Draft Maritime Spatial Plan for the Belgian part of the North Sea

Draft Royal Decree to establish the marine spatial plan – Chapters "Definitions and articles with respect to the binding character" and "zoning and preconditions"

Chapter 1. – Definitions and articles with respect to the binding character

Article 1. For application of this Decree, the following definitions apply:

1° Active marine management measures: measures that making modifications, e.g. installing constructions, in the marine environment with the intention of increasing the natural value;

2° Seabed-disturbing fishery techniques: active fishing techniques that disturb the seabed habitat by dragging the fishing equipment along the seabed;

3° Alternative seabed-disturbing fishery techniques: active seabed-disturbing fishing techniques which have modifications to reduce the impact on the seabed;

4° Traditional seabed-disturbing fishery techniques: active seabed-disturbing fishing techniques which do not have modifications to reduce the impact on the seabed;

5° Non-seabed-disturbing fishing techniques: passive fishing techniques that do not disturb the seabed habitat as this type of fishery only places static fishing equipment in the water;

6° Coastal fishery: fishery active with fishing vessels with a gross register tonnage of 70 ton or less;

7° Law: the law of 20 January 1999; on the protection of the marine environment and on the organization of maritime spatial planning in the sea areas under Belgian jurisdiction;

8° Baseline: the low water line along the coast which is determined by the lowest astronomical tide (LAT);

9° Royal decree Domain concessions: Royal Decree of 20 December 2000 concerning the conditions and procedure for assigning domain concessions for the construction and exploitation of installations for generating electricity from water, tides or wind, in the sea areas in which Belgium can exercise jurisdiction in accordance with international sea law;

10° Anchorage area: a zone predestined for anchoring;

11° Area to be avoided: a routing system within an established zone in which shipping is extremely dangerous, or in which it is extremely important to avoid accidents, and that should be avoided by all ships or by some types of ships;

12° Deep water route: A determined route which has been accurately surveyed for clearance of obstacles as indicated on the map;

13° Traffic separation scheme: A routeing system aimed at separating opposing traffic streams by appropriate means and by setting up traffic routes;

14° Precautionary area: a routeing system within a designated zone where ships must navigate with special precaution and in which a direction for the shipping traffic can be recommended.

Art. 2. Annex 1 to this Decree, "Spatial analysis of the sea areas", as required by Article 5, §4, 1° of the law, is established as an informative section.

Art. 3. Annex 2 to this Decree "Long-term vision, objectives, indicators and spatial policy decisions", as required by Article 5, §4, 2° and 3° of the law is binding for the federal government.

Art. 4. Annex 3 to this Decree "Measures for implementing the marine spatial plan", as required by Article 5, §4, 4° of the law is binding for the federal government.

Art. 5. Articles 6 to 15 are binding for the authorities and for the legal subjects.

Chapter 2. – Zoning and preconditions

Section 1: The good environmental status in the BPNS – map 1 of annex 4

Art. 6. §1. In order to the achieve the good environmental status, 5 zones are delimited in the Belgian sea areas to preserve the sea bottom integrity:

1° Within the zone, graphically represented on the map as zone 1, with coordinates (in projection WGS 84):

1° 51.09469 N 2.54140 E
2° 51.14990 N 2.49385 E
3° 51.17053 N 2.75699 E
4° 51.22609 N 2.70173 E

the existing coastal fishery is allowed to continue all fishing activities on condition that beams with roller shoes are being applied on the fishing equipment. For the shrimp fishery the sieving net is obliged. New vessels are allowed to fish in the zone with non-seabed-disturbing fishing techniques. Existing vessels are allowed to replace their vessel.

2° Within the zone, graphically represented on the map as zone 2, with coordinates (in projection WGS 84):

1° 51.22179 N 2.72067 E
2° 51.26197 N 2.68164 E
3° 51.27949 N 2.87263 E
4° 51.31412 N 2.82199 E

only non-seabed-disturbing fishing techniques and the testing of alternative seabed-disturbing fishing techniques are allowed. An interim period is established during which existing fishing techniques in the zone are still allowed.

3° Within the zone, graphically represented on the map as zone 3, with coordinates (in projection WGS 84):

1° 51.42224 N 2.58086 E
2° 51.44485 N 2.63069 E
3° 51.45833 N 2.52708 E
4° 51.48100 N 2.57800 E
5° 51.48834 N 2.45091 E
6° 51.51663 N 2.48007 E

only non-seabed-disturbing fishing techniques are allowed.

4° Within the zone, graphically represented on the map as zone 4, with coordinates (in projection WGS 84):

1° 51.39540 N 2.51862 E
2° 51.42010 N 2.49147 E
3° 51.42224 N 2.58086 E
4° 51.44974 N 2.41779 E
5° 51.45833 N 2.52708 E
6° 51.48821 N 2.45186 E

only non-seabed-disturbing fishing techniques and the testing of alternative seabed-disturbing fishing techniques are allowed.

5° Within the sectors, 2a, 2b and 2c, delineated in article 11, §1, an annual reduction of the extractable volume of sand applies, as established by the Royal Decree of 1 September 2004 as regards the conditions and the concession assignment procedure for the exploration and the exploitation of mineral and other non-living resources in the territorial sea and on the continental shelf. The extraction of gravel is prohibited.

§2. In order to preserve the seabed integrity, the fishery within the zone of 4,5 nautical miles offshore is prohibited for fishing vessels having a gross register tonnage of more than 70 ton. This zone is measured from the base line serving as the reference for the width of the territorial sea of Belgium.

§3. The measures taken in conformity with the paragraphs 1 and 2 are subject to the European regulations. These measures enter into force after the approval by the European Commission.

Section 2: Nature conservation zones – map 1 of annex 4

Art. 7. §1. The special zone for nature conservation, the 'Vlaamse Banken', graphically represented on map 1 of annex 4 of this Decree, is delineated by the baseline and a line that connects the following points (in projection WGS 84):

1° 51.09352 N 2.54160 E
2° 51.13665 N 2.50399 E
3° 51.15291 N 2.48957 E
4° 51.26833 N 2.38900 E
5° 51.30435 N 2.37005 E
6° 51.36476 N 2.33860 E
7° 51.45200 N 2.29200 E
8° 51.52700 N 2.45200 E
9° 51.51971 N 2.47158 E
10° 51.48100 N 2.57800 E
11° 51.41317 N 2.67678 E
12° 51.36904 N 2.74147 E
13° 51.27833 N 2.87432 E
14° 51.23846 N 2.91702 E

This zone is graphically represented in Annex 4, Map 1.

§2. This area is set aside for protecting habitat types "permanently with sandbanks slightly covered with sea water" and "reefs" and for the following sorts of species:

1° 1103 Alosa fallax
2° A002 Gavia arctica
3° A001 Gavia stellata
4° 1364 Halichoerus grypus
5° A183 Larus fuscus
6° A187 Larus marinus
7° A177 Larus minutus
8° A065 Melanitta nigra
9° 1095 Petromyzon marinus
10° 1365 Phoca vitulina
11° 1351 Phocoena phocoena
12° A005 Podiceps cristatus
13° A195 Sterna albifrons
14°A193 Sterna hirundo
15° A191 Sterna sandvicensis

In this area, activities can take place which:
- have completed the appropriate assessment insofar as they are subject to this procedure;
- are not otherwise prohibited or restricted.

§3. Within the zone mentioned in §1, a zone called the 'Trapegeer Stroombank' (sandbank) zone is delimited, of which the coordinates (in projection WGS 84) are as follows:

1° 51.09367 N 2.54367 E
2° 51.13750 N 2.50533 E
3° 51.27917 N 2.87567 E
4° 51.23933 N 2.91850 E

The following activities are prohibited within this zone:
1° civil engineering activities;
2° industrial activities;
3° activities by publicity and commercial companies;
4° dumping dredging spoil and inert materials of natural origin.

§4. There are three special protection zones for birds delineated, the coordinates of which are the following:

1° a zone, named SBZ 1, delineated by the baseline and a line connecting points 1 to 5, the coordinates (in projection WGS 84) of which are the following:

1° 51.11200 N 2.59733 E
2° 51.12933 N 2.53867 E
3° 51.20933 N 2.51400 E
4° 51.22550 N 2.65100 E
5° 51.14867 N 2.69883 E

2° a zone, named SBZ 2, delimited by the baseline and a line connecting points 1 to 8, the coordinates (in projection WGS 84) of which are the following:

1° 51.21017 N 2.85717 E
2° 51.23800 N 2.85517 E
3° 51.24666 N 2.75467 E
4° 51.35500 N 2.82400 E
5° 51.33383 N 2.95666 E
6° 51.29567 N 2.98983 E
7° 51.26967 N 2.91867 E
8° 51.24600 N 2.94133 E

3° a zone, named SBZ 3, delimited by the baseline and a line connecting points 1 to 9, the coordinates of which (in projection WGS 84) are the following:

1° 51.32450 N 3.14383 E
2° 51.34480 N 3.07983 E
3° 51.36217 N 3.06667 E
4° 51.39750 N 3.17300 E
5° 51.37833 N 3.25133 E
6° 51.35317 N 3.27217 E
7° the point situated on the baseline, 500m of the eastern breakwater of the port of Zeebrugge
8° 51.36193 N 3.22113 E
9° 51.36000 N 3.23666 E

§5. In the special protection zones for birds the following activities are prohibited:

1° civil engineering activities;
2° industrial activities;
3° activities by publicity and commercial companies;

§6. In “SBZ 1” and “SBZ 2” the following activities are prohibited in the period from 1 December till 15 March, in accordance with art. 8, §3 Law:

1° the exercise with helicopters at a height of less than 500 ft;
2° the passage of high speed vessels, with the exception of exceptional circumstances;
3° water sport competitions.

§7. The minister consults with the minister having defense as his competency with respect to the planning of shooting exercises and other military activities off Lombardsijde, in accordance with article 7, §4, Law.

§8. There is a targeted marine reserve, the 'Baai van Heist' delineated by the baseline and a line connecting points 1 to 3, the coordinates of which (in projection WGS 84) are the following:

1° point situated on the baseline 500m of the eastern breakwater of the port of Zeebrugge
2° 51.36193 N 3.22113 E
3° 51.36000 N 3.23667 E

§9.In the targeted marine reserve all activities are prohibited, with the exception:

1° the legal exceptions as mentioned in article 8, § law, with the exception of shipping, notwithstanding the intervention of the government or in execution of 2° and 3°;
2° the installation and the maintenance of cables and pipelines;
3° the digging of trenches and the elevation of the seafloor;

4° the activities that fall under the application of the users conventions.

Section 4: Energy generation and storage, pipelines and cables – map 2 of annex 4

Art. 8. §1. A zone will be delineated, for awarding domain concessions for the construction and exploitation of installations for generating electricity from water, tides or wind, the coordinates (in projection WGS 84) of which are the following:

1° 51.54378 N 3.08255 E
2° 51.54762 N 3.07506 E
3° 51.58703 N 3.00983 E
4° 51.73992 N 2.75508 E
5° 51.73175 N 2.71363 E
6° 51.70583 N 2.70500 E
7° 51.65518 N 2.75182 E
8° 51.63633 N 2.79180 E
9° 51.61900 N 2.80177 E
10° 51.60023 N 2.84277 E
11° 51.59050 N 2.88733 E
12° 51.56717 N 2.92817 E
13° 51.54680 N 2.88365 E
14° 51.48949 N 2.97330 E
15° 51.51200 N 3.04002 E

This zone is graphically represented in annex 4, map 2.

§2. Within the zone delineated in paragraph 1, concessions may be awarded for installations for generating electricity from water, tides or wind, based upon the Royal decree Domain concessions. This activity takes precedence over other activities in this zone.

§3. A zone will be delineated, for installations for the transport of electricity, the coordinates (in projection WGS 84) of which are the following:

1° 51.56097 N 2.83692 E
2° 51.56961 N 2.82388 E
3° 51.59050 N 2.88733 E
4° 51.59701 N 2.78247 E
5° 51.60023 N 2.84277 E
6° 51.60974 N 2.75722 E
7° 51.61900 N 2.80177 E
8° 51.63633 N 2.79180 E

This zone is graphically represented in annex 4, map 2.

§4. Within the zone delineated in paragraph 3, permission can be granted for the construction and exploitation of an installation for the transport of electricity (the so called power outlet at sea). This activity takes precedence over other activities in this zone.

Insofar as the previously-mentioned destination is not threatened, this installation can also be used for the construction and use of an installation for ships to moor.

Insofar as the previously-mentioned destinations are not threatened, active marine management measures can be permitted within this zone.

Insofar as the previously-mentioned destinations are not threatened, the construction and exploitation of a visitors' centre can be permitted in this zone.

§5. Zones will be designated for installations as specified in Article 6 of the law of 29 April 1999 concerning the organization of the electricity market, which work based on electrically-generated hydropower and are intended for storing energy, the coordinates of which are the following (in projection WGS 84):

1° 51.29567 N 2.98983 E
2° 51.32699 N 2.96262 E
3° 51.33327 N 3.09310 E
4° 51.35000 N 3.01167 E
5° 51.36217 N 3.06667 E

1° 51.36664 N 3.220603 E
2° 51.36809 N 3.226364 E
3° 51.37058 N 3.230481 E
4° 51.37416 N 3.236557 E
5° 51.37642 N 3.23815 E
6° 51.37918 N 3.237621 E
7° 51.38991 N 3.228019 E
8° 51.39073 N 3.221402 E
9° 51.39116 N 3.201364 E
10° 51.39003 N 3.201247 E
11° 51.38873 N 3.207099 E
12° 51.38558 N 3.211232 E

This zone is graphically represented in Annex 4, Map 2.

§6. Within the zone delineated in paragraph 5, the construction and exploitation of installations for energy storage is permitted. With respect to the delineated zone at the Wenduine Bank, this installation needs to be limited to a maximum surface of a third of this zone. This activity takes precedence over other activities in this zone.

The projects mentioned in the first part are only permitted if active marine management measures are developed.

