute a change to this Maritime Spatial Plan. In the long run, so-called *off-grid* solutions (e.g., hydrogen technology) or electricity-to-gas solutions, where energy is transferred from marine areas to land in the form of gas, may also be likely.

Pursuant to the Planning Act, the task of the national Maritime Spatial Plan is to define areas suitable for the development of the energy network. For the purposes of the solution of this plan, this also means the need to determine the conceptual locations of the cable corridors for the connection of the planned wind farms to the onshore transmission network (see the spatial layout below). Determining the conceptual locations of cable corridors is necessary at the strategic level for impact assessment to ensure that the plan is implementable. For the same purpose, the estimated width of the corridors was determined to be 200 m[57]. The real need for space of the seabed, technical solution and exact location will become clear at the stage of the permit procedure. An

[57] The conceptual width of the cable corridor is determined on the basis of the extent of protection zones, 100 m on each side of the cable in accordance with Regulation No. 73 of the Minister of Economic Affairs and Infrastructure of 25.06.2015 „Extent of the protection zone of a structure, procedures for activities within the protection zone and requirements for the marking of the protection zone“. The experience of other countries is similar, for example, in the largest wind farm in Scandinavia, in Vattenfall wind farm in Denmark, the width of the corridor was calculated to be 100 m, to which a safety buffer was added.

impact assessment has been carried out in the marine area on the conceptual locations of the cable corridors. The guidelines for the creation of connections have been set for the mainland (see the guidelines below).

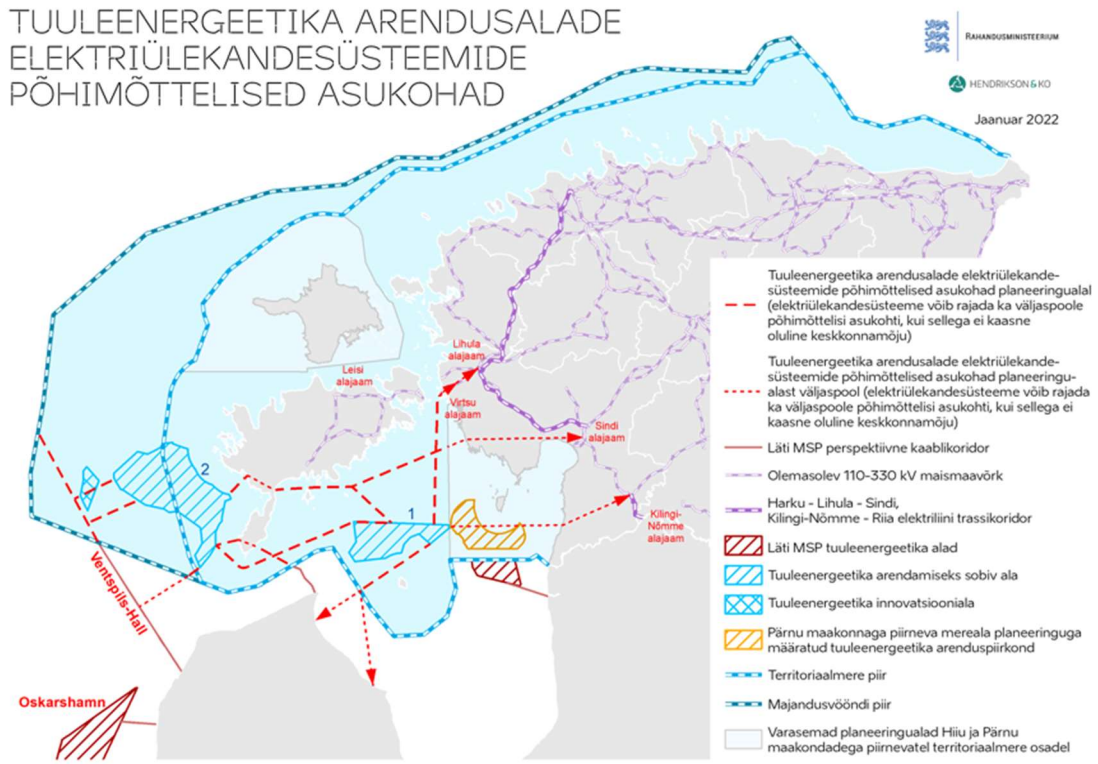
The conceptual locations of cable corridors in areas suitable for the development of wind energy in the marine area are arranged in such a way that they take into account Natura 2000 sites and their conservation objectives, i.e., do not affect them. The shortest possible distance to the connection point, the location and capacity of the existing transmission network and the development trends of electricity supply known today have also been considered important in the planning of connections.

An alternative location to the cable corridor may be found in the development of wind farms at the superficies license stage, provided that this does not have a significant adverse impact on wildlife and adverse impacts on Natura 2000 sites. The conservation objectives of national nature protection areas must also be taken into account. The construction of the cable corridor in an alternative location, but in compliance with the conditions set by this plan, does not necessarily require the preparation of a new plan, as it does not have a significant spatial impact and does not affect the implementation of the planning solution[58].

In the planning area of the marine area of Pärnu County, the construction of cables must take into account the conditions of the MSP of the marine area bordering Pärnu County.

Wind energy development areas will be connected to onshore substations, the likely connections are shown on spatial layout 5.6.6.1. Wind energy development areas can also be connected to the Harku substation, for example, a cable corridor can run in the exclusive economic zone, on the border of the territorial sea. When constructing a cable corridor, the conditions set by this plan must be followed.

[58] The need for a plan depends on the site-specific situation, the technology of the facility to be built and the legislation in force at the time. It is necessary to assess whether or not a plan needs to be compiled each time an alternative site is used.



Spatial layout 5.6.6.1 Conceptual locations of electricity transmission systems from wind energy development areas and connections to the onshore energy network. Electricity transmission systems may also be established inside wind energy development areas in accordance with guidelines and conditions.

Guidelines:

1. It is most appropriate to connect the offshore wind farms to the onshore transmission network by means of separate radial direct current links, given that the capacity of one independent part should not cause a change in the system of more than 350 MW. It is also possible to connect the offshore wind farm to a perspective offshore energy network or another network that is necessary for the transmission of energy generated in the wind farm. The exact maximum capacity of one independent part depends on the technical connection conditions issued by the network holder on the basis of real circumstances[59].
2. In the case of the construction of adjacent wind farms and same direction connections, it is expedient to use the same cable corridors to the maximum extent possible in order to use the seabed more rationally. The aim is to avoid, as far as possible, the interference with the natural environment associated with the additional artificial site and to reduce the load on the seabed with the various cable corridors and their protection zones.
3. When creating new protected natural objects in cable corridors, it is important to maintain the possibility to perform the necessary cable maintenance works and install additional cables in the width of the same corridor when developing the protection regime of the objects.

[59] https://elering.ee/eeluuring-ja-tehnilised-tingimused-1

4. In higher risk areas (e.g., heavy ship traffic - crossing with shipping routes, overlapping with trawling areas, the area inside the wind farm where maintenance vessels move, ice movement in shallow water), the cable must be protected from potential hazards, if necessary, either by covering with concrete slabs or dredging into the seabed. In order to mitigate the impact of cables, it is recommended to consider the possibility of burying the cable, for example in the case of sandbanks. In the case of a hard substrate (for example, in the case of a "reef" habitat type), it is not practical to bury or cover the cable in deeper parts of the high seas. Where possible, the external surface of the cable should have a neutral reaction and allow the organisms to attach.
5. Where possible, give preference to cable lines to minimise negative impacts on bird populations.

Conditions:

1. When installing wind farm cables, significant adverse environmental impacts associated with the proposed activity, including cumulative environmental impacts with nearby structures and objects, must be assessed at the stage of the superficies license.
2. During the development of wind farms at the stage of the superficies license, an alternative location for the installation of cables may be found, provided that this does not lead to significant adverse environmental impacts. Significant adverse environmental impact on the marine habitats and marine life, including significant adverse impact on protected natural sites and adverse impact on Natura 2000 sites must be avoided.
3. When installing cables, apply best available techniques to avoid impacts (including electromagnetic field impacts) on biodiversity during cable installation and operation.
4. In the shallow coastal area, the planned submarine cables must be protected in such a way that ice cannot break the cable. Installations must take account of the risk posed by ice conditions and be durable.
5. When planning the installation of cables, cooperation with the National Heritage Board is required at the stage of applying for a superficies license to avoid damaging seabed cultural heritage.
6. Planning the laying of cables at the stage of applying for a superficies license must be carried out in co-operation with the Ministry of Defense in order to find out the need to take into account possible historical explosives and dangerous objects.
7. Following the construction of the cables, the extraction of mineral resources, dumping and anchoring in the cable corridors is prohibited.

If offshore wind farms are connected to the onshore transmission network, the following guidelines must be met.

Guidelines for connecting offshore wind farms onshore:

1. The technical solution of land connections (cable or overhead line, necessary parameters) and the need for land will be solved in parallel with the superficies license procedure, either through the planning or design criteria procedure, in accordance with the legislation in force.