Insofar as it is reconcilable with the projects mentioned in the first and second part, the construction and exploitation of a visitors' centre is permitted in this zone.

§7. A zone will be delineated, for laying and exploiting pipelines and cables, the coordinates of which are the following (in projection WGS 84):

1° 51.21070 N 2.85817 E
2° 51.23093 N 2.90430 E
3° 51.28349 N 2.76031 E
4° 51.28595 N 2.37974 E
5° 51.30274 N 2.42496 E
6° 51.30336 N 2.80859 E
7° 51.31310 N 2.47142 E
8° 51.31600 N 3.10761 E
9° 51.31606 N 2.73451 E
10° 51.32581 N 2.70472 E
11° 51.32910 N 2.78823 E
12° 51.33221 N 2.54228 E
13° 51.33621 N 3.16074 E
14° 51.34149 N 3.16592 E
15° 51.34740 N 2.49617 E
16° 51.34898 N 3.00950 E
17° 51.35000 N 3.01167 E
18° 51.35001 N 3.26645 E
19° 51.36217 N 3.06667 E
20° 51.36761 N 2.55813 E
21° 51.37353 N 3.11817 E
22° 51.38022 N 2.51988 E
23° 51.38716 N 2.32678 E
24° 51.39031 N 3.27039 E
25° 51.41468 N 2.48173 E
26° 51.43080 N 2.55651 E
27° 51.44905 N 2.58660 E
28° 51.45184 N 2.50861 E
29° 51.47897 N 2.55332 E
30° 51.50081 N 2.76139 E
31° 51.52843 N 2.72023 E
32° 51.53727 N 3.08321 E
33° 51.55406 N 3.07476 E

34° 51.56961 N 2.82388 E
35° 51.59701 N 2.78247 E
36° 51.62999 N 2.81892 E
37° 51.67464 N 2.87374 E
38° 51.76925 N 2.43857 E
39° 51.79914 N 2.47512 E

This zone is graphically represented in annex 4, map 2.

§8. Laying pipelines and cables preferably occurs in this zone. Deviations can be allowed by the competent ministers, provided there are sufficiently motivated compulsive reasons.

§9. Activities that make the laying or exploiting of pipelines and cables impossible or restrict them are forbidden in the zone delineated in paragraph 7.

§10. A zone is delineated, serving as a reference zone for monitoring the impact on the environment of sand extraction and wind farms. The coordinates of this zone are the following (in projection WGS 84):

1° 51.5473 N 2.8831 E
2° 51.5322 N 2.9082 E
3° 51.5157 N 2.8600 E
4° 51.5322 N 2.8335 E

Sand and gravel extraction is prohibited in this area.

This zone is graphically represented in annex 4, map 5.

Section 4: shipping, dumping dredging spoil and port development – map 3 of annex 4

Art. 9. §1. Shipping is allowed everywhere in the Belgian sea areas barring different provisions that set up a ban or impose certain conditions.

§2. The important traffic streams in the sea areas which are necessary for shipping to be able to land at or use the Belgian ports and Scheldt ports in or order to navigate the sea area safely and efficiently are graphically represented in annex 4, map 3.

The most important traffic streams are:
1° Shipping International Maritime Organisation traffic separation scheme Noordhinder South, of which the coordinates are the following (in projection WGS 84):

1° 51.45632 N 2.29011 E
2° 51.54573 N 2.24312 E

3° 51.55727 N 2.23704 E
4° 51.59507 N 2.24730 E
5° 51.60333 N 2.45417 E
6° 51.61226 N 2.25197 E
7° 51.75700 N 2.66533 E
8° 51.79800 N 2.58783 E
9° 51.80417 N 2.48031 E
10° 51.80883 N 2.56733 E
11° 51.83961 N 2.50904 E

2° Shipping precautionary area Noordhinder Junction, of which the coordinates are the following (in projection WGS 84);
1° 51.75700 N 2.66533 E
2° 51.76742 N 2.71819 E
3° 51.83960 N 2.50904 E
4° 51.87528 N 2.53796 E

3° Shipping International Maritime Organisation traffic separation scheme Westhinder, of which the coordinates are the following (in projection WGS 84):

1° 51.30923 N 2.36744 E
2° 51.31216 N 2.36590 E
3° 51.33249 N 2.40865 E
4° 51.33702 N 2.35284 E
5° 51.33711 N 2.35279 E
6° 51.33875 N 2.35207 E
7° 51.35650 N 2.52217 E
8° 51.35749 N 2.49865 E
9° 51.36201 N 2.33970 E
10° 51.37294 N 2.53513 E
11° 51.37326 N 2.49907 E
12° 51.37429 N 2.53619 E
13° 51.37463 N 2.53642 E
14° 51.37506 N 2.49884 E
15° 51.37916 N 2.44031 E
16° 51.39083 N 2.54917 E
17° 51.39083 N 2.49865 E

4° Shipping International Maritime Organisation precautionary area Westhinder, of which the coordinates are the following (in projection WGS 84):

1° 51.34750 N 2.77199 E
2° 51.35650 N 2.52217 E
3° 51.37294 N 2.53509 E
4° 51.37294 N 2.53529 E
5° 51.37463 N 2.53642 E
6° 51.38967 N 2.77017 E
7° 51.39083 N 2.54917 E
8° 51.39083 N 2.61533 E
9° 51.40417 N 2.74200 E

5° Shipping International Maritime Organisation area to be avoided Westhinder, of which the coordinates are the following (in projection WGS 84):

1° 51.39083 N 2.61533 E
2° 51.39683 N 2.67167 E
3° 51.39917 N 2.61500 E
4° 51.40667 N 2.67167 E

6° Shipping International Maritime Organization deep water route West Scheldt approach, of which the coordinates are the following (in projection WGS 84):

1° 51.38967 N 2.77017 E
2° 51.40417 N 2.74200 E
3° 51.40883 N 2.99867 E
4° 51.41050 N 2.96533 E
5° 51.41717 N 3.04750 E
6° 51.41717 N 2.81750 E
7° 51.41750 N 2.88200 E
8° 51.41783 N 2.96533 E
9° 51.42500 N 2.88200 E
10° 51.43250 N 2.80200 E

7° Shipping precautionary area around zone delineated by article 7, §1;

8° Westpit traffic stream, along the southern side of the zone delineated by article 7, §1 in east-west direction;

9° Precautionary area Westhinder traffic stream via Scheur and Zand to the port of Zeebrugge;

10° Precautionary area Westhinder traffic stream via Scheur and Zand to the Scheldt estuary;

11° Traffic stream between Ostend and Zeebrugge, south of the Wenduine Bank;

12° Traffic stream Ostend- Dover, north of the Stroom Bank and Nieuwpoort Bank, south of the Ostend Bank, Middelkerke Bank Kwinte Bank, between the Binnen Ratel and Buiten Ratel;

13° Traffic stream from Scheur to the Port of Ostend, west of the Wenduine Bank;

14° Traffic stream to the port of Nieuwpoort across the Westdiep;

15° Traffic stream from Westpit, west of the zone delineated by article 7, §1, to precautionary area Noordhinder Junction;

16° Traffic stream from the Goote Bank, across the Westhinder Bank, east of the Fairy Bank, connecting with International Maritime Organization traffic separation scheme Noordhinder South;

17° Traffic stream from the Goote Bank across Oosthinder Bank, south of Noordhinder Bank, connecting with International Maritime Organization traffic separation scheme Noordhinder South;
Within these traffic streams priority is given to shipping. Other activities may be allowed, insofar these do not structurally make impossible or limit shipping.

§3. The zone between the Vlakte van de Raan, Wielingen, Akkaert Bank and Goote bank, indicated in annex 4, map 3, is designated as a junction for traffic streams., is forbidden for activities that make shipping structurally impossible or restrict it.

Priority must be given to shipping within this zone. Other activities may be allowed, insofar as they do not make the use of the zone structurally impossible or structurally limit it.

as they thereby become reconcilable with other permitted activities.

§4. Anchorage areas are designated in the Belgian sea area:

1° Anchorage area Oostdyck, of which the coordinates are the following (in projection WGS 84):

1° 51.32667 N 2.56333 E
2° 51.32667 N 2.52500 E
3° 51.33250 N 2.57500 E
4° 51.34000 N 2.52500 E
5° 51.34000 N 2.61667 E

2° Anchorage area Westhinder, of which the coordinates are the following (in projection WGS 84):

1° 51.39916 N 2.55532 E
2° 51.39917 N 2.61500 E
3° 51.40667 N 2.67167 E
4° 51.43250 N 2.58198 E
5° 51.43250 N 2.67167 E

Priority in these areas is given to the anchorage of ships. Activities that make its use as intended in this paragraph structurally impossible or limit it are forbidden in this area.

§5. In the other known traffic streams, as represented in annex 4, map 3, priority is given to shipping. Other activities can be permitted insofar as they are reconcilable with the function.

§6. Zones are designated for dumping dredging spoil, the coordinates of which are the following (in projection WGS 84):

1° S1
51.45611 N 3.03472 E as the central point of a circle with a radius of 1, 5 kilometer

2° S2
51.43333 N 3.14167 E as the central point of a semi-circle with a radius of 1, 5 kilometer, delineated to the south by the parallel 51.43333 N

3° Bruggen en Wegen Oostende
51.28383 N 2.92558 E as the central point of a circle with a radius of 0,75 kilometer

4° Bruggen en Wegen Zeebrugge Oost
51.38160 N 3.26392 E as the central point of a circle with a radius of 0,75 kilometer

5° Bruggen en Wegen Nieuwpoort
51.24873 N 2.73024 E as the central point of a circle with a radius of 0,75 kilometer

These zones are graphically represented in annex 4, map 3.

§7. The zones delineated in paragraph 6 are prohibited for activities that make dumping dredging spoil impossible or restrict it.

§8. A reserve zone will be designated for dumping dredging spoil, the coordinates of which are the following (in projection WGS 84):

1° 51.32952 N 3.02858 E
2° 51.35174 N 3.16619 E
3° 51.35669 N 3.02506 E
4° 51.36099 N 3.23616 E
5° 51.36377 N 3.11543 E
6° 51.36389 N 3.18229 E
7° 51.36552 N 3.19350 E
8° 51.36708 N 3.01808 E
9° 51.36951 N 3.25206 E
10° 51.37312 N 3.11792 E
11° 51.37438 N 3.16622 E
12° 51.37659 N 3.17832 E
13° 51.37960 N 3.15544 E
14° 51.38580 N 3.24437 E
15° 51.38747 N 3.14398 E
16° 51.39124 N 3.12199 E
17° 51.39200 N 3.01796 E
18° 51.39631 N 3.02879 E
19° 51.39710 N 3.06557 E

This zone is graphically represented in annex 4, map 3.

§9. Within the reserve zone delineated in paragraph 8, the minister can award an authorization for dumping dredging spoil as long as the selected location entails less back-flow of dredging spoil than in the zones delineated in paragraph 6.

§10. Without prejudice to the competences of the Flemish Region as concerns the ports and their affiliations, there will be zones designated for the potential expansion of the sea ports of Ostend and Zeebrugge, in which activities that make the expansion of the sea ports impossible are forbidden. The coordinates of these indicative zones are:

<u>Maritime port Ostend</u>

1° 51.23584 N 2.91745 E

2° 51.23815 N 2.91380 E
3° 51.24083 N 2.91578 E
4° 51.24220 N 2.91960 E
5° 51.24230 N 2.92322 E
6° 51.23769 N 2.92847 E

Maritime port Zeebrugge

1° 51.32998 N 3.18234 E
2° 51.35070 N 3.16894 E
3° 51.36288 N 3.18591 E
4° 51.36357 N 3.19821 E
5° 51.35919 N 3.22376 E
6°51.33969 N 3.22827 E

Section 5: Sea fishing and marine aquaculture – map 4 of annex 4

Art. 10. §1. Professional sea fishing is permitted everywhere in the sea areas, with the exception of:
1° the limitations included in article 14;
2° the limitations in accordance with Royal Decree of 11 April 2012 establishing a safety zone around the artificial islands, installations and constructions for generating energy from the water, tides and wind in the sea area under Belgian jurisdiction.
3° the limitations included in article 6.

§2. Zones are designated for aquaculture, the coordinates of which are the following (in projection WGS 84):

Zone 1

1° 51.56233 N 2.90517 E
2° 51.56317 N 2.94833 E
3° 51.57833 N 2.97100 E
4° 51.59167 N 3.00567 E
5° 51.58117 N 3.02400 E
6° 51.56417 N 3.03067 E
7° 51.54767 N 2.99583 E
8° 51.52900 N 2.96383 E
9° 51.51350 N 2.92833 E
10° 51.53083 N 2.89933 E
11° 51.54717 N 2.87217 E

Zone 2

1° 51.71017 N 2.80567 E
2° 51.69383 N 2.83750 E
3° 51.62800 N 2.79817 E
4° 51.64433 N 2.76650 E

These zones are graphically represented in annex 4, map 4.

§3. Within the zones designated in paragraph 2, aquaculture is possible insofar as:
1° the holder of the concession for the construction and exploitation of a wind farm gives his consent;
2° the aquaculture obtains an integrated form; this is the combination of various aquaculture forms which reduce the eutrophication within the concession zone.