2. The activities necessary for the establishment of the land connection (planning, public procedure for design criteria, necessity of environmental impact assessment, etc.) will be solved in parallel with the superficies license procedure in accordance with the applicable legislation, in cooperation with the local municipality and the network holder.

3. If a land connection is established with an overhead line, the following must be taken into account:
    a. Avoid placing the overhead line close to residential buildings (up to 100 m) and, if possible, erecting masts in the immediate field of view of residential buildings to reduce the visual impact.
    b. When passing between residential buildings, use the principle of equality, if possible, so that the residential buildings remain at equal distances from the overhead line, unless there is an agreement with the owners of the real estate.
    c. Where possible, the overhead corridor shall be located in close proximity to an existing power line or other technical infrastructure corridor in order to avoid interference with the natural environment associated with the additional man-made object and to reduce land encumbrance through different protection zones.
    d. Design the overhead line in as straight segments as possible.
    e. If possible, avoid the overlap of the overhead line and its protection zone with a protected natural object. Significant adverse impacts on protected objects during construction and operation of the power line and adverse impacts on Natura 2000 sites must be ruled out.
4. If a land connection is established with a cable line, the following must be taken into account:
    a. When choosing the location of the land cable corridor, it is necessary to avoid individual nature conservation objects, cultural values and the immediate vicinity of residential and recreational buildings.
    b. Significant adverse impacts on protected natural objects during construction and operation of the land cable line and adverse impacts on Natura 2000 sites must be ruled out.
    c. Where possible, the cable line should be located in or in close proximity to the existing technical infrastructure corridor in order to avoid interference with the natural environment associated with the additional man-made object and to reduce the encumbrance of the land through different protection zones
    d. When constructing a land cable line, the route corridor may be winding if necessary, as there is no extensive protection zone.
5. Where possible, give preference to cable lines to minimise negative impacts on bird populations.

5.7 Seabed infrastructure

The seabed infrastructure promotes better interconnection of Estonia with unified transmission networks and ensures energy supply to the major islands. Effective connections with the Nordic market and the islands should be considered important. No other additional large-scale international connection projects (except for the

Easternlight and Lilaco communication cables) are currently known. AS Elering is planning prospective submarine cable lines to improve the security of supply on the larger islands. Baltic Sea electricity transmission grid operators are also planning a maritime grid to connect offshore wind farms, helping to achieve climate and energy policy objectives in a cost-effective way and ensuring security of energy supply. The exact location of the offshore network will depend on the location of wind energy development areas in Estonian and Baltic Sea waters. The Maritime Network Development Plan is planned to be completed in 2023 and the first projects by 2030.

In the longer term, the use of the coastal sea adjacent to densely populated areas for cooling and thermal energy may be a possible development trend. It is also likely that pipelines will be built to transport hydrogen, both as a source of energy and as an input for the chemical industry.

The planned LNG terminals on the Pakri Peninsula and the Muuga and Sillamäe harbors will also be included in the energy infrastructure.

The MSP as a strategic national level spatial development document does not specify spatial locations for existing and prospective cables and pipelines (including the use of the coastal sea for cooling and thermal energy). The exception is the conceptual interconnection corridors for the wind energy development areas provided in the current Plan (Chapter 5.6.5). The design and construction of cables and pipelines (including for the use of the sea for cooling and heating and for the construction of cables for wind energy developments not related to this plan) is permitted subject to the following guidelines and conditions and is not an activity changing this Maritime Spatial Plan.

When laying cables in the Pärnu County Maritime Spatial Plan area, the conditions of the planning of the marine area bordering Pärnu County shall be taken into account.

Guidelines:

1. In the case of connections in the same direction, it is expedient to use the same cable/pipeline corridor as much as possible in order to use the seabed more rationally. The aim is to avoid, as far as possible, the interference with the natural environment associated with the additional artificial site and to reduce the load on the seabed with the various cable corridors/pipelines and their protection zones.
2. When creating new protected natural objects in cable/pipeline corridors, it is important to maintain the possibility to perform the necessary cable maintenance works and install additional cables in the width of the same corridor when developing the protection regime of the objects.
3. In higher risk areas (e.g., heavy ship traffic - crossing with shipping routes, overlapping with trawling areas, ice movement in areas with shallow water), the cable/pipeline must be protected from potential hazards, if necessary, either by covering with concrete slabs or dredging into the seabed. In order to mitigate the impact of cables/pipelines, it is recommended to consider the possibility of burying the cable, for example in the case of sandbanks. In the case of a hard substrate (for example, in the case of a “reef” habitat type), it is not practical cover the cable/pipeline. Where possible, the external surface of the cable/pipeline should have a neutral reaction and allow the organisms to attach.

Conditions:

1. Existing cables and pipelines must be taken into account for all uses in the marine area. If necessary, a qualitative study shall be carried out to assess the location and condition of the cables, and cooperation with the cable owner shall be pursued.
2. The details of the laying of the cables and pipelines (location/technical solution, etc.) will be specified in the framework of specific permit procedures. The need for an impact assessment, including the nature, scale, and scope of the impact at the local level, will also be specified.
3. When laying cables, apply the best available technology to avoid possible significant adverse impacts of electromagnetic fields on biodiversity, incl., fish stocks.
4. The proposed submarine cables and pipelines shall be protected in the shallow coastal area so that the cable cannot be broken by ice. Installations must take account of the risk posed by ice conditions and be durable.
5. When constructing cables and pipelines, it is necessary to exclude significant adverse impacts on protected natural objects and adverse impacts on Natura 2000 network areas through an appropriate technical solution and location selection. Cooperation with the Environmental Board is required.
6. When laying cables and pipelines, cooperation with the National Heritage Board is required at the stage of application for the superficies license to avoid damage to the seabed cultural heritage.
7. When laying cables and pipelines, cooperation with the Ministry of Defense is required in the superficies license phase in order to determine the need to take into account possible historical explosives and dangerous objects.
8. When laying cables and pipelines, the local governments with a cable or pipeline within 3 nautical miles of its maritime border must be involved at the superficies license stage.
9. In order to mitigate the impacts of cables and pipelines, for example, in the case of a sandbank, it is appropriate to consider the possibility of burying the cable. For hard substrates (such as "reef" habitat types), it is not practical to bury or cover the cable. Where possible, the external surface of the cable should have a neutral reaction and allow organisms to attach.
10. Following the installation of the cables, the extraction of mineral resources, dumping and anchoring in the cable corridors is prohibited.

5.8 Sea tourism and recreation

The marine area is of great value from the point of view of recreation, both as a location for water-based activities (recreational boating, powerboating, sailing) as well as beach-based leisure facilities.

Maritime recreational activities are largely regulated by local governments. The conditions for marine tourism and recreation vary across the Estonian marine area and coastline, and the nature and intensity of recreational use depend on this.

Due to the nature of the MSP as a strategic spatial development document at the national level, MSP does not determine areas for the development of marine tourism and recreation. The designation of areas requires a place-based approach and substantive discussion at the local level. The MSP provides guidelines based on combined use for the spatial development of the marine area. The proposal to strengthen land-sea interactions through land-sea co-operation clusters (see Chapter 5.16) promotes the development of maritime tourism and recreation.

Guidelines:

1. Expansion of international passenger ship traffic in suitable areas (e.g. Virumaa, Saaremaa) is important.
2. In order to provide sailing tourists and other recreational craft boatmasters with more diversified and suitable conditions for route selection and mooring for yachts, options are planned for stopping yachts, with the widest range of port services available with at least the distance of 30 nautical miles (*approx.* 56 km) (preferred length of day's sail).
3. The development of sea-based recreational and sporting activities in the appropriate locations is encouraged.
4. Potential tourist value (e.g., visits to wind farms or aquaculture farms) will also be considered when developing new uses for the sea - aquaculture, wind energy.
5. Visual impacts are mitigated in the development of wind energy development areas (see Chapter 5.6.5).
6. Public areas such as beaches, sailing and water sports facilities, and public access to the sea, as well as important recreational areas and resting places, are addressed at the local level. Beach-based activities are planned based on the spatial development needs of the local government in the comprehensive plan[60].
7. The recreational needs and safety of the wider public, as well as the impacts on fish during the spawning period, should be taken into account when designing areas for water sports and recreation. Powerboating should not jeopardize the achievement of nature protection goals. By way of exception, the use of personal watercraft in surveillance and rescue operations is permitted without restrictions.

5.9 Protected natural objects

Balanced marine use is based on the protection of marine biodiversity and the sustainable use of natural resources. 19% (6800 km^2) of the Estonian marine area is covered with protected natural objects. The protected part of the Estonian marine area includes predominantly coastal and shallow water areas and less offshore areas. When using the marine area, it is also important to keep in mind the marine protection objectives of partially land-based national parks (Vilsandi, Matsalu, Lahemaa).