Section 6: Sand and gravel extraction – map 5 of annex 4

Art. 11. §1. Zones are delineated for the exploration and exploitation of the mineral and other non-living resources in the territorial sea and on the continental plate, the coordinates of which are the following (in projection WGS 84):

Sector 1a (Thornton bank)

1° 51.47233 N 2.80365 E
2° 51.48617 N 2.73482 E
3° 51.50614 N 2.95148 E
4° 51.54534 N 2.79498 E
5° 51.55342 N 2.87281 E

Sector 2a (Kwinte bank)

1° 51.24227 N 2.57503 E
2° 51.30022 N 2.65958 E
3° 51.32143 N 2.66700 E
4° 51.33774 N 2.68201 E
5° 51.33616 N 2.72082 E
6° 51.30457 N 2.69255 E
7° 51.28875 N 2.67840 E
8° 51.25066 N 2.64432 E
9° 51.23233 N 2.60415 E
10° 51.24227 N 2.57503 E

Sector 2b (Buiten Ratel)

1° 51.33930 N 2.63937 E
2° 51.33867 N 2.65905 E

3° 51.28529 N 2.60999 E
4° 51.25753 N 2.57048 E
5° 51.25849 N 2.56015 E
6° 51.27116 N 2.53948 E
7° 51.28855 N 2.56126 E
8° 51.29777 N 2.53901 E
9° 51.32171 N 2.56506 E
10° 51.32843 N 2.57837 E
11° 51.33930 N 2.63937 E

Sector 2c (Oostdyck)

1° 51.34844 N 2.52247 E
2° 51.34822 N 2.52230 E
3° 51.34262 N 2.51761 E
4° 51.32588 N 2.51781 E
5° 51.27555 N 2.46878 E
6° 51.28155 N 2.43704 E
7° 51.29070 N 2.45297 E
8° 51.34784 N 2.50587 E
9° 51.34933 N 2.51831 E
10° 51.34844 N 2.52247 E

Secteur 3a (Sierra Ventana)

1° 51.42417 N 2.99866 E
2° 51.42417 N 3.05699 E
3° 51.44084 N 3.05699 E
4° 51.44085 N 2.99865 E

Secteur 3b (Sierra Ventana)

1° 51.44082 N 3.05696 E
2° 51.44084 N 2.99865 E
3° 51.46167 N 3.05699 E
4° 51.46168 N 2.99865 E

Secteur 4a (Noordhinder)

1° 51.57765 N 2.55033 E
2° 51.58463 N 2.57612 E
3° 51.66840 N 2.60887 E
4° 51.67953 N 2.58253 E

Secteur 4b (Oosthinder north)

1° 51.57895 N 2.68328 E
2° 51.58283 N 2.65532 E
3° 51.63058 N 2.70328 E
4° 51.64252 N 2.67215 E

Secteur 4c (Oosthinder south)

1° 51.49295 N 2.62192 E
2° 51.49435 N 2.61147 E
3° 51.54053 N 2.63713 E
4° 51.54240 N 2.62543 E
5° 51.57620 N 2.66250 E
6° 51.57822 N 2.64722 E

Secteur 4d (Westhinder)

1° 51.51120 N 2.56918 E
2° 51.51742 N 2.56068 E
3° 51.55370 N 2.57983 E
4° 51.56212 N 2.59865 E

These zones are graphically represented in annex 4, map 5.

§2. Concessions for the exploration and exploitation of the mineral and non-living resources in the territorial sea and on the continental shelf can only be awarded in the zone delineated in paragraph 1, in accordance with the Royal Decree of 1 September 2004 concerning the conditions, the geographical delimitation and the procedure for granting concessions for the exploration and exploitation of the mineral resources and other non-living resources in the territorial sea and on the continental shelf.

Section 7: Coastal Defence – map 6 of annex 4

Art. 12. §1. A zone is delimited in a cooperation agreement with the Flemish Region for testing new methods of coastal defence, of which the circumscription is the following (in projection WGS 84):

Mid-point 51.122 N 2.588 E (R= 1 nautical mile)

This zone is graphically represented in annex 4, map 6.

§2. Insofar as the tests mentioned in paragraph 1 are not subject to a licensing requirement, the minister decides, together with the Flemish minister competent for coastal defence, to integrate the results of the in accordance with article 28 Law conducted environmental impact assessment into the test project.

Section 8: Military activities – map 7 of annex 4

Art. 13. §1. A zone is delimited for military activities, of which the circumscription is the following (in projection WGS 84):

Bounded by - bearings 114° from point 51.15436 N 2.72961 E
- and 191° from point 51.16899 N 2.77699 E

Small sector: mid-point 51.15436 N, 2.72961 E (radius= 2.5 nautical miles)

Mid-size sector: mid-point 51.14367 N 2.76917 E (radius= 7.5 nautical miles)

Large sector: mid-point 51.14367 N 2.76917 E (radius= 12 nautical miles)

This zone is graphically represented in annex 4, map 7.

§2. Inside the zone delineated in paragraph 1, the military holds firing exercises from land to sea.

§3. A zone is delineated for military activities, the coordinates of which are the following (in projection WGS 84):

1° 51,25200 N 2,46017 E
2° 51,28683 N 2,48717 E
3° 51,30850 N 2,53050 E
4° 51,32667 N 2,56000 E
5°51,32667 N 2,60150 E
6° 51,32233 N 2,57867 E
7° 51,30217 N 2,54050 E
8° 51,27983 N 2,49617 E
9° 51,24817 N 2,47317 E

This zone is graphically represented in annex 4, map 7.

§4. Inside the zone delineated in paragraph 3, the military can hold exercises concerning laying, detecting and sweeping mines.

§5. A zone is delineated for military activities, the coordinates of which are the following (in projection WGS 84):

1° 51.35000 N 2.95167 E
2° 51.35000 N 3.01167 E
3° 51.31167 N 2.93000 E
4° 51.33000 N 2.90833 E

This zone is graphically represented in annex 4, map 7.

§6. Inside the zone delineated in paragraph 5, the military can hold exercises concerning laying, detecting and sweeping mines insofar as these exercises, in the current case, do not make impossible or complicate the construction and exploitation of installations for energy storage.

§7. A zone is delimited for military activities, the coordinates of which are (in projection WGS 84):

1° 51,66667 N 2,70000 E
2° 51,60000 N 2,80000 E
3° 51,44583 N 2,80000 E
4° 51,44583 N 2,35000 E
5° 51,66667 N 2,56667 E

This zone is graphically represented in annex 4, map 7.

§8. Inside the zone delimited in paragraph 7, the military can hold firing exercises at floating targets at sea.

§9. A zone is delimited for military activities, the coordinates of which are (in projection WGS 84):

1° 51,48116 N 2,59198 E
2° 51,48083 N 2,74865 E
3° 51,44583 N 2,74865 E
4° 51,44583 N 2,59198 E

This zone is graphically represented in annex 4, map 7.

§10. Inside the zone delineated in paragraph 9, the military can hold exercises concerning laying, detecting and sweeping mines.

§11. A zone is delimited for military activities, of which the circumscription is the following (in projection WGS 84):

Mid-point 51.4845N 2.832 E (radius=3.2 nautical miles)

This zone is graphically represented in annex 4, map 7.

§12. Detonation exercises and tasks can only be held inside the zone delimited in paragraph 11, except in emergency situations.

§13. A zone is delimited for military activities, the coordinates of which are (in projection WGS 84):

1° 51,27000 N 2,50667 E
2° 51,28333 N 2,49167 E
3° 51,30500 N 2,53500 E
4° 51,29167 N 2,55167 E

§14. Inside the zone delimited in paragraph 13, the military can hold exercises concerning laying, detecting and sweeping mines.

§15. The Army annually transmits a list with the activities done to the Minister.

Section 9: Munitions deposit area – map 4 of annex 4

Art. 14. §1. A zone is delimited for safeguarding closed munitions deposit area, the coordinates of which are the following (in projection WGS 84):

1° 51.35917 N 3.23817 E
2° 51.36833 N 3.25400 E
3° 51.36333 N 3.27150 E
4° 51.35617 N 3.27700 E
5° 51.35117 N 3.24783 E

This zone is graphically represented in annex 4, map 4.

§2. No activities that disturb the seabed are allowed inside this zone.

Art. 15. §1. Scientific research is permitted everywhere in the Belgian sea areas barring different provisions that set up a ban or impose certain conditions.

§2. Recreational activities are permitted everywhere in the Belgian sea areas, except for:
- Recreational sea fishing with seabed-disturbing techniques in the zone, as delimited in article 6, §1;
- Provisions to the contrary which establish a prohibition or impose conditions.

§3. There are measuring poles at the following locations (in projection WGS 84):

1° 51.39444 N 3.04583 E
2° 51.36056 N 3.11833 E

3° 51.36278 N 3.29000 E
4° 51.38972 N 3.19861 E
5° 51.41833 N 3.29861 E
6° 51.38861 N 3.43778 E

§4. The delimitation and installation of radars and masts are permitted everywhere within the Belgian sea areas. If these activities could come into conflict with other spatial provisions, these provisions will be attuned as much as possible to these activities.

Introduction to the Maritime Spatial Plan and spatial analysis of the sea areas

Introduction

Chapters 1 and 2 in the 'Introduction' constitute an introduction that is primarily relevant for the general public (Chapter 1) and for public services that are involved in land planning (Chapter 2). These are not translated within the framework of this cross-border consultation.

3. Framework of marine spatial plan[1]

From organization to planning

Already in 2003, Minister of the North Sea Johan Vande Lanotte took an initiative for spatial planning of the Belgian part of the North Sea (BNS). This initiative laid down certain activities and uses in a 'Masterplan'[2]. Among others, this Masterplan established the area for renewable energy.

In the years that followed, maritime spatial planning became an important item on the European agenda. In 2008, the European Commission issued the Communication, "Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU"[3]. This constituted a significant stimulus for maritime spatial planning in the Member States.

Unesco IOC also promotes maritime spatial planning, among others by the 2009 publication of "Maritime Spatial Planning: A step-by-step approach toward ecosystem-based management"[4].

In 2010, the policy note[5] from the State Secretary for North Sea Policy, Etienne Schouppe, stated that "initiatives should be taken to keep this process high on the agenda."

In recent years (2010-2011), the Marine Environment Service of the Directorate-General for the Environment took the lead in order to shape this commitment. Since 2012, the drafting of a new marine spatial plan has been high on the political agenda. In addition, the planning process has received a legal foundation and the intention is to formulate a binding plan.

Legal framework

The Act of 20/01/1999 on the protection the marine environment in sea areas under Belgian jurisdiction of 20/01/99[6], also called the 'Marine Environment Act', constitutes a milestone in marine legislation. This law defines various principles that users of Belgian marine waters must consider. Among them are the following internationally recognized principles:

- the precautionary principle: preventive measures must be taken if there are grounds for concern regarding pollution;
- the prevention principle: prevention is better than cure;
- the principle of sustainable management: human activities must be managed in such a way that the marine ecosystem remains in a condition which ensures the continued use of the sea;
- the polluter pays principle: the costs and measures to prevent and fight pollution are to be borne by the polluter;
- the principle of restoration: if the environment is damaged or disrupted, the marine environment must be restored to its original condition as far as possible.

In addition to the general principles, summarized above, the Act on the protection of the marine environment also lays the basis for the establishment of marine reserves and the protection of plants and animals. Furthermore, the Marine Environment Act summarizes the activities which are subject to a prior licence or authorization issued by the minister.

The most recent amendment to this act determines the modalities for a marine spatial plan for Belgian waters, and thus forms the direct framework of this document. Therefore, after this final amendment, the title of the act was also adjusted to read 'Act on the protection of the marine environment and on the organization of maritime spatial planning in the sea areas under Belgian jurisdiction'.

The Royal Decree of 13/11/12[7] regulates the establishment of an advisory committee and the procedure for adoption of a marine spatial plan in Belgian sea areas.

The marine spatial plan will ultimately be embedded in a new Royal Decree for adoption of the maritime spatial planning.

4. Structure of the marine spatial plan

The marine spatial plan consists of the draft Royal Decree establishing the marine spatial plan including all of the annexes. These annexes consist of all elements as stipulated in the Act:

- Annex 1 contains a spatial analysis of the Belgian sea areas. This includes:
  - a spatial location and a legal demarcation of Belgian sea areas;
  - the physical characteristics and existing environmental and natural conditions in the BNS;
  - inventory of the activities and use of the Belgian sea areas;
  - an overview of the spatial alliances and conflicts;
  - the planning and policy context.

- Annex 2 contains the long-term vision, objectives, indicators and spatial policy choices for the BNS:
  - core objectives and overall long-term vision;
  - spatial principles and a spatial structural vision for the BNS;
  - economic, social, environmental and safety objectives and indicators;
  - spatial policy choices for users and activities in the BNS.

- Annex 3 contains the activities for implementing the marine spatial plan.

- Annex 4 contains all the maps.

These annexes describe the entire plan. The Royal Decree itself contains the article-by-article designation of the areas according to use/activity with the respective binding provisions.

5. Procedure

The Royal Decree of 13/11/12 determines the establishment of an advisory committee and

the procedure for adoption of the maritime spatial planning.

In summary, the following successive procedural steps are to be taken:

- Establishing a preliminary draft of the marine spatial plan by the minister;
- The minister presents the preliminary draft to the advisory committee, which delivers reasoned advice to the minister within 30 days;
- The advice is given consideration; the preliminary draft is adjusted where necessary;
- The Council of Ministers approves in principle the (adjusted) preliminary draft;
- Adoption of the preliminary draft as the 'draft of marine spatial plan' by the minister;
- Organization of a public inquiry of the 'draft of the marine spatial plan' during 60 days; during this public inquiry, the draft is also presented for advice to the Federal Council for Sustainable Development, the regional authorities, the Structure Coast Guard and any additional structures considered useful. This also goes together with a cross-border consultation (the Netherlands, France, the United Kingdom). During the public inquiry, the minister also organizes at least one public consultation meeting;
- At that time, the plan is also subjected to a 'Strategic Environmental Assessment'.
- The advices received are considered; the draft is adjusted where necessary. A statement is also prepared about how the advices are taken into consideration.
- The minister translates the (adjusted) draft of the marine spatial plan into a draft Royal Decree and presents this draft Royal Decree to the Council of Ministers.

The marine spatial plan is thus legally embedded by means of formal 'adoption' of the plan. In this way, sufficient legal certainty is created for the various users.