HELCOM has set a target of defining at least 10% of the marine basins of each of the Baltic Sea sub-basins as coastal or marine protected areas. In the marine areas

[60] During the preparation of the MSP, the topic of the rights and obligations of local governments in the use and planning of the marine area emerged. The issue needs regulation and is included in the MSP Implementation Action Plan.

surrounding Estonia, this objective has not been fulfilled in the case of the Baltic Proper, whereas Estonia has no protected zones in the exclusive economic zone.[61] The current EU Biodiversity Strategy calls for 30% of marine space to be protected, of which one third would be strictly protected.

Following the recommendations of the EU Marine Strategy Framework Directive and HELCOM, the establishment of offshore protected areas in the exclusive economic zone is under consideration. During a project completed in 2020[62] it was proposed to create two protected areas in the exclusive economic zone (areas 73.3 and 36.7 km^2). The larger of these (the proposed 'Kolgi Shoal Marine Protected Area') overlaps in part with the suitable wind energy development area proposed in this plan (see spatial layout 8 in Chapter 5.6.3). The proposal for the protected area also includes a description of the restrictions proposed for its protection, which stipulates that the following must be restricted within the protected area: construction (all renewable energy installations: wind turbine piles and gravity-based foundation technology, high voltage DC and AC cables; communication cables); extraction of mineral resources; dredging and dumping; fishing with seabed-damaging fishing gear; and any disturbance of the seabed. The final description of the restrictions proposed for protection will be determined during the process of setting up the protected areas in accordance with the provisions of the Nature Conservation Act. To this end, it is necessary to consider the impact of the establishment of protected areas on the social and economic environment, and on Estonian climate and renewable energy objectives. The establishment of protected areas is a process separate from the MSP.

[61] Estonian Marine Strategy Action Plan, 2016 Tallinn.
https://www.envir.ee/sites/default/files/meetmekava_032017_f.pdf

[62] "Preparing a proposal for offshore protected areas in the Estonian Exclusive Economic Zone", responsible: Martin G; EMI 2020 (https://mereinstituut.ut.ee/et/projektid/avamere-kaitsealade-ettepaneku-koostamine-eesti-majandusvoondis)

Spatial layout 5.9.1 Natura 2000 network areas

The MSP takes into account the Habitats Directive and Birds Directive and protected natural objects[63] and values their protection objective. No additional protected natural objects are planned in the MSP. The creation of new objects shall be carried out in accordance with the procedure laid down by law. In addition, it is suggested to take into account the guidelines set out in the plan, which are set in accordance with the objective of combined use of the marine area and the balancing principles.

Guidelines:

1. Also outside the network of protected areas, the use of the marine space is guided by the principle of maintaining the good status and functioning of the ecosystem and thereby ensuring the sustainability of ecosystem services. To boost the maritime economy, natural resources need to be both used and maintained at the same time.
2. When planning new developments[64] at sea, if necessary, nature values surveys are carried out, the results of which are taken into account when deciding on the feasibility of the developments or in the selection of scale, technology, etc.
3. Creating offshore protected areas will be based on the principle of combined use of the marine area and the need to use marine resources also for energy production, aquaculture development, national defense, and other uses.
4. When creating a new protected natural object, the spatial shape of the protected nature object shall, if possible, be adapted to the fairway. The process will involve cooperation with the Transport Administration and carrying out social and economic impact assessments to determine the impact on vessel traffic,

[63] Consideration is given to both existing protected natural objects in 2021 as well as the planned ones.
[64] New developments include both new maritime uses as well as developments related to traditional maritime uses.

including the economic impact of possible route extensions and the increase in the level of risk associated with traffic restrictions and increases.
5. For the creation of new protected natural objects for the sea and preparing protection conditions, additional restrictions must be taken into account so that the achievement of environmental objectives in the marine area is balanced.

Conditions:

1. The use of marine areas in protected areas is subject to the protection objectives of the protected areas and the restrictions in force.
2. When planning shellfish and algae cultivation on a protected natural object, the possibility of synergy is specified in cooperation with the Environmental Board.

5.10 Marine culture

Estonian marine culture is reflected in both its tangible and intangible cultural heritage, which contributes to meaningfulness and enriches everyday life. Marine culture is created by users of the marine area and the coast: fishermen, shipbuilders, vacationers, surfers, divers, etc., also the tangible cultural heritage located in the marine area has an important role to play (including, e.g., wrecks not yet protected as cultural monuments).

The results of the cultural mapping of the Estonian coast and marine area (see Annex 2 to the Impact Assessment Report) show that the whole Estonian coast is valuable in one way or another. Sparsely populated coastal areas are valuable either naturally and/or culturally, and both recreational services as well as and social infrastructures supporting maritime culture at local level are concentrated in coastal villages and towns. The coastal sea contains valuable landscapes (e.g., Neugrund Bank), wreckage areas, and marine areas used for water sports. Sea views of the Tallinn skyline are also important values[65]. The protection objectives of national parks (Vilsandi, Matsalu, Lahemaa) also affect marine culture.

In order to link the cultural values of the sea to the wider uses of the sea and the coast, the so-called land-sea clusters which allow the meaningful use of the "maritime aspect" to guide the future development of the region were proposed in the impact assessment (see Chapter 5.16).

The MSP does not designate specific areas of marine culture due to the strategic nature of the spatial development document at the national level. Both intangible and tangible marine culture is valued by planning through setting priorities and guidelines.

Guidelines:

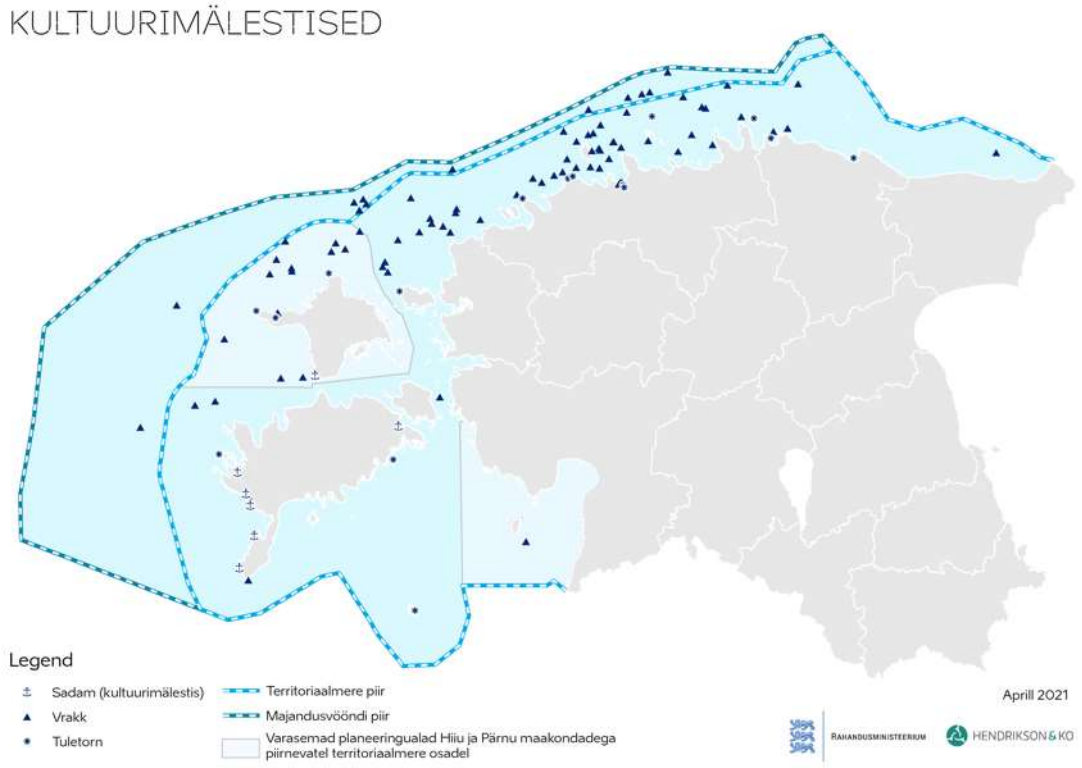
1. Take into account the use of the marine area that is appropriate in respect of the natural and cultural characteristics of the area when drawing up plans for a tract of land.
2. Encourage the coexistence of traditional and emerging marine cultures. In order to preserve marine culture values on the coast and in the coastal sea, it is important to agree on synergies at the local level.

[65] View corridors are set out in documents separate from the present plan (Statutes of Tallinn Old Town Heritage Site, Thematic Planning of High-Rise Buildings of Tallinn, etc).

3. Strengthen traditional marine culture through harbors operating in naturally suitable sites and effective regulations in the field of fisheries.

5.11 Cultural monuments

Shipwrecks, for which the Baltic Sea offers unique preservation conditions, represent the largest part of the maritime material cultural heritage. Interest in exploring Estonia's underwater cultural heritage is growing, and diving clubs also host visitors from Finland, Latvia, Russia, and Germany.



Spatial layout 5.11.1 Cultural Monuments

The taking of new cultural heritage sites under protection or changes to the protection regime shall not be deemed to constitute a change to the MSP.

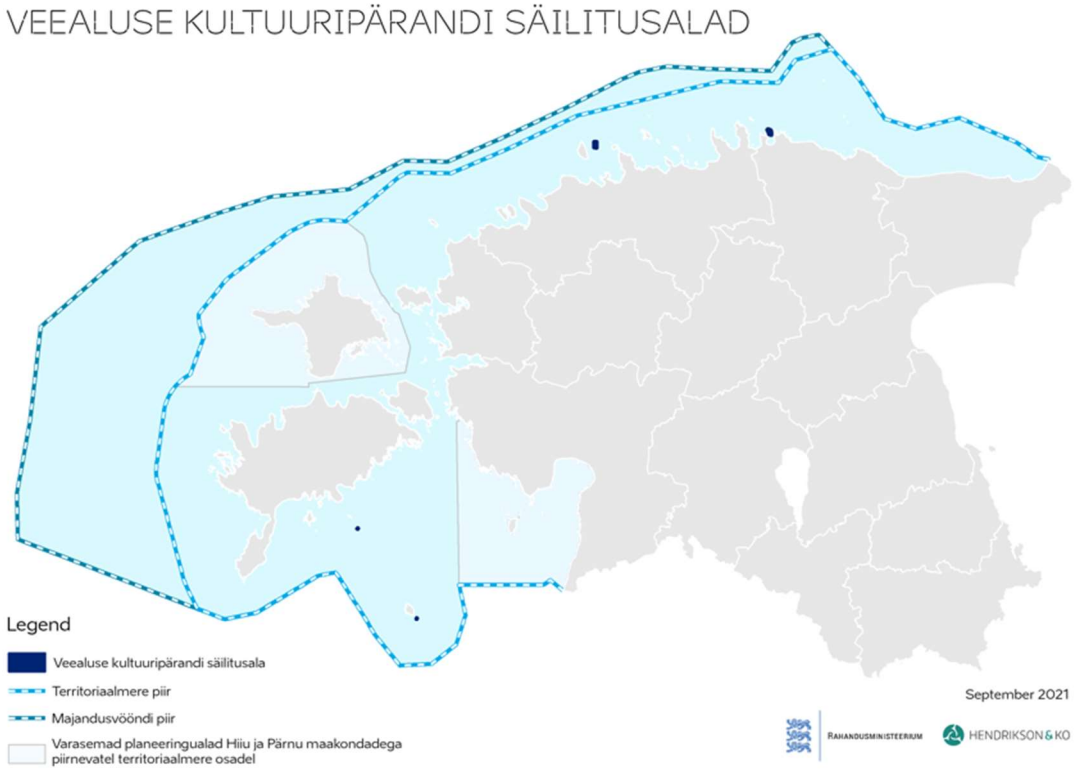
The maritime spatial plan will designate preservation areas for underwater cultural heritage , the location of which has been based on the following criteria:
- depth of 15-30 metres,
- location does not overlap with anchorage areas, refuges, fairways and water traffic areas,
- location does not overlap with wind energy development areas,
- location does not overlap with dumping areas,
- location does not overlap with mineral deposits, special areas of national defense, possible cables,
- if possible, proximity to wrecks that have already been sunk.

The purpose of designating the sites is to ensure the preservation of underwater cultural objects that have come to light, in a situation where they cannot be preserved in their original location, nor can they be preserved, stored or exhibited in museum collections. The transfer of underwater cultural objects shall be considered only in justified cases, which involve preliminary underwater archaeological research of the site in order to determine the condition of the thing, the extent of the archaeological layer and the feasibility of the transfer. If the condition of the thing allows it to be moved, underwater archaeological excavations must be performed at the site.

Wrecks of cultural value dating from the first half of the 20th century can pose a threat to the environment[66] in three ways:

1) fuel/fuel oils;
2) explosives;
3) ghost nets.

Wrecks of ships that were sunk in the first half of the 20th century, which pose a potential risk to the environment and are of cultural value, are not among the wrecks that can be moved and sunk in the preservation area.



Spatial layout 5.11.2. Preservation areas for underwater cultural heritage

[66] As a result of the project "Mapping, documentation and risk assessment of environmentally hazardous wrecks", which ended in 2019, ships that sank in the 20th century were mapped and their environmental hazards analysed. The assessment of the environmental hazards of ships that sank in the 20th century identified 72 ships that could pose a medium risk and one wreck that could pose a high risk to the environment in terms of fuel, based on historical sources. Of these, 44 wrecks have been found to date. The locations of the remaining 28 wrecks are still unknown, but their approximate locations are known. Studies have identified that the wreck's condition is also influenced by the amount of time the wreck has been submerged, how deeply it is buried in sediments, and chemical, physical and biological factors. It has been found that the deeper a wreck is buried in soft sediments, the better it resists external agents.

Guidelines:

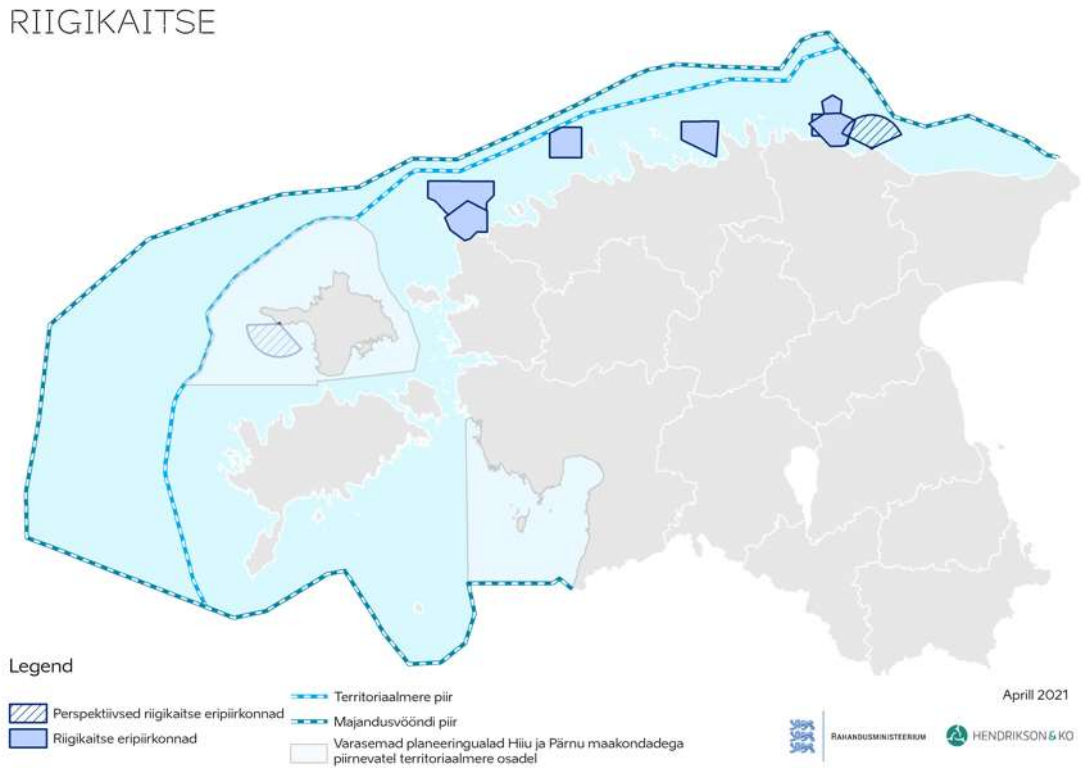
1. The design of "dive parks" to facilitate access to wrecks in monument-rich and highly visible marine areas is favored.
2. When planning new developments, and in case of the emergence of underwater cultural heritage, responsive and sustainable access to the original site for the purpose of observing or documenting the cultural heritage will be encouraged.
3. The importance of sea views of land-based cultural monuments is emphasized.

Conditions:

1. Anchoring, trawling, dredging, and dumping of solids are prohibited in the area of cultural monuments (site with a buffer zone). Other activities (e.g., fishing, diving) are allowed, provided they do not endanger the preservation of the cultural heritage.
2. Diving in an underwater monument and its protection zone may be carried out under the supervision of a competent person of a company providing diving services or on the basis of a diving permit.
3. Preference is given to the preservation of monuments in their original location.
4. An underwater monument and archaeological find may be relocated from its location to a preservation area designated by the plan (see spatial layout 5.11.2), if it is essential to ensure a high-level of public interest and the preservation of the monument in the existing environment is endangered (e.g., existing port waters, filled former marine areas) and its preservation cannot be guaranteed in any other way. Only such wrecks of cultural value that do not pose a threat to the environment, such as hulls of wooden ships, may be relocated to the preservation area. The conditions for relocation of underwater monuments and archaeological finds are determined by the National Heritage Board in accordance with the regulations on the relocation of monuments and archaeological finds and the sinking of things with underwater cultural value. Sinking of shipwrecks in the area designated by the plan will require registration of activities involving a risk to the aquatic environment in accordance with current legislation.
5. An underwater archaeological study shall be carried out before planning activities that may endanger the preservation of the underwater cultural heritage.