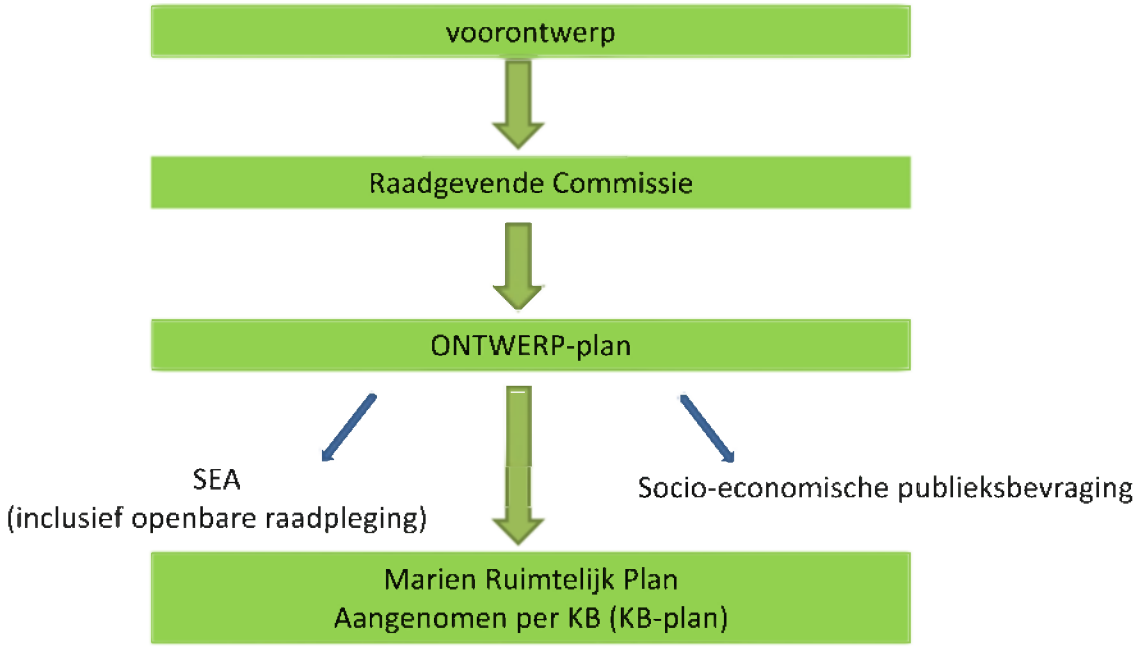
Given that the sea is a dynamic environment which can also change due to the changing needs and unpredictable results as a consequence of technological developments, the spatial planning process must indeed be sufficiently flexible, dynamic and continuous.

Monitoring and evaluation of the choices made is advised. Therefore, an amendment procedure is also provided by law:

- every six years: complete evaluation and possible amendment;
- in the interim phase: by means of the Minister of the North Sea, after approval in principle by the Council of Ministers.

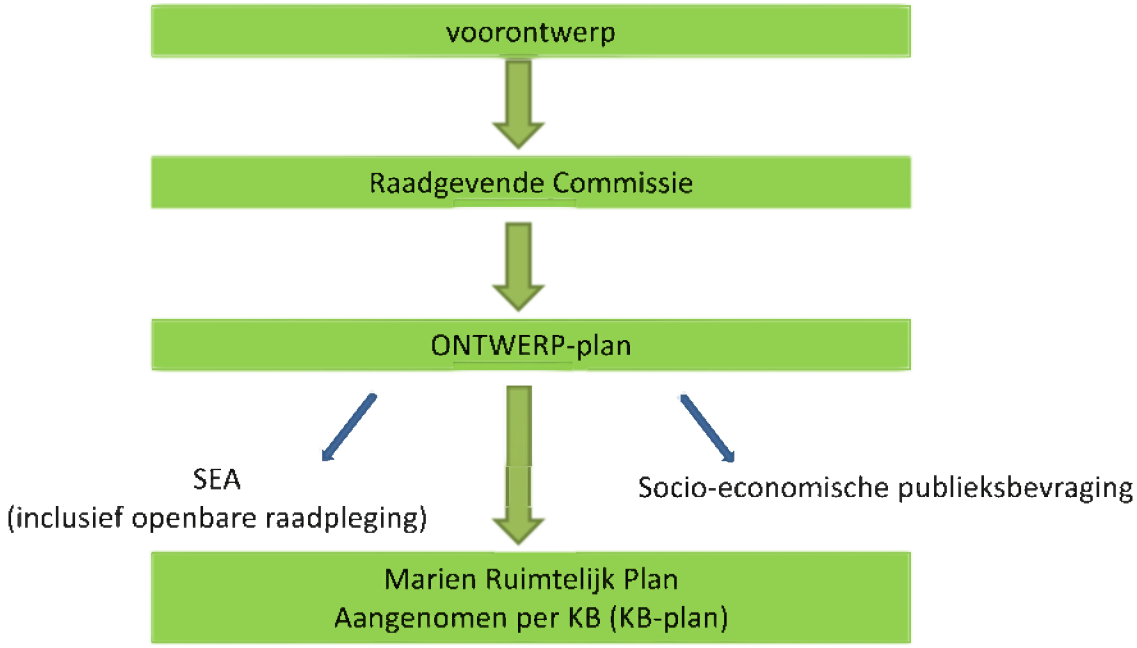
We emphasize the importance of the transparency of the procedure and of participation by the various stakeholders. Given that the sea is an 'open' system, proper alignment with other North Sea countries (particularly the neighbouring countries), but also with the 'land side' is advised. Planning of the maritime space thus occurs in collaboration with all parties competent for this, and the actual interpretation of the vision takes place in

agreement with the competences concerned, which must be maintained.



Translation of this chart:

- 'voorontwerp' means 'preliminary draft'
- 'Raadgevende Commissie' means 'Advisory Committee'
- 'ONTWERP-plan' means 'DRAFT plan'
- 'SEA (inclusief openbare raadpleging)' means 'SEA (public consultation meeting included)'
- 'Socio-economische publieksbevraging' means 'Socio-economic public inguiry'
- 'Marien Ruimtelijk Plan. Aangenomen per KB (KB-plan)' means 'Marine Spatial Plan. Adopted by Royal Decree (Royal Decree-plan)"



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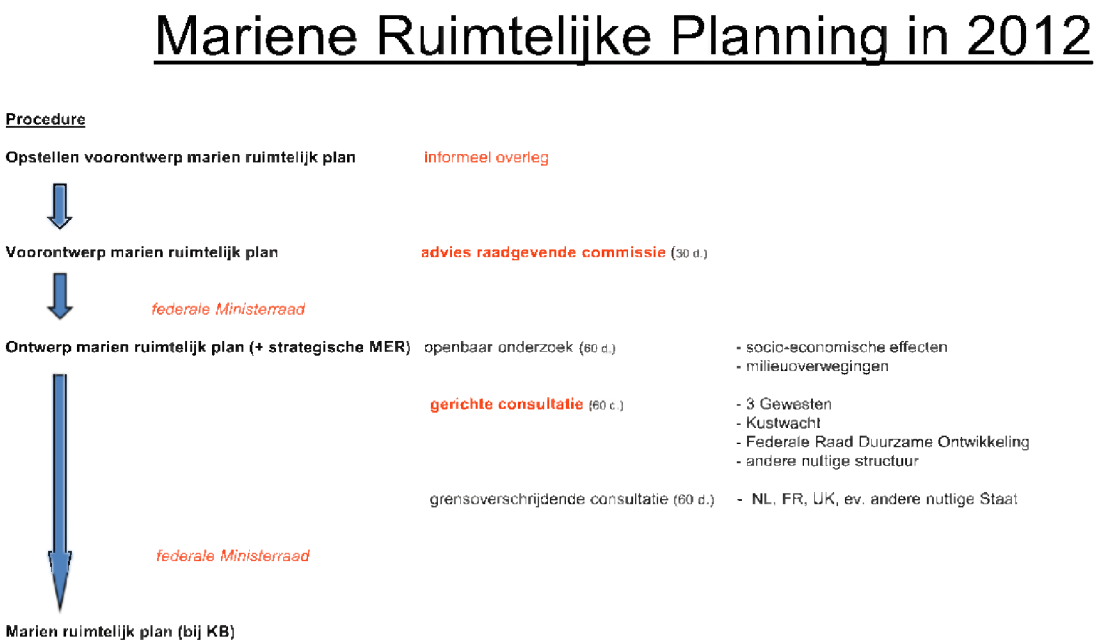


Schemes: procedure for drafting and implementing the maritime spatial planning

Translation of this chart:

- 'Mariene Ruimtelijke Planning in 2012' means 'Marine Spatial Planning in 2012'
- 'Opstellen voorontwerp marien ruimtelijk plan' means ' Draft preliminary draft marine spatial plan'
- 'informeel overleg' means 'informal consultation'
- 'Voorontwerp marien ruimtelijk plan' means 'preliminiary draft marine spatial plan'
- 'advies raadgevende commissie' means 'advice advisory committee'
- 'federale Ministerraad' means 'federal Council of Ministers'
- 'Ontwerp marien ruimtelijk plan (+strategische MER) means 'Draft marine spatial plan (+ strategic Environmental Impact Report)
- 'openbaar onderzoek' means 'public inquiry'
- 'socio-economische effecten' means 'socio-economic effects'
- 'milieuoverwegingen' means 'environmental considerations'
- 'gerichte consultatie' means 'steered consultation'
- '3 Gewesten' means '3 Regions'
- 'Kustwacht' means 'Coast Guard'
- 'Federale Raad Duurzame Ontwikkeling' means 'Federal Council for Sustainable Development'
- 'andere nuttige structuur' means 'other useful structure'

- ‘grensoverschrijdende consultatie’ means ‘transboundary consultation’
- ‘Marien ruimtelijk plan (bij KB)’ means ‘Marine spatial plan (by Royal Decree)’

6. Reading guide

The marine spatial plan aims at coordinating decisions which have a spatial impact on sea areas and ensures that all stakeholders are involved in the process (Marine Environment Act). This coordination is a federal competence and is without prejudice to competences that are assigned to the respective Flemish and Federal Governments (cf. Special Act for reforming the institutions). The activities which arise from, or are regulated by the marine spatial plan must not affect the Flemish legal norms in force. Examples of this are the Flemish licensing systems (VLAREM, Codex Spatial Planning, nature regulations…) and the obligations that arise from them. In order to specify the proper scope of the federal competence, one can refer *mutatis mutandis* to the impact of the regional competence for spatial planning on land, as opposed to the federal competences. It is the federal competence, for instance, to decide how many prisons are built, what the safety norms are, etc., but for the building itself, the federal government shall have to respect the regional regulations concerning spatial planning. The same reasoning is valid for the North Sea, without prejudice to article 25 § 3 of the Act. This entails that (1) the binding portion of the MRP is substantively binding for every user and (2) that a licence is required for all activities listed in article 25, with the exception of what is provided for in article 25 § 3.

As clarified in the Royal Decree establishing the marine spatial plan, the present document should be read as follows:

The spatial analysis of the sea areas included in annex 1, as prescribed by article 5, §4, 1° of the Act Marine Environment, is established as the informative basis for the following parts of the marine spatial plan.

The long-term vision, objectives, indicators and spatial policy choices included in annex 2, as prescribed by article 5, §4, 2° and 3° of the Act Marine Environment, are established as binding stipulations of the marine spatial plan for the government.

The activities for implementing the marine spatial plan included in annex 3, as prescribed by article 5, §4, 4° of the Act Marine Environment, are established as binding stipulations of the marine spatial plan for the government.

The maps included in annex 4 are a binding graphic representation of the spatial policy vision for the Belgian sea areas. The coordinates as included in the Royal Decree on establishing the marine spatial plan as well as the maps themselves are binding, but if in doubt the text takes precedence (i.e. the coordinates).

Spatial analysis of the sea areas

Chapters 1 to 7 of the "Spatial analysis of the sea areas" are descriptive and build upon the Initial Assessment for the Belgian marine waters, available in English. These are not translated within the framework of this cross-border consultation on this draft marine spatial plan.

Chapter 8, "Cultural Heritage" contains new information and has been translated.

8. Cultural Heritage

All activities having a significant impact on the soil (roughly the upper 2-3 m of the sea floor) and the subsoil also have an impact on the cultural underwater heritage that is in or on this soil or subsoil. In itself, there should be no separate space reserved in the BNS for this heritage; rather, for the planned activities having a significant impact on the soil and subsoil, care should be taken to ensure that mitigating measures are taken with regard to the heritage which is threatened with destruction or damage as a result of the activities.

9. Activities in and use of the Belgian sea areas

For Chapter 9, "Activities on and the use of the Belgian Sea Areas", the sections "Existing situation" and "Location requirements" are also included in this document for cross-border consultation. The sections "Legal aspects", “Compatibility with other users in the BNS” and “Impact on the environment” are not included in this document for cross-border consultation due to the comparable situation in different countries.

It is important for the further development of the spatial vision to make a distinction in the description of the use of the Belgian sea areas between permanent infrastructure (which is thus difficult to relocate or to remove) and temporary activities (which may have a large, but not always a visible impact). The impact of every usage/activity is described qualitatively, and where possible also quantitatively.

9.1 Pipelines and cables

Existing situation of pipelines

There are three pipelines in the BNS:

- The Sea Pipeline connects the Norwegian Sleipner area with the Fluxys Terminal in Zeebrugge. This is the oldest pipeline and has been in use since 1993. The Sea Pipeline has a capacity of 13 billion m³ annually;

- The Franpipe (previously called Norfra) connects the Norwegian Draupner E platform with the French Port of Duinkerke. This pipeline only passes via the BNS and serves no Belgian port. Franpipe has been operational since 1998 and has a capacity of 15 billion m³ annually;

- Interconnector: this runs from the British Bacton Terminal to the Port of Zeebrugge. Interconnector became operational at the end of 1998 and delivers gas originating from the Leman gas field on the British continental plateau. The Interconnector is configured to send gas in two directions. The import capacity to Belgium totals 20 billion m³ annually. Export capacity to Great Britain is approximately 23.5 billion m³ annually. The export capacity to Great Britain has been increased because the UK has become a net importer of gas, mainly from Russia.

The pipelines have a diameter of approximately 1 metre. They are buried 70 centimetres to 2 metres deep in the sea floor and are then covered with a protective layer of gravel.[viii]

There are no oil pipelines in the BNS.

Existing situation of cables

There are telecommunication as well as electricity cables in the BNS.

The telecommunication cables still in use are generally fibre optic cables (replacing the older coax cables). Together with the cables still in use, in the BNS there are also a large number of unused cables which are not covered. The number of fibre optic cables will likely increase in future. These cables are usually buried 60 to 90 centimetres deep in the sea floor.[ix]

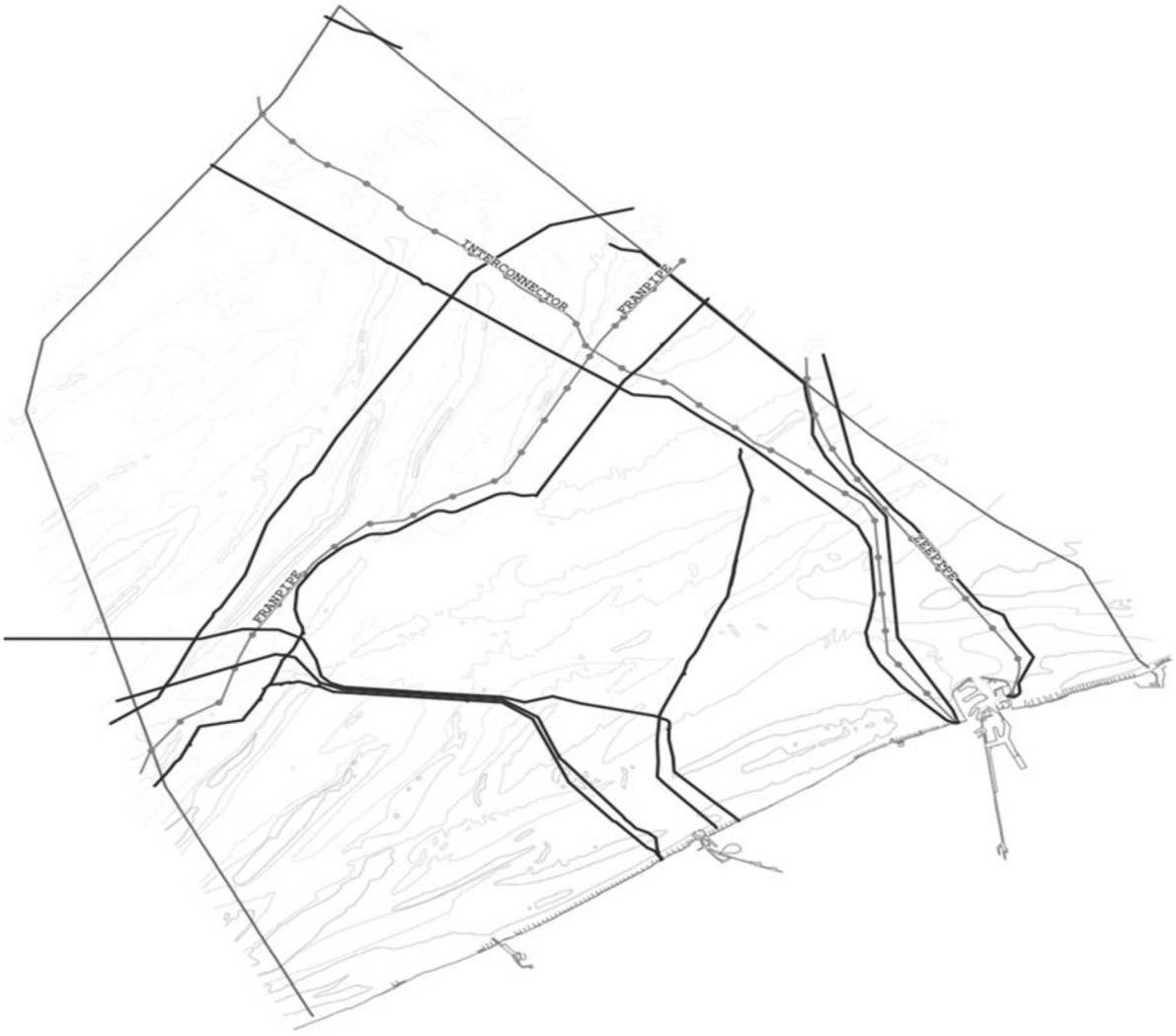
In recent years, a number of electricity cables were also buried in the BNS. The burial depth of new cables is a minimum of 1 metre.[x] These bring electricity generated at sea by wind

turbines to shore. We may assume that the number of electricity cables at sea will sharply increase given the large number of wind turbine projects that are in the pipeline (see below).


Kabels en pijpleidingen in het BNZ
pijpleidingen
kabels
kabels in onbruik
INTERCONNECTOR
FRANPIPE
FRANPIPE
ZEEPIPE
MARIEN RUIMTELIJK PLAN
ANALYSE OKTOBER 2012
Grontmij
UNIVERSITEIT GENT

Operationele kabels en pijpleidingen in het BNZ

pijpleidingen
kabels



MARIEN RUIMTELIJK PLAN
ANALYSE OKTOBER 2012

Grontmij
UNIVERSITEIT GENT

Translation of these maps:

- "(Operationele) kabels en pijpleidingen in het BNZ" means "(operational) cables and pipelines in the BNS"
- "Kabels in onbruik" means "cables in disuse"

9.2 Area for renewable energy

Existing situation

There are currently several wind farms under construction in the BNS. These are situated in the statutory area for generating electricity from renewable sources, including wind energy. This area is situated on the eastern side of the BNS and stretches from approximately 6 km south of the Thornton Bank to approximately 8 km north of the Bligh Bank. Within this area (approx. 240 km² or 7% of the BNS), there are three sand banks for which the first wind farms were developed: the Thornton Bank, the Lodewijk Bank and the Bligh Bank.

The following concessions have already been assigned (see table)[xi]:

Project name	Location in the BNS	Number of turbines	Total capacity (MW)	Total surface area (without safety zone) (km²)	Water depth (m)	Shortest distance to the coast (km)	Domain concession	Authorization and licence for construction and exploitation
C-Power II	Thornton Bank	54	300[xii]	13.7-18.1	10-25	27	27/06/2003	14/04/2004
Belwind	Bligh Bank	110	330	35.6	25-50	46	05/06/2007	20/02/2008
Northwind (previously Eldepasco)	Lodewijk Bank	72	216	9	16-38	37	16/06/2006	19/11/2009
Norther	South of the Thornton Bank	47-86 (100)	300 to 450 MW	38	14-30	21	05/10/2009	18/01/2012 Change requested on 21/08/2012
Rentel	North of the Thornton Bank	47-78	288 MW	18.4-27.3	22-28	31	06/2009	18/02/2013
Seastar	South of Bligh Bank	41	246	18.4	20-25	41	06/2012	Not yet started
Mermaid	North of Bligh Bank	75	449 to 490 MW wind and 20 to 61	28.4	25-50	50	07/2012	Not yet started

			MW wave energy with 272 to 816 wave energy converters					
Total:		**446-530**	**2149-2381**	**161.5-174.8**				

Belgium occupies the fourth place in Europe when it comes to offshore wind energy, despite the relatively small Belgian sea area.

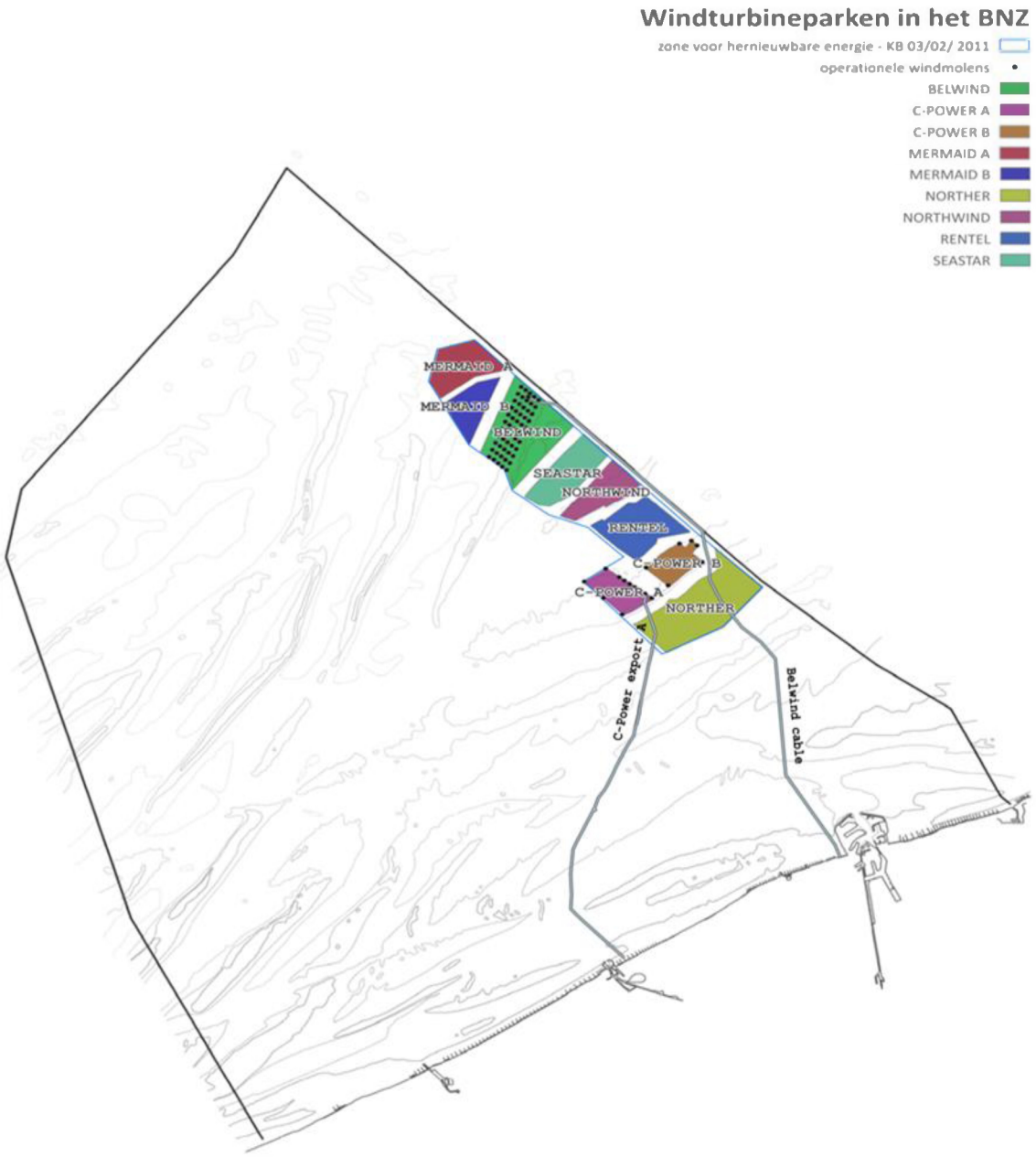
The offshore wind farm sector in Belgium currently employs 1,376 people (40% of the entire direct Belgian employment is in the wind farm sector, while only 18% of the installed wind energy is situated offshore). Additionally there are also a large number of indirect employees in this sector[xiii]. Belgium furthermore has tremendous know-how concerning construction techniques (foundation, transport of wind turbines ...), installing cables, maintenance...

In addition, on the eastern dike in the port of Zeebrugge, 23 turbines are already being operated with annual production of 5.2 MW.

The cables that bring the generated electricity ashore have, depending on the project, landing points in the port of Ostend or that of Zeebrugge. Ostend is the landing point for the C-Power cables.

- The works for the C-Power project started in 2008 with the installation of the first 6 wind turbines. The following phase started in March 2012 with 30 turbines. Construction of the final turbines is scheduled for 2013.
- 55 turbines have been operational at the Belwind project since December 2010.
- The remaining projects have not yet started construction; commencement of installing the Northwind project is scheduled in 2013.

Works on the construction of wind farms, but also the maintenance of wind turbines, bring much more additional shipping traffic along with it. The estimate is that approximately 8,000 additional movements annually will be needed for maintenance of the entire Belgian wind turbine area. During the construction phase, several ships sail every day to and from the wind farm (maximum of 5).



MARIEN RUIMTELIJK PLAN
ANALYSE OKTOBER 2012

Grontmij UNIVERSITEIT GENT

Translation of this map:

- "windturbineparken in het BNZ" means "wind farms in the BNS"
- "zone voor hernieuwbare energie – KB 03/02/2011" means "zone for renewable energy - Royal Decree 03/02/2011"
- "operationele windmolens" means "operational windmills"

Location requirements

- There are no specific requirements for the subsoil, but there are 'more preferred' areas. Clay or clayey sand is most preferable, while tertiary rock layers, mixed layers and mud or fine sand are least preferable.

- The ideal water depth is a maximum of approximately 30-35 metres. The shallower the water, the lower the investment costs.

- The subsoil is preferably as flat as possible. Too steep subsoil brings additional construction difficulties along with it.

- In the first 20 kilometres from the coastal area, the wind speed increases as the distance from the coast increases. Beyond that distance, the wind speed does increase, but to a more limited extent.

9.3 Other energy generation and storage

There are currently no other alternative forms of energy generation and storage in the BNS, but a number of alternative techniques have already been tested and authorized. Possibilities include generating energy from wave action or tidal activity, and energy storage.

The area where wind farms are currently being installed (see above) is indicated as an area for the generation of renewable energy and as a consequence thus has this preferential interpretation. Energy storage can eventually take place closer to the coast.

9.4 Coastal defence

Coastal defence is a regional competence with the following objective:

- Protection of the hinterland against floods and natural processes such as erosion.