5.12 National defense

Consideration of national defense interests is necessary to ensure the state's defense capability. According to the National Defense Development Plan 2017-2026, the strategic goals of the state are prevention and management of threats and tensions related to national defense, increased deterrence against any military aggressor, faster development of the state's independent defense capability, the ability to resist attack by the actions of society as a whole, the ability to quickly resolve national defense crises and conflicts, increasing the coherence of Estonian society and ensuring the readiness to resist the information war. National defense interests at sea include the definition of special areas and the maintenance of airborne radar capability. Special areas of national defense have been formed by orders of the Minister of Defense to conduct anti-aircraft, artillery, naval or other types of exercises.



Spatial layout 5.12.1 Special Areas of National Defense

The MSP takes into account the spatial needs of national defense. The introduction of new areas is allowed, including outside the existing and prospective areas shown in Spatial layout 5.12.1. The creation of new areas shall be carried out in accordance with the procedure laid down by law and with the guidelines laid down in the MSP.

Guidelines:

1. The need for new special areas of national defense and the boundaries of existing areas may be adjusted in the light of changes in armaments, training methods, and other factors.
2. National defense activities shall, as far as possible, take into account other uses of the sea and the interests of local coastal communities.
3. Major blasting in the water should be planned so that it does not occur in a fish spawning season and in an area where a large amount of fish has accumulated in a limited area. In order to mitigate the potential impact, it is advisable to repel the fish out of the area with smaller charges before using larger explosive charges.
4. It is desirable to have an environmental action plan in place to ensure a minimum of damage to wildlife.
5. Special national defense areas are open for navigation all year round, except when closed for national defense training. During the exercises, maritime traffic is regulated, if necessary, in cooperation with the Transport Administration and the Police and Border Guard Board.

6. In the interest of safety, information on training shall be given in navigation information, including, where appropriate, in the mass media, on local government websites, and at local information points.

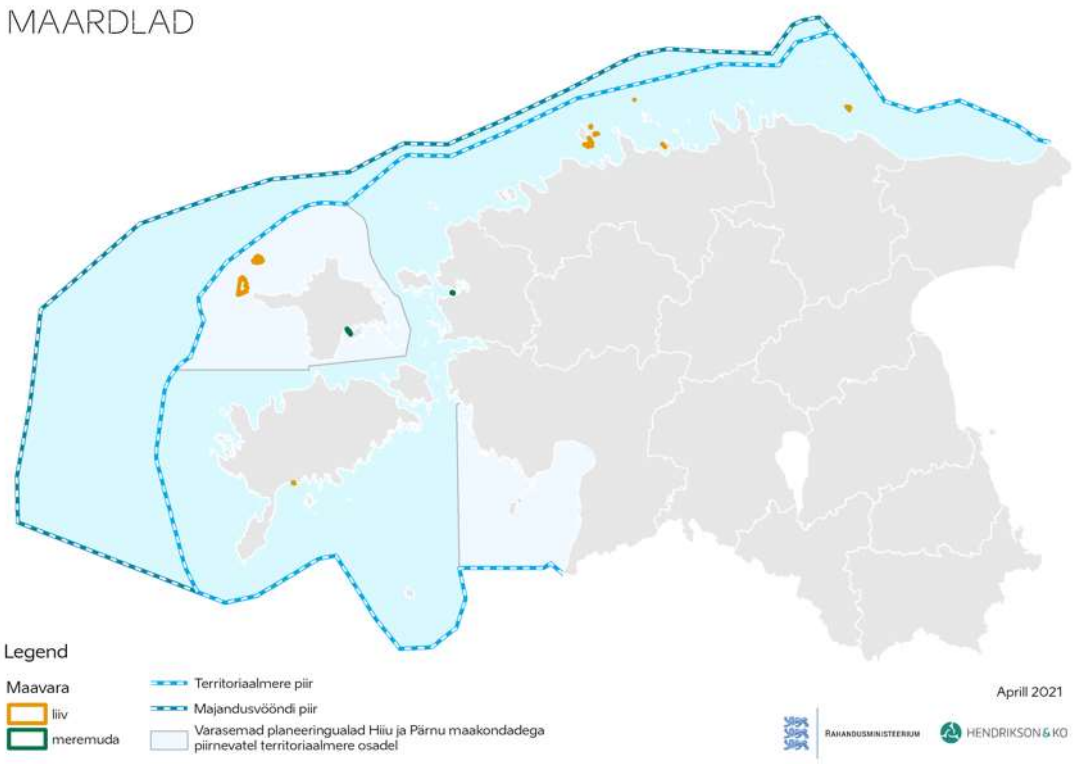
Condition:

1. Aquaculture development area cannot overlap with the special area of national defense.

5.13 Mineral resources

Mineral resources located in the Estonian marine space help to ensure the security of supply and relieve the burden on the resources of the earth's crust. The European Commission's Integrated Maritime Policy sees the extraction of mineral resources from the bottom of the sea as an important part of the blue economy.

It is estimated that[67] mining of non-living natural resources will continue in Estonia at current levels until 2030, but the environmental impact of mining activities is expected to increase in the long term as a result of pressure to exploit the resource more.



Spatial layout 5.13.1 Mineral deposits

No new mineral deposits are planned with maritime planning, but it is important to ensure that existing mineral resources remain minable. The designation of new mining assignments or deposits under the terms of the planning shall not be deemed to be a modification of the maritime plan.

[67] Marine Strategy Marine Environmental Assessment Report 2018

Guideline:

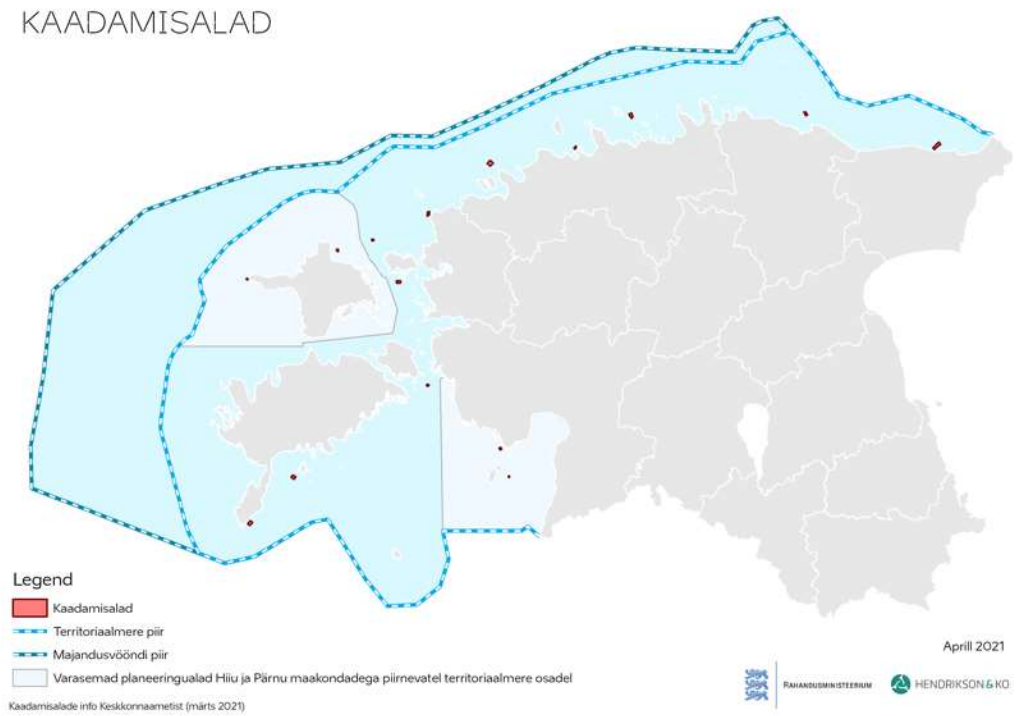
1. Mineral deposits that are located outside important fish spawning grounds are to be preferred.

Conditions:

1. If the mineral deposits overlap with the water traffic areas, the use of the mineral deposits shall be ensured, if necessary; in cooperation with Transport Administration ship traffic and shall be temporarily reorganized based on up-to-date water traffic data.
2. Mining of mineral deposits must be done in cooperation with the National Heritage Board so that the condition of the seabed's cultural assets is not affected by the mining activities.
3. In case of overlap of the mineral deposit with protected natural objects, the conditions set for the protection of natural values must be taken into account.
4. The permit process must include environmental measures to minimize impact, including mitigation of the emerging of suspended solids in the water column.

5.14 Dumping

Controlled use of the marine area for discharges or burying in the seabed is required for the disposal of sediments emerging from port dredging, and other materials. The main dredging in Estonian waters is the maintenance dredging of harbors and ship canals, where the dredged material is predominantly sand and fine-grained sediment. Dumping areas have been designated in the past (separately from the marine spatial plan) for regular large-scale dumping of dredging spoil[68].