The measures concerning coastal defence also contribute to:

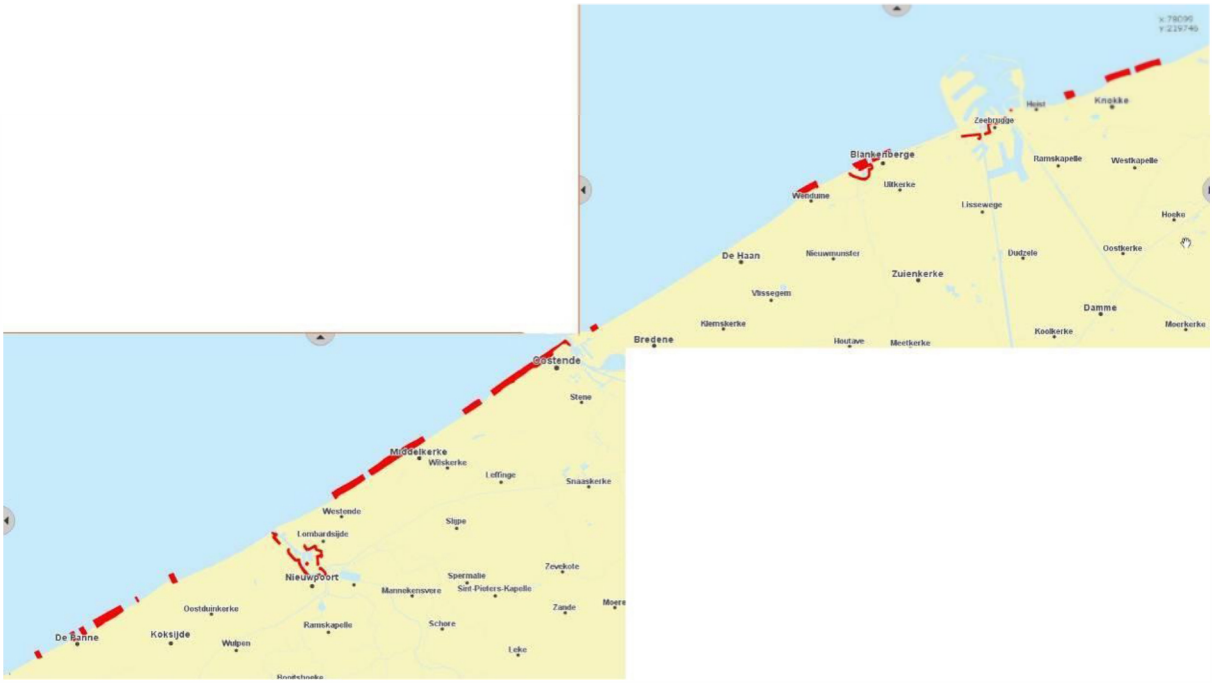
- nature conservation (protection of ecologically valuable dunes);

- coastal tourism.

There are generally two methods of coastal defence: hard and soft coastal defence. Both forms use different techniques.

Existing situation concerning the need for coastal defence[xiv]

From the study in the framework of the Coastal Safety Master Plan, it appeared that a third of the Belgian coast is insufficiently protected against so-called 'super storms' or '1,000 year storms'. Middelkerke, Ostend from Raversijde to the centre, Wenduine centre and the 4 coastal ports are vulnerable areas. Municipalities and seaside resorts such as De Panne, Sint-Idesbald, Koksijde, Westende, Blankenberge, Duinbergen and Knokke-Zoute also deserve extra attention.



Figures: Coastline development at the beach (above) and weak areas of coastal defence (below) *[Source: http://www.kustatlas.be/map/?lan=nl&theme_id=5. consulted on 7/11/2012]*[xv].

Existing situation - soft coastal defence

Soft coastal defence consists of, inter alia, beach replenishment, replenishment of the dunes, foreshore replenishment (sand is conveyed underwater), re-profiling the beach, reinforcing the beach with nets, planting beach grass or osiers.

Beach replenishment is the most often used method on the Belgian coast, and this has occurred regularly since 1968. This technique is a natural way to defend the coast. Normal coastal processes can occur and a more varied landscape can be created.

Dredged sea sand is usually used for beach replenishment. When the sea sand is dredged into port channels or other possibly polluted areas, the quality of the sand must first be checked and if necessary undergo prior treatment when necessary. Use can also be made of sand deriving from other beaches.

The dredged silt from the port of Blankenberge was dumped on 'Bruggen en Wegen Zeebrugge Oost'. The dredged sand is directly reclaimed on the dry beach or ends up on the Blankenberge underwater beach.

When replenishing the foreshore, the sand is not reclaimed but is mixed into the foreshore with specially equipped dredgers.

Figure: soft coastal defence at the Belgian Coast *[Source: http://www.kustatlas.be/map/?lan=nl&theme_id=5, consulted on 7/11/2012]*[xvi].

Rough sand is preferable in order to make the beach as stable as possible. However, other factors also play a role in the choice of sand (characteristics of the original beach, tides, ecological and tourist value...). The sand preferably resembles the sand already present and the beach profile is kept as natural as possible.

Beach replenishment to this point has mainly been used between Heist and the Zoute, between Bredene and Wenduine, in Ostend (centre to Raversijde) between Middelkerke and Westende and in Koksijde. It mainly concerns relatively limited amounts of sand except in Ostend, where a substantial amount of sand was imported in the framework of the 'Public Works Plan' (2004): 800,000m² of sand was supplied for installation of the North Beach. In the meantime, a number of beach replenishment projects were also conducted in the framework of the Coastal Safety Master Plan (De Panne, Koksijde, De Haan and Wenduine).

Because the nature reserve the Zwin (Knokke-Heist) was susceptible to silting and because there was a need for more estuarine nature, the Zwin Project was started in 2005. To this end, the basin capacity was made 120 ha larger, the international dike was removed and a new dike was built around the inland expansion of the nature reserve.

The works were usually conducted outside of the tourist season so as not to disturb tourism and recreation. The winter period is also not advisable due to the weather conditions. The

ideal period is March /April to June and from September to November. For ecological reasons, another period may be advised.

The volume of sand that was used for raising beach levels has amounted to an average of 550,000m³ per year since 2004.

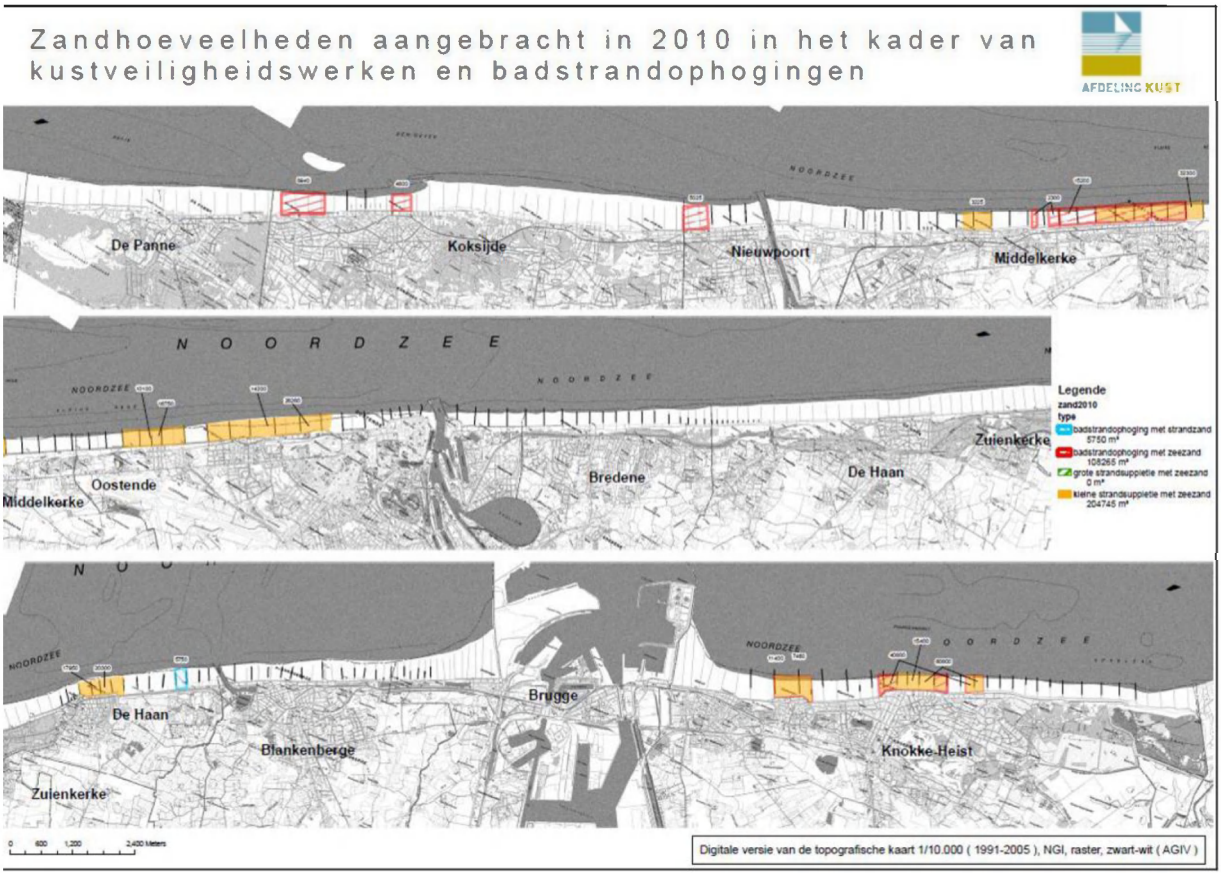


Figure: Amount of sand extracted for the coastal defence and beach refurbishment in 2010 *[Source: Coastal Department in: Belgian State, 2012. Socio-economic analysis of the use of Belgian maritime waters and costs related to the adverse effects on the maritime environment. Maritime Strategy Framework Guidelines – Art. 8, par 1c. Federal Public Service for Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp., 76]*

- Raising bathing beach with beach sand (blue): 5,750 m³
- Raising bathing beach with sea sand (red): 108,265 m³
- Major beach replenishment with sea sand (green): 0 m³
- Minor beach replenishment with sea sand (orange): 204,745 m³

Existing situation - hard coastal defence

The main types of hard coastal defence:

- beachheads (breakwaters);
- dikes and dune foot reinforcement;

Also groynes, harbour walls and palisades contribute to coastal defence at the ports**.**

Groynes, harbour walls and palisades can be found at the most important ports on our coast (Nieuwpoort, Ostend, Blankenberge, and Zeebrugge). Groynes that are oriented toward the sea are only found in Zeebrugge and Ostend.

Beachheads are very common along the Belgian coast. Between Westende and Bredene and between Wenduine and Knokke, the series of beachheads is nearly continuous. There are no beachheads in De Panne, Oostduinkerke, De Haan and near the Zwin.

Dikes are also fairly common along the Belgian coast. Dune foot reinforcement is used in 'the Westhoek' (West Corner) nature reserve in De Panne. These reinforcements consist of gabions, fascine mats or rubble that is buried underneath a thick layer of sand.

Figure: Hard coastal defence at the Belgian coast [*Source: http://www.kustatlas.be/map/?lan=nl&theme_id=5, consulted on 7/11/2012]*[xvii].

Other forms of coastal defence

According to some people, the development of islands off the coast can also be a form of coastal defence. These are not currently used in the BNS.

In the framework of the Flanders Bays project, research is also being conducted into the possibilities of islands off the coast. In the first instance, research is being conducted into the added value of islands for coastal safety. In addition, other functionalities are also being investigated.

9.5 Masts, buoys, radars and platforms (beaconing)

Existing situation

Beaconing is a regional competence.

The BNS displays a network of small, pointed (semi) permanent structures of which masts and platforms are the most important.