[68] Kaadamisala on eelkõige ala, kuhu pikema aja jooksul planeeritakse regulaarselt hakata süvenduspinnast paigutama.

Spatial layout 5.14.1 Dumping areas (existing areas designated separately from the maritime spatial planning process).

No new dumping areas are planned with the maritime plan. Priority shall be given to the use of existing dumping areas. The designation of new dumping areas shall not be considered as a modification of the maritime plan provided that the conditions laid down in the maritime plan are complied with.

Guidelines:

1. When designating new dumping areas, avoid very shallow sea areas where possible to preserve their biodiversity, and to avoid coastal erosion.
2. As a general principle, dumping during an ecologically sensitive period (e.g., fish spawning season, etc.) should be avoided where technically and economically feasible.

Conditions:

1. Further use of existing dumping areas and the introduction of new areas will be specified during the process of issuing a permit for dredging of the water body or for dumping. Dumping shall be based on the conditions specified in the environmental permit.
2. Priority shall be given to areas outside protected natural objects when creating new dumping areas. When carrying out the proposed activity, the potential accompanying impacts must be assessed and adverse impacts must be excluded.
3. The choice of dumping site (including depth), time (e.g., outside fish spawning periods and critical period of juveniles) and technology (e.g., measures to limit the generation and spread of suspended solids) should take into account wider impacts on marine biota, but more narrowly impact on fish and thereby on the fishing industry along with its socio-economic aspect.
4. Aquaculture development areas cannot overlap with dumping areas.
5. The impact on existing bathing areas shall be taken into account when introducing new dumping areas. The dumping float must not impair the quality of the bathing water.
6. When planning new dumping sites, an underwater archaeological study of the undiscovered or unexplored underwater cultural heritage must be carried out.
7. When introducing new dumping areas, the Ministry of Defense should be consulted on the issue of the potential danger of floating mines, and if necessary, additional safety studies of the area should be conducted.
8. When introducing new dumping areas, the activities must be coordinated with the Transport Administration and the Environmental Board.

5.15 Permanent Connections

Estonia's national plan, "Estonia 2030+", considers the importance of a coherent settlement structure: access to services, educational institutions, and jobs. In addition to better linking of the functional areas, faster and more convenient connections to the

outside world are also aimed. Functioning transport infrastructure is key to achieving the objectives.

In the field of transport infrastructure, a national designated spatial plan and a strategic environmental impact assessment have been initiated for the planning of the permanent connection of the Suur Strait (tunnel or bridge) and designing the infrastructure needed for its operation[69]. The planning of the Tallinn-Helsinki railway tunnel in close cooperation with the Finnish state is likely to be the second major development project in the next decade. These are facilities with significant spatial impact, the implementation of which is expected to have a significant impact on the living and natural environment. The impact will depend to a large extent on the precise design of the permanent connections (e.g., bridge or tunnel, specific location, etc.). Both development projects require a thorough substantive approach, location-based research with feasibility and cost-benefit analysis. Also important is the public planning process for reaching a social contract.

The detailed planning of the permanent connection of the Suur Strait is based on the Saare County and Lääne County plans, which cover the terrestrial part of the potential permanent connection. For more detailed planning of the Tallinn-Helsinki railway tunnel, the general basis is provided by the national plan "Estonia 2030+", and Harju County Planning, which deals with the terrestrial part of the connection, provides basic guidance. When drawing up local government plans, the provisions of the county-wide spatial plans concerning permanent connections shall be taken into account.

Permanent connections are planned with separate and more precise plans at the state level by the decision of the Government of the Republic. In the case of connections with a neighboring country, such plans are drawn up on the basis of intergovernmental agreements. Simultaneously with preparation of the plan, an appropriate impact assessment, including a strategic environmental assessment, must be carried out. The planning area shall cover both the sea and the land area to the extent necessary to enable the most appropriate site selection for the particular site and the implementation of the planning.

5.16 Land-sea interactions

Most marine area activities are functionally or spatially related to land. Therefore, it is important to have a substantive link between marine and land-based planning and the integration of development documents. The topics covered in this chapter are also guidelines for planning by local authorities. The topics should be considered in the context of the preparation of the comprehensive plan, taking into account the specific local circumstances and the spatial development principles set by the comprehensive plan. References to the content chapters and previous studies are provided by topic to facilitate further development of the topic in the comprehensive and detail plans.

[69] Vabariigi Valitsus 18.06.2020 korraldus nr 213, https://www.riigiteataja.ee/akt/319062020004

Land-sea interactions include both broader impacts (e.g., agricultural pollution as a deteriorating factor for water) and site-specific spatial interfaces (ports, cable connections). The following summary is based on the approach to the MSP and focuses on spatial interfaces.

1. Ports and maritime transport
   The presence of ports is the main prerequisite for the exploitation of the marine area. Ports as a focal point for maritime transport provide access to fishing grounds, enable installation and maintenance of offshore facilities, development of freight and passenger traffic, carry out pollution control, and rescue at sea. Ports and maritime transport create preconditions for other maritime uses.
   Guidelines and conditions for ports and maritime transport are provided in Chapter 5.4.3.
2. Maritime recreational activities.
   The maritime recreational industry is related to both ports and coastal areas in general. In order to increase the recreational use of the sea, attention should be paid on the local level to the use of public beaches, sailing and powerboating sites, recreational areas, and public accesses to the sea. At the same time, temporal restrictions on the use of recreational watercraft (e.g. scooters) should be considered to avoid adverse impacts on fish fauna (movement in spawning grounds immediately during spawning). Free access to the sea and public use of the seashore is an essential element of quality of life, especially in and in the immediate vicinity of densely populated areas.
   The beach-based activities are planned based on the spatial development needs of the local government in the comprehensive plan. The planning of recreational activities can be based on the baseline studies made in the framework of the MSP (see http://mereala.hendrikson.ee/uuringud.html, baseline studies on both wildlife and socio-cultural issues).

   Guidelines and conditions for recreational activities are provided in Chapter 5.8.

3. Protection of marine culture.
   The preservation and viability of marine culture depend to a large extent on local interests and values. It is expedient to pay attention to the valuing of marine culture in the comprehensive plans of the local governments of the coastal area.

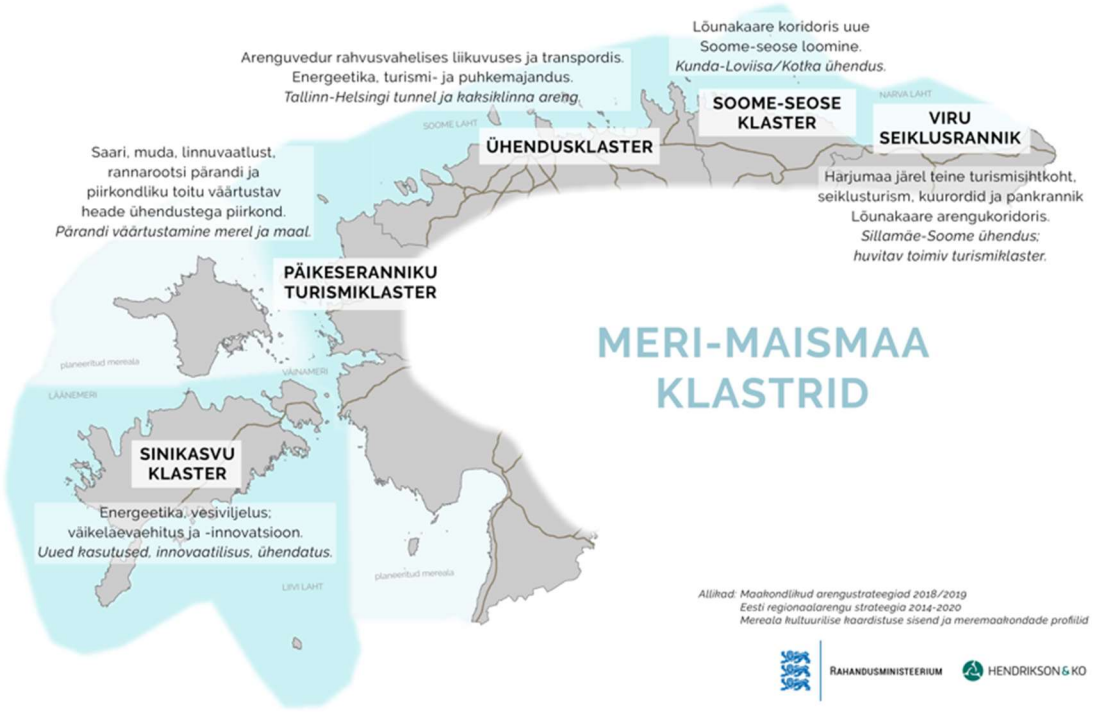
   Guidelines and conditions for marine culture are given in Chapters 5.10 and 5.11.

4. Cable corridors for offshore wind farms
   The operation of offshore wind farms requires real space also onshore through cable corridors. Infrastructure related to offshore activities (e.g. cable connections for wind farms) will be planned onshore through planning and design processes, in line with existing legislation.

   Guidelines and conditions for cable corridors are given in Chapters 5.6.6 and 5.7.

5. National defense
   Special areas of national defense have been formed to conduct anti-aircraft, artillery, and naval exercises. Training exercises can have an impact on land (noise) and can also involve land (land-to-sea shooting exercises).
   Guidelines and conditions for national defense are provided in Chapter 5.12.
6. Permanent Connections
   The possible establishment of permanent connections will have a major impact on the further development of coastal regions. The detailed planning of permanent connections is based on the Saare County, Lääne County, and Harju County planning guidelines and the relevant sectoral decisions of the state.
   The topic of permanent connections is covered in Chapter 5.15.
7. Viability of coastal areas.
   Offshore activities support the viability of coastal communities by providing jobs and creating a consumer community for services. In addition to traditional fishing and port services, the maintenance of new facilities (aquaculture, wind turbines), as well as the development of distributed energy, may be added in the long term. Guidelines for providing additional employment to traditional sea users are set out in Chapters 5.3.1, 5.3.2, and 5.6.5.
   Coastal areas are home to communities carrying diverse marine cultures-in addition to coastal fishermen, also surfers, sailors, birdwatchers, etc. In order to preserve the different values of marine culture, it is important to agree on synergies at the local level, e.g., in the context of the comprehensive planning process, taking into account local specificities.
   Marine culture mapping has been carried out in the framework of the MSP, where the most important keywords are drawn up by counties, which may be helpful in the preparation of comprehensive plans (see http://mereala.hendrikson.ee/lähteseisekohad.html, mapping of the cultural values of the sea). Source data for the assessment of social and cultural impacts collected as a baseline studies of MSP is also informative (see http://mereala.hendrikson.ee/uuringud.html).

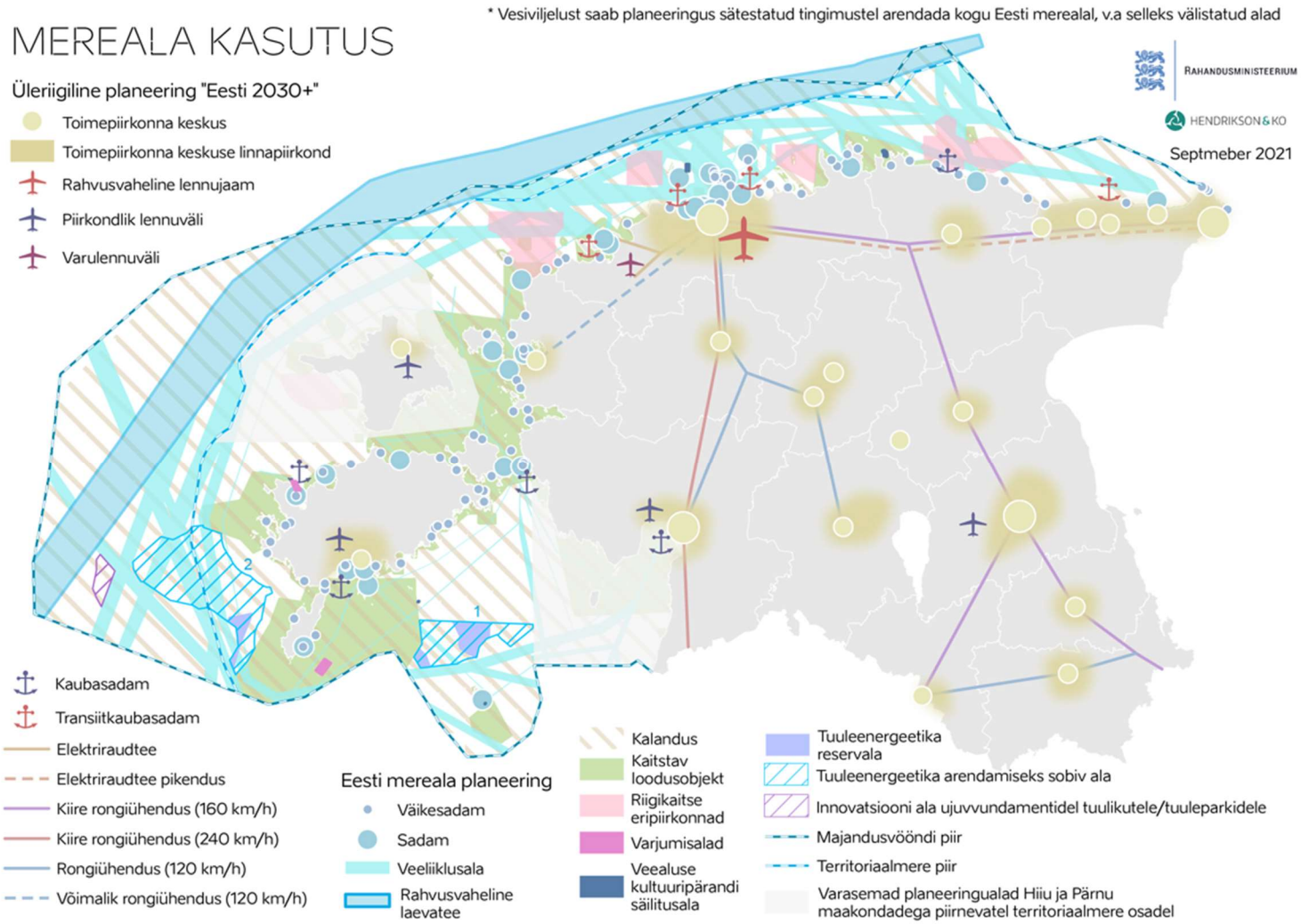
The regional specificity of the Estonian marine space and coastline is expressed by the so-called land-sea clusters. The development of land-sea clusters is based on the Estonian Regional Development Strategy 2014-2020, the newly developed maritime strategies of the counties (2018-2019), and the cultural mapping of the maritime counties carried out in the framework of the MSP. These clusters are based on the direct visions and development directions of the county strategies (e.g., the development of the Tallinn-Helsinki twin city in Harju County) as well as analytical generalizations based on the development strategy (e.g., Ida-Viru County as an Estonian adventure tourism region and ranking second as a place for visiting after Harju County). Cultural mapping carried out under the MSP (see http://mereala.hendrikson.ee/uuringud.html collection and analysis of source data to assess the social and cultural impacts; http://mereala.hendrikson.ee/lähteseisukohad.html, regional portraits) provided input on regional specificities, strengths, and potentials. The keywords in the cluster names help to strengthen the local specificity for further development.



Spatial layout 5.16.1 Land-sea clusters

The above issues, together with the guidelines and conditions of this plan, must be taken into account in the preparation of comprehensive plans for the municipalities with a sea border and other development documents.

The following spatial layout shows the general picture of the spatial trends of the Estonian marine and terrestrial areas.



Spatial layout 5.16.2. Use of the marine area and National Spatial Plan *Estonia 2030+*

5.17 Refinement of the national plan "Estonia 2030+"

The Maritime Spatial Plan has been drafted as a thematic plan of the national plan, which complements and refines the "Estonia 2030+" solution.

The MSP specifies the national plan for electricity supply. The national plan foresaw the construction of a high-voltage ring line (circular line) connecting the islands of western Estonia and the mainland, which will allow better connection of offshore wind farms to the grid, in order to increase security of supply on islands and to promote the use of local renewable energy sources.

In the process of elaborating the MSP, a West-Estonian ring line is foreseen in the direction of Saaremaa. The connection of Hiiumaa to the 110kV line has been abandoned on the basis of input from the Estonian energy system operator Elering AS. The principal direction indicated in the national plan is not suitable for connecting offshore wind farms, as the planning of a high-voltage line corridor across Hiiumaa is not possible due to constraints. Elering AS has confirmed that the 110 kV connection to Hiiumaa proposed in the national plan will not be realised in the next 15 years. Electricity network developments are planned on a needs basis. Elering AS has clarified that a new 110 kV power line has just been completed in the Suur Strait and that no other major transmission developments are planned in this direction in the next 15 years. Elektrilevi is in the process of strengthening the Saare-Hiiu connection, which will also improve the security of supply in Hiiumaa.

6. DEFINITIONS

The following list summarises explanations of definitions used in the Estonian maritime spatial planning and impact assessment. The definitions are based on the purpose of the plan and the issues that have emerged during the planning and impact assessment process.

Relevant impact – Any impact, including both significant and non-significant, associated with the implementation of a specific plan that needs to be evaluated.

Offshore – the deeper part of the sea beyond the coastal zone, and the islands, where the formation and movement of water masses do not directly reflect the impact of the coast.

Biosecurity – the need to prevent the introduction of pathogens and parasites from farms into the nature and vice versa, as well as the movement of pathogens and parasites between different nearby farms.