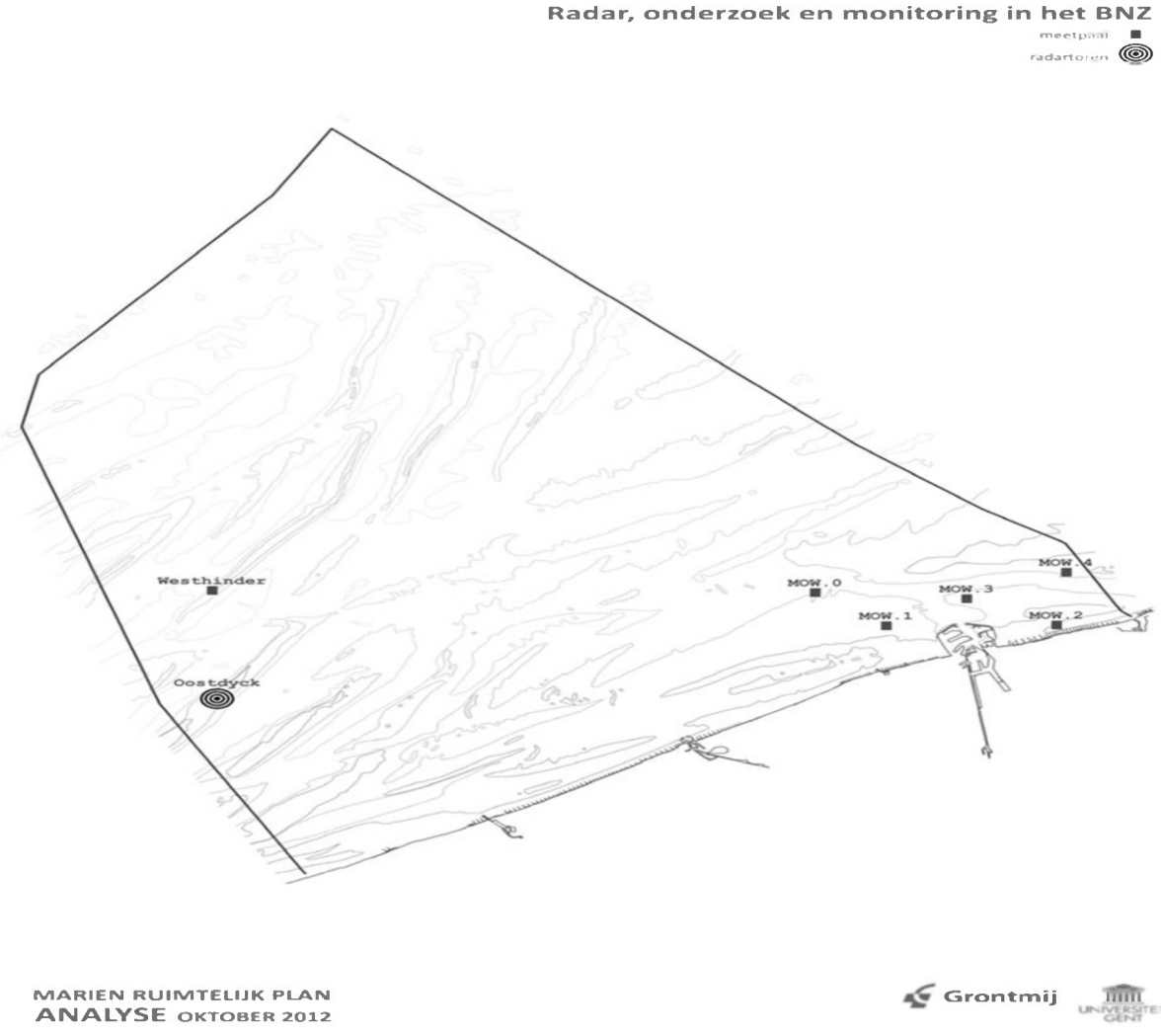
The management of the seaways is taking place in cooperation with Rijkswaterstaat (NL) by means of the Joint Nautical Authority (GNA). The Shipping Assistance Division is responsible for the decision about the installation, the nature and location of the seaway traffic signs; DAB Fleet (Flemish governmental fleet operator) is responsible for the installation, management and maintenance of the seaway markings and the traffic signs.
Buoys designate the shipping routes, sandbanks, wrecks, measuring instruments including wave and current meters, specific areas (e.g. wind farms) … Certain buoys indicate important positions for shipping. On account of incidents, temporary special marking buoys can be placed (e.g. wreck, lost anchor, fishing boat...). There is also a radar mast combined with a helicopter pad on the Oostdyck. Furthermore, there are also 6 measuring masts (MOW), 5 of which are off the coast of Zeebrugge-Knokke-Heist and 1 located at Westhinder; this is also a light tower. These measurement masts provide a monthly overview of the weather.

9.6 Scientific research

In 2009, 106 groups including 1,420 persons conducted maritime and coastal research. The research largely took place at universities, in addition to Flemish and federal research institutions. Furthermore, there are also 28 international or European institutions/NGOs or intergovernmental cooperation programmes operational in Belgium. There are 16 formal training programmes in marine environment and there are more than 60 private companies specialized with this area.

With the *Belgica* and the *Simon Stevin*, Belgium has oceanographic research ships that enable the scientists to conduct high quality research

(MUMM, 2011b). The result of this is that the BNS is one of the most intensively studied marine areas in the world[xviii]. The working area of the Belgica extends from 32°N (Morocco) to 65°N (Norway) and from 15°W (Atlantic Ocean) to 15°E (Baltic Sea). The Simon Stevin is deployed (for coastal-related research) in the southern curve of the North Sea, including the Scheldt and the eastern part of the channel.



Translation of this map:

- "Radar, onderzoek en monitoring in het BNZ" means "Radar, research and monitoring in the BNS"
- "Meetpaal" means "Measure pile"
- "Radartoren" means "Radar tower"

9.7 Shipping

Existing shipping situation in the BNS

Approximately 150,000 ships sail through the Belgian Sea Areas annually.

Various types of shipping can be distinguished in the BNS, each with their own characteristics. The main types are summarized below.

- International global traffic by merchant vessels. This type shipping is of great importance for global trade which is indispensable for prosperity in Belgium and globally. Some of the busiest sailed shipping traffic streams[1] in global merchant traffic cross through the BNS. This concerns transit traffic from the south to the north and vice versa when that traffic from and to the Belgian ports connects to the global merchant traffic. Characteristic of this form of shipping is that one find ships here of the largest dimensions and draught; this trend will only continue as the size of the ships as well as the volume of shipping increases;
- Ferry traffic to and from the Belgian ports;
- 'Short sea shipping' by merchant ships. This concerns intra-European shipping which is important for the sustainable development of Belgian and European transport and traffic mobility;
- Coastal navigation;
- Fishery. This concerns fishery in the BNS as well as the traffic of fishing ships to fishing areas outside it;
- Work traffic, particularly in connection with offshore exploitation (wind turbines), sand reclamation, dredging, etc.
- Recreational sailing;
- Tourist transport.

A vessel operator will in principle determine the most favourable route for the ship in function of his destination, taking into account obstacles, weather conditions, traffic congestion and various other factors which are important for the safety of the ship and the proper execution of the journey. Commercial considerations also play a role in this (saving time and fuel). Due to the limited depths of the Belgian sea areas and the presence of sandbanks, however, it is not possible for deeper draught vessels to utilize the entire area. They usually make use of sea

[1] traffic stream: 'traffic stream' used by the International Maritime Organization (IMO) to indicate a traffic pattern, including IMO Ass. Res 572(14)

areas where there is sufficient natural or dredged depth. Many large ships thus sail via the same traffic stream which sometimes gives rise to busy shipping traffic. Ship routeing systems adopted by the International Maritime Organization (IMO) on the basis of international law which in turn influence the choice of certain routes apply to some frequently used traffic streams. None of the adopted routes require ships to follow these. Safety zones have been set up only around some permanent installations where shipping is restricted.

This creates traffic patterns which are described in greater detail below. A portion of shipping traffic, however, remains spread throughout the entire BNS area.

Traffic patterns and routes in the BNS

A large percentage of traffic in the BNS travels along heavily used traffic streams across sea areas for which the International Maritime Organization (IMO) has adopted one or another routeing scheme.

- The East - West traffic across the Noordhinder traffic separation scheme in the northern part of the EEZ. This traffic separation scheme[2] forms part of a large traffic separation scheme through the Strait of Dover and is used for shipping between the southern part of the North Sea and the northern part of the Baltic Sea. It is one of the most heavily navigated shipping areas in the world. Joining this is the Noordhinder precautionary area which continues further into Dutch territory.

- Traffic across the Westhinder traffic separation scheme. This traffic separation scheme connects at Dunkirk to the East - West traffic separation scheme and is used by ships to and from the Belgian coastal ports and the Scheldt ports. More than 90% of the shipping traffic that makes use of this has a Scheldt port as destination or starting point and will thus travel to or come from the Scheldt estuary. Connecting to this traffic separation scheme is a precautionary area indicated by the IMO[3] where the pilot crossing post Wandelaar and pilot crossing post LNG carrier are located. Next to this area is the Westhinder anchorage area, also designated the Oostdyck anchorage area, supplemented with an area to avoid[4] adopted by the IMO between the Westhinder

[2] It has become a routeing measure with its objective to separate opposing traffic streams by appropriate means and by the establishment of traffic lanes (see the definition in Resolution A.572(14) of the International Maritime Organization)

[3] A routing measure which contains an area within certain borders where ships may navigate with particular caution and in which the direction of the traffic stream can be recommended (see the definition in Resolution A.572(14) of the International Maritime Organization)

[4] A routing measure that contains an area with certain border where either shipping is extremely dangerous or where it is extremely important to avoid accidents, which will be avoided by all ships or certain classes of ships, see the definition in Resolution A.572(14) of the International Maritime Organization)

anchor area and the Westhinder traffic separation scheme.

- Connecting to the Westhinder precautionary area is a deep water route adopted by the IMO[5]. This route has the status of a recommendation. This is a route with great depth which enables deep-draught ships to navigate to the coastal ports or to the Scheldt estuary. These ships cannot navigate by other routes due to their draught. Due to their large dimensions, a demarcated route with specific rules and sufficient space is necessary for safe navigation.

Furthermore, the IMO has designated the site area for installations for offshore electricity production, surrounded by a 500 metre zone (so long as the border with the Dutch EEZ is not crossed), as a precautionary area. A 500 metre safety zone[6] applies around every permanent construction within the concession areas[7].

In addition to the adopted routeing systems often used by the IMO, there are also important and often-used shipping traffic streams in the BNS from and to the Belgian ports or Scheldt ports. On the one hand, these traffic streams are used by shipping because they are demarcated or dredged to a designated target depth and are therefore safer; on the other hand, ships opt for the most economical and fastest safe route. For instance, for the ferries to the North of England, there is a much-used traffic stream running along the western edge of the zone designated for installing sites for offshore electricity production, then curving north to the precautionary area at the end of the Noordhinder traffic separation scheme in order not to have to cross the traffic separation scheme itself because this is subject to additional traffic regulations. These ferries also have a more limited draught so that they can navigate more easily through shallow waters.

The most important, often-used traffic streams for which no routeing schemes have been adopted by the IMO are:

[5] A route within certain borders which has been carefully investigated for free space to the sea floor or submerged obstacles as indicated on the map (see the definition in Resolution A.572(14) of the International Maritime Organization)

[6] See Article 60, paragraphs 4 and 5 of UNCLOS: The coastal State can, where necessary, establish reasonable safety zones around such artificial islands, installations and constructions, within which
it can take appropriate measures to ensure the safety of shipping as well as the artificial islands, installations and constructions. Supplement with paragraph 5

[7] Royal Decree of 11 April 2012 concerning the safety zone for artificial islands for energy
Royal Decree of 11 April 2012 establishing a safety zone around the artificial islands, installations and constructions for generating energy from the water, tides and wind in the sea area under Belgian jurisdiction.

- The Westpit. This is a traffic stream which runs along the southern side of the installation area for offshore electricity generation in an east-westerly direction. This is used by the traffic that arrives or departs to the north and has a Belgian coastal port of Scheldt port as starting point or destination. Thus ships destined for Antwerp or Ghent also use this route. Only the smaller ships can use the Oostgat[8] to navigate to Antwerp or Ghent. All traffic coming to and from Zeebrugge or from the North also makes use of this traffic stream. This is thus a heavily navigated area with large ships with a deep draught. Last year there were approximately 4,500 ship movements[9] here. There is no alternative route possible for shipping, certainly for ships with a deep draught. The intensity of traffic on this traffic stream will only increase by the construction of wind farms at sea in the coming years. Deep-draught ships can now still navigate through the middle of the installation area where there is sufficient depth, but once construction in this area starts, this will no longer be possible. Last year approximately 1,500 deep-draught ships navigated through the installation area from and to the Belgian coastal ports and Scheldt ports. These ships will also have to make use of the Westpit. This will become one of the most important shipping traffics streams for ships to and from the Belgian coastal ports and Scheldt ports. If this could no longer be used, the ships will be obliged to travel very far, so that many shipping companies will likely opt to no longer dock at a Belgian coastal port or Scheldt port, which would bring substantial economic losses along with it.

- Traffic streams from the Wandelaar pilot station to Zeebrugge via Scheur and Zand and to Vlissingen via Scheur, Wielingen. These traffic streams are of essential importance for the accessibility of the port of Zeebrugge and the Scheldt ports and are very often used by all types of ships. For most ships this is the only possible access channel to or from the ports.

- The traffic stream from and to Ostend and Zeebrugge including the Ostend – Dover - Ramsgate coastal route across D1, between sandbanks to Buitenratel to Dyck 2 – Dyck 1. This traffic stream is used by ferries from and to Great Britain. They travel on a very regular basis, sometimes daily, and due to their limited draught are not bound to the deeper access channels. The captain determines his route, taking economic factors in mind, but also weather conditions, the tide, safety ...

This shipping traffic where no routeing schemes adopted by the IMO apply are of great economic importance for the Belgian ports - the coastal ports as well as the Scheldt ports. Certainly for the larger commercial ships, there are no alternative routes due to their limitation because of draught and their dimensions. Smaller ships which are not bound by draught mainly determine their selected route from an economic perspective, but also out of safety concerns.

[8] The Oostgat: access channel in the Scheldt estuary on the eastern side, close to Vlissingen. Due to its limited depth only accessible for smaller ships.
[9] Data from the Shipping Assistance Division.

Alongside these often-used traffic streams, which are of great economic importance, there are also a few other traffic streams which, while used less frequently and mainly by smaller ships, are also of substantial importance. This primarily concerns the traffic stream along the coast which is used by coastal navigators or Short Sea Shipping and the traffic streams to the ports of Ostend and Nieuwpoort. These traffic streams are:

- Ruytingen
- Flemish Banks Route
- Buitenratel
- Kwinte Bank
- Negenvaam
- Uitdiep channel
- Ostend-Zeebrugge under the Wenduine Bank
- Ostend-Nieuwpoort via Noordpas and Westdiep channel

During the construction phase of the wind farms there will also be substantial shipping traffic to and from the zone destined for renewable energy and the ports. This will have them cross a few heavily-used shipping traffic streams such as the Westpit and those used by ferries, west of this area. In total it concerns approximately 8,000 ship movements annually. After completion of all the farms, ships will continue to navigate in and out of the area for maintenance.