Distributed energy – the production of electricity generated at the consumer's site in micro- and mini-generation and heating plants located in isolated and dispersed locations

HELCOM – the Helsinki Commission, also the Baltic Marine Environment Protection Commission, which organizes international co-operation under the Convention on the Protection of the Marine Environment of the Baltic Sea Area.

Dumping – any deliberate disposal at sea or the burial in the seabed of wastes or other matter or objects from a ship, aircraft, platform or other offshore installation.[70] Dumping of waste is not allowed in the Baltic Sea and dumping is only allowed from dredging surfaces.

Dumping area – a dumping area is, in particular, an area where dredged material is planned to be placed on a regular basis over a longer period of time. A single dumping does not immediately transform an area into a dumping area.

Kavandatav tuulepark tuulepark, mille loamenetlus on lõpule viidud või mille osas on langetatud positiivne vaheotsus (nt on avalikustamiseks esitatud KMH aruanne). Käsitluses tuginetakse Euroopa Komisjoni teatisele nr 2021/C 437/01 „Natura 2000 aladega seotud kavade ja projektide hindamine. Metoodilised suunised elupaikade direktiivi 92/43/EMÜ artikli 6 lõigete 3 ja 4 sätete kohta“, mille järgi koosmõju käsitlevas sättes peetakse silmas teisi kavasid või projekte, mis on lõpule viidud, mis on heakskiidetud, kuid lõpule viimata, või mille kohta on tehtud ettepanek (st on esitatud heakskiitmis- või nõusolekutaotlus).

Proposed wind farm – a wind farm for which the permit procedure has been completed or for which a positive interim decision has been taken (e.g. an EIA report has been

[70] Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LC), 1972 (and the 1996 London Protocol); veeseadus

submitted for public consultation). The approach is based on the European Commission Communication 2021/C 437/01 "Assessment of plans and projects in relation to Natura 2000 sites – Methodological g uidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC", whereby the provision on interactions refers to other plans or projects which have been completed, which have been approved but not completed, or which are proposed (i.e. where a request for approval or consent has been submitted).

Environmental measures - measures for the prevention, reduction and mitigation, and, in justified cases, remediation of adverse environmental impacts accompanying the implementation of activities proposed pursuant to the Environmental Impact Assessment and Environmental Management System Act. Environmental measures also include environmental monitoring.

Average high sea level – the average sea level plus the average wave height of the corresponding sea area.

EIA – Environmental Impact Assessment. In a narrower sense, environmental impact assessment is the assessment of the impact at the planning level of a specific activity, i.e., the so-called project level (construction project, superficies license, environmental permit etc.).

SEA – Strategic Environmental Assessment. The SEA is used to assess the impact of planned activities at a more general level (strategic development documents, such as planning, development plans, etc.), i.e., at a "higher altitude." The SEA is more general and less detailed than the EIA.

Guest Harbor – A small-craft harbor for recreational boats, with a high culture of service and versatile support services and amenities.

Fairway – that part of the waterway that is most suitable for navigation and published in navigation information and, where appropriate, marked in nature. The location of the fairway is mostly due to natural conditions and changing it would cause significant disruption to water traffic. Traffic separation schemes are also considered as part of the fairway.

The Exclusive Economic Zone (EEZ) – part of the marine area located outside the territorial sea adjacent to the latter, the boundaries of which are determined by agreements between the Republic of Estonia and the neighboring countries. In the exclusive economic zone, the coastal state has priority over the living marine resources and the exclusive right to exploit the natural resources of the seabed and to establish artificial islands. The exclusive economic zone is governed by the United Nations Convention on the Law of the Sea (UNCLOS).

Conditions of use of the marine area – the plan sets out the prerequisites and requirements for the use of the marine area by functions and areas to ensure sustainable and balanced use of the marine area.

Implementing the MSP – authorizing the use of the marine area and carrying out activities in accordance with the guidelines and conditions agreed upon in the plan.

Marine culture – all human activities and their impact on the sea. Marine culture is created by users of the marine area and the coast: fishermen, shipbuilders, vacationers, surfers, divers, etc., as well as the tangible cultural heritage located in the marine area. Marine culture encompasses the lives of both seafarers and coastal people, as well as the expression of the maritime sphere in culture.

Sea county – a county that has a sea border.

Nautical mile – the unit of length. One nautical mile equals one arc minute (latitude minute) of the Earth's meridian. For the purposes of this plan, the length of the nautical mile is 1852 meters.

Marine transport – in a narrower sense, a mode of transport, in a wider sense, a domain that includes among other things, ships, ports and shipping routes, goods and passengers, which together constitute a fully functioning system and individually would not exist in this form.

Bunkering – Supplying ships with motor fuel or oils, discharge of bilge and tank wash water and oil residues.

Permanent connection – for the purposes of this plan, the part of the transport infrastructure which allows continuous movement over the sea.

International ship traffic area – the area through the Estonian EEZ where there are vessel traffic management measures approved by the International Maritime Organization (IMO), with a safety margin added according to the methodology for determining the safety margin for water traffic areas. International ship traffic areas are considered equivalent to fairways in the context of the MSP.

Wheel effect – A situation where the rotors of the wind turbines lined up one behind the other overlap, creating a "spinning wheel" on the horizon that attracts the observer's attention. This effect is to be avoided when deciding on the siting of the wind turbines, see more details in „Guidelines for Methodological Recommendations for Visual Impact Assessment to Promote the Development of Offshore Windfarms", AB Artes Terrae OÜ, 2020.

Special National Defense Area – a special area of the sea formed by order of the Minister of Defense for conducting anti-aircraft, artillery, naval or other sorts of exercises.

Blue economy, i.e *blue growth* – sustainable maritime economy, covering all areas related to the sea: tourism, renewable energies, aquaculture, fisheries, biotechnology, use of seabed mineral resources, etc.

Internal waters – is the part of the marine area lying between the baselines of the territorial sea and the coast. The baseline of the territorial sea is the imaginary line connecting the points of land, islands, islets, rocks, and individual rocks protruding from the water that is the furthest from the coast.

Guideline – general guidance from the plan following of which is desirable and based on the long-term vision and the needs for the combined use of the marine area. Compliance with the guideline will be monitored by the authority responsible for the area. Deviations from the guideline must be made in collaboration with other involved or affected parties to ensure the full implementation of the planning solution.

Conditions – requirements set by the plan, the compliance with which is mandatory.

Territorial sea – a part of the marine area adjacent to the internal waters, with a width of 12 nautical miles. Exceptions may be made to the width of the territorial sea on the basis of international conventions and agreements with neighboring countries. The jurisdiction of the Estonian state extends to the territorial sea. The external border of the territorial sea is the state border of Estonia. The average depth of the territorial sea is approximately 30 m. The territorial sea, together with the internal waters, shall be considered as territorial waters.

Wind energy development area – an area designated by this plan as suitable for wind energy development.

New developments – both new uses of the sea and developments related to traditional uses of the sea.

Study – responding to a research objective, using appropriate and feasible methods, e.g. analysis of existing data, modelling, fieldwork.

Viewpoint – a fixed, valued place on the coast, identified in the framework of the impact assessment of the plan.

Water traffic area – an area used intensively for waterborne traffic not published in navigation information. The areas have been designated in cooperation with the Transport Administration (for methodology see Chapter 5.3.4) and taking into account the need to allow for other uses of the sea. When implementing the plan, up-to-date data from the Transport Administration shall be used for water traffic areas.

Preservation area of an underwater cultural heritage – an area designated by this plan for the preservation of underwater objects of cultural value which have come to light, in situations where they cannot be preserved in their original location or conserved, stored or exhibited in museum collections. Underwater cultural heritage is defined as any cultural, historical or archaeological trace of human presence that has been partially or totally submerged, temporarily or permanently, for at least 100 years, for example:
- monuments, structures, buildings, artefacts and human remains, together with their archaeological and natural surroundings;
- vessels, aircraft and other vehicles or parts thereof, their cargo or other contents, together with their archaeological and natural surroundings;
- prehistoric objects.

Aquaculture – means the keeping or rearing of aquatic organisms (fish, shellfish, crustaceans, and aquatic plants (e.g., algae) by use of the technology means to obtain

their production in larger quantities than the natural environment status conditions would permit.

Small-craft harbor – a port or a part of a port where port services are provided to watercraft with an overall length of less than 24 meters.

Network – used in this document as an annex to ports and (recreational craft) shipping routes and infrastructure and nature conservation topics to cover and generalize objects that are inherently connected as spatial networks. The term does not include officially organized or legally defined sets or lists (port network, recreational craft route network, etc.).

Ecosystem service – features of ecosystems necessary for people, such as food, recreation facilities, climate-control features, etc. Ecosystem services are valued but generally not sold (they have no market value).

Ecosystem based approach – according to the Convention on Biological Diversity, the ecosystem-based approach is a strategy for the integrated management of land, water and living resources that pays equal attention to both protection and sustainable use.