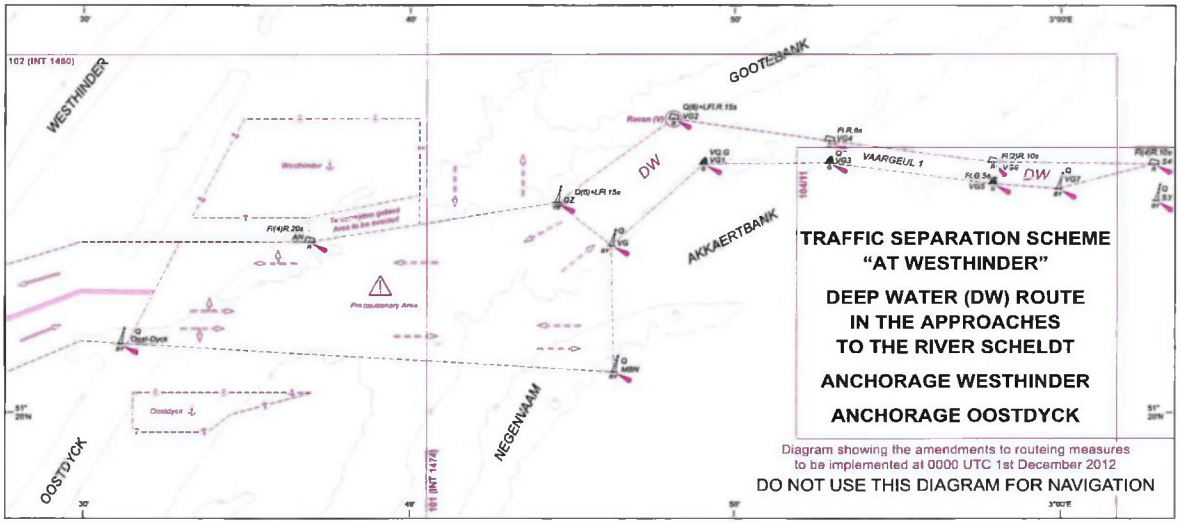
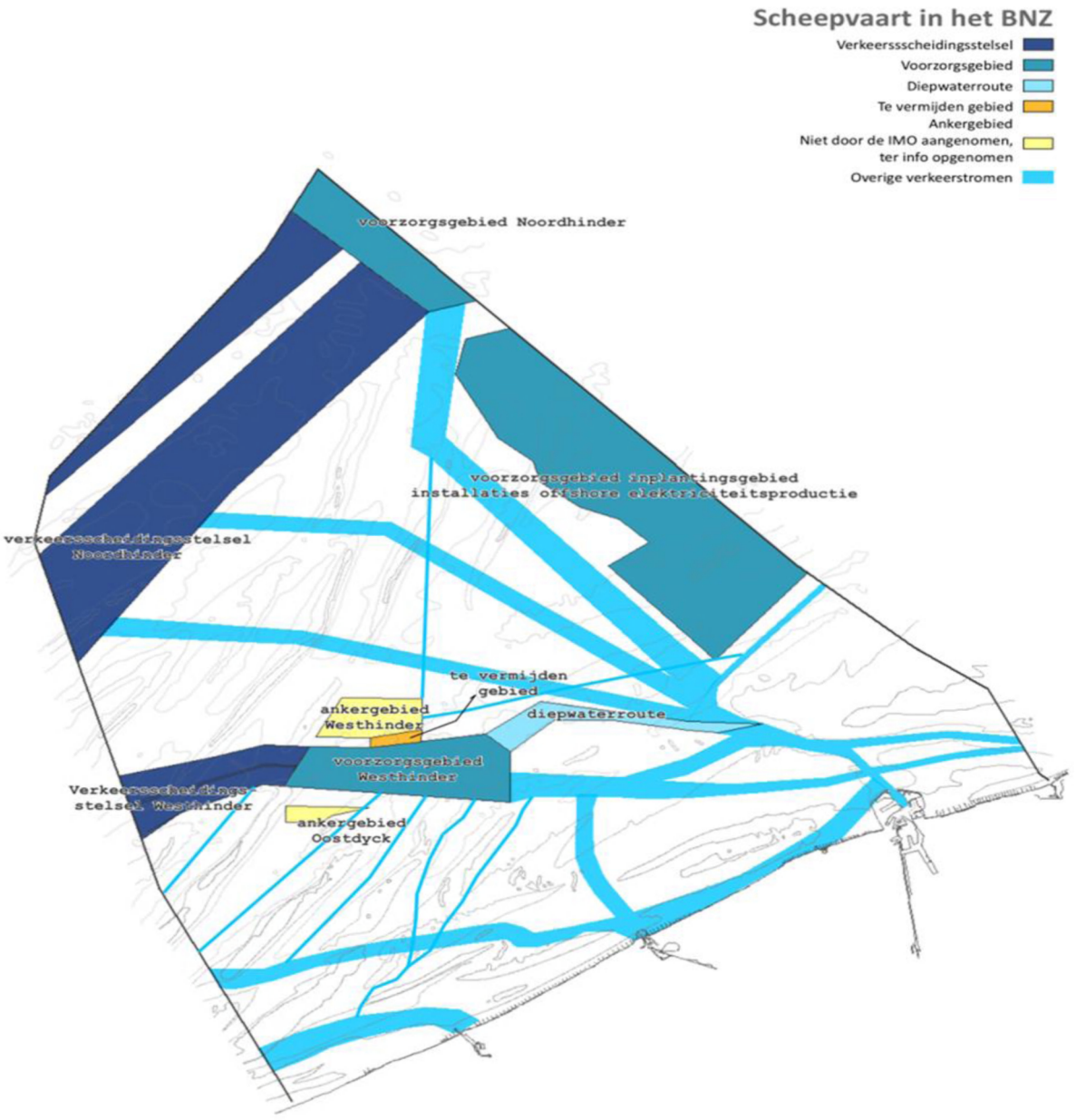


Figure: Adjustments to the traffic separation scheme since 1/12/12 [*Source: Government of Flanders, Shipping Assistance Division of Maritime Services and Coast (MDK)].*


Scheepvaart in het BNZ
Verkeerssscheidingsstelsel
Voorzorgsgebied
Diepwaterroute
Te vermijden gebied
Ankergebied
Niet door de IMO aangenomen, ter info opgenomen
Overige verkeerstromen
voorzorgsgebied Noordhinder
voorzorgsgebied inplantingsgebied installaties offshore elektriciteitsproductie
verkeersscheidingsstelsel Noordhinder
te vermijden gebied
ankergebied Westhinder
diepwaterroute
voorzorgsgebied Westhinder
Verkeersscheidings-stelsel Westhinder
ankergebied Oostdyck

Translation of this map:

- "Scheepvaart in het BNZ" means "Shipping in the BNS"
- "Verkeersscheidingsstelsel" means "traffic separation scheme"
- "Voorzorgsgebied" means "Precautionary area"
- "Diepwaterroute" means "Deep water route"
- "Te vermijden gebied" means "Area to be avoided"
- "Ankergebied" means "Anchorage area"
- "Niet door de IMO aangenomen, ter info opgenomen" means "Not adopted by IMO, mentioned for information"
- "Overige verkeerstromen" means "Other traffic streams"

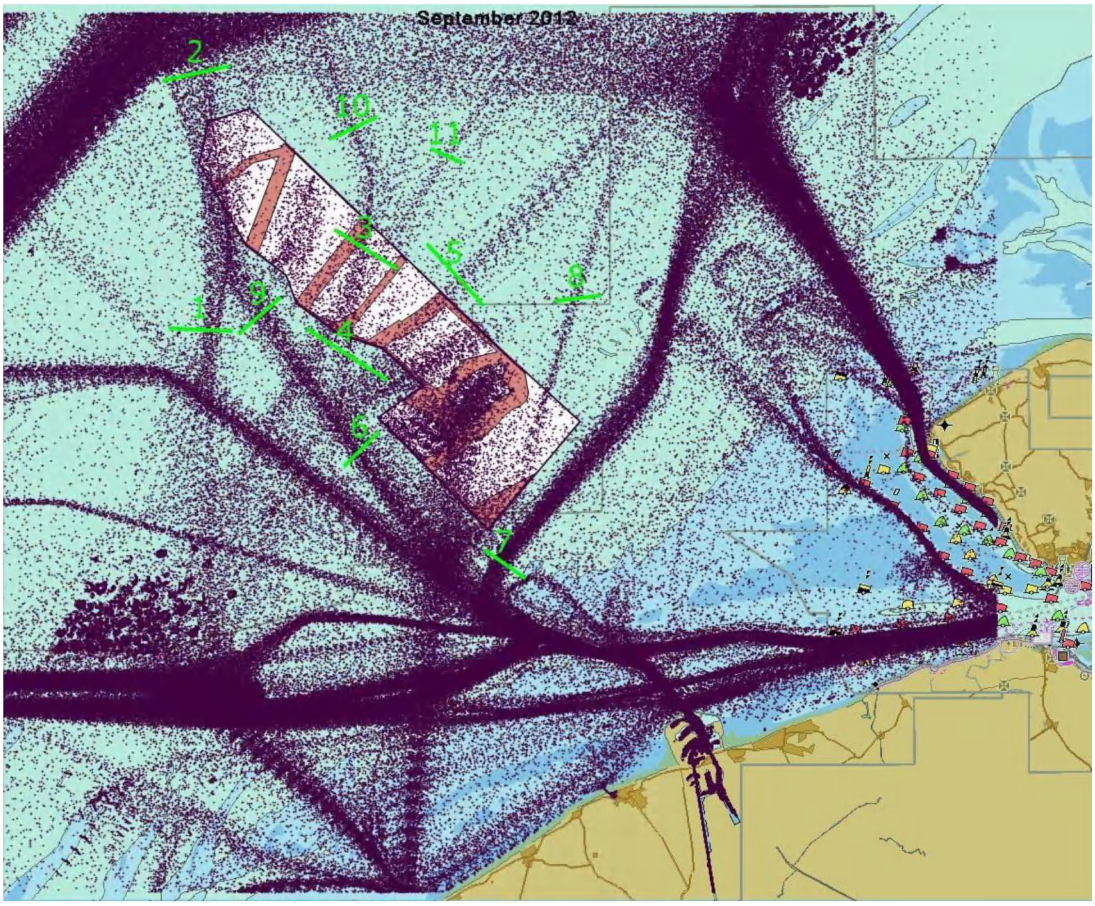


Figure: Shipping intensities based upon AIS data (for the month of September 2012), with indication of the locations for which intensities are available *[Source: AIS DATA, Scheldt Radar Network Management and Operation Team].*

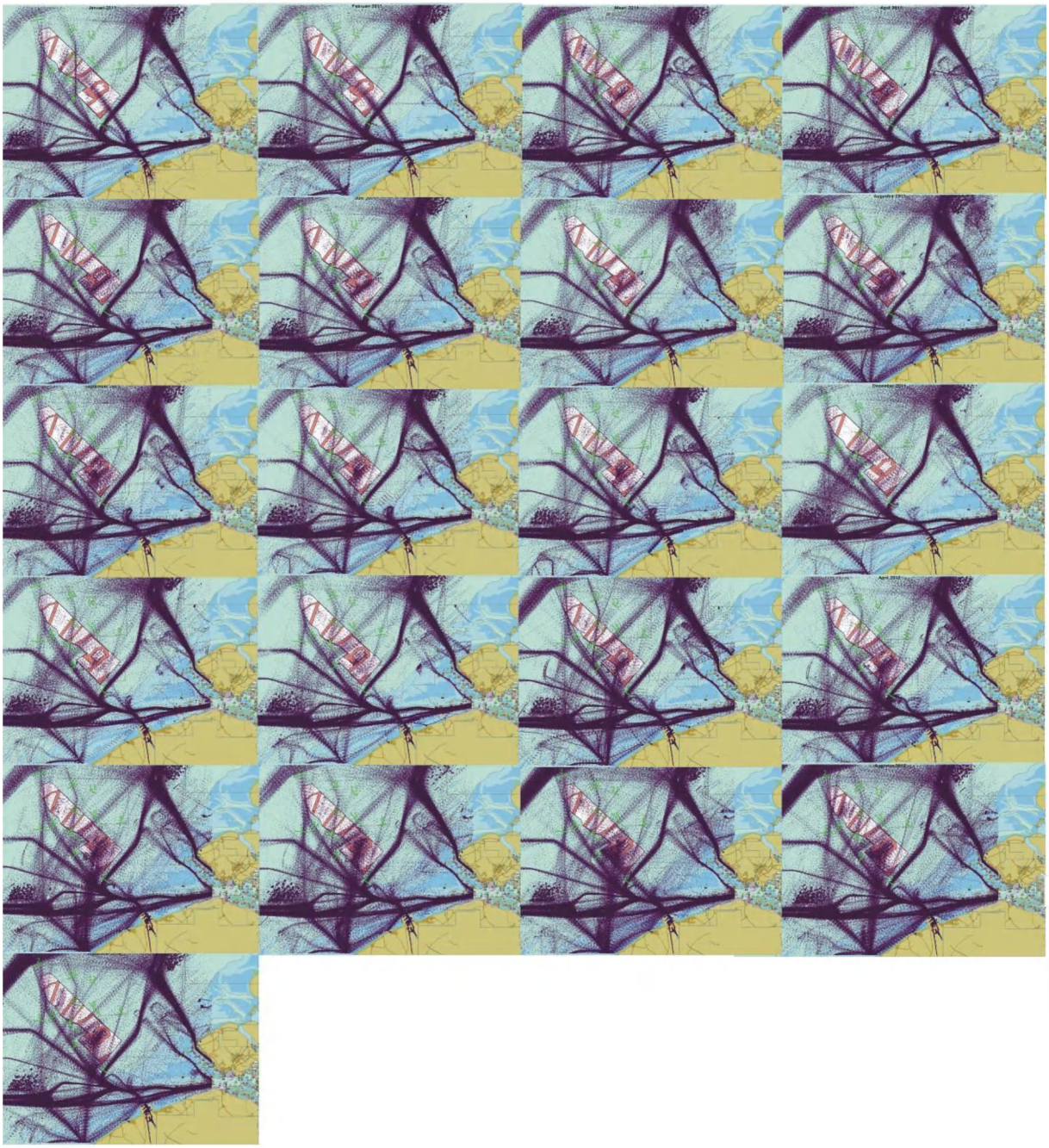


Figure: overview of all AIS shipping movements in the period January 2011 (top left) through September 2012 (bottom left) *[Source: AIS DATA, Scheldt Radar Network Management and Operation Team]*. ***In 2011 and 2012, works were conducted to the C-Power Project; these are clearly visible on the images. The increase in intensity is also visible.***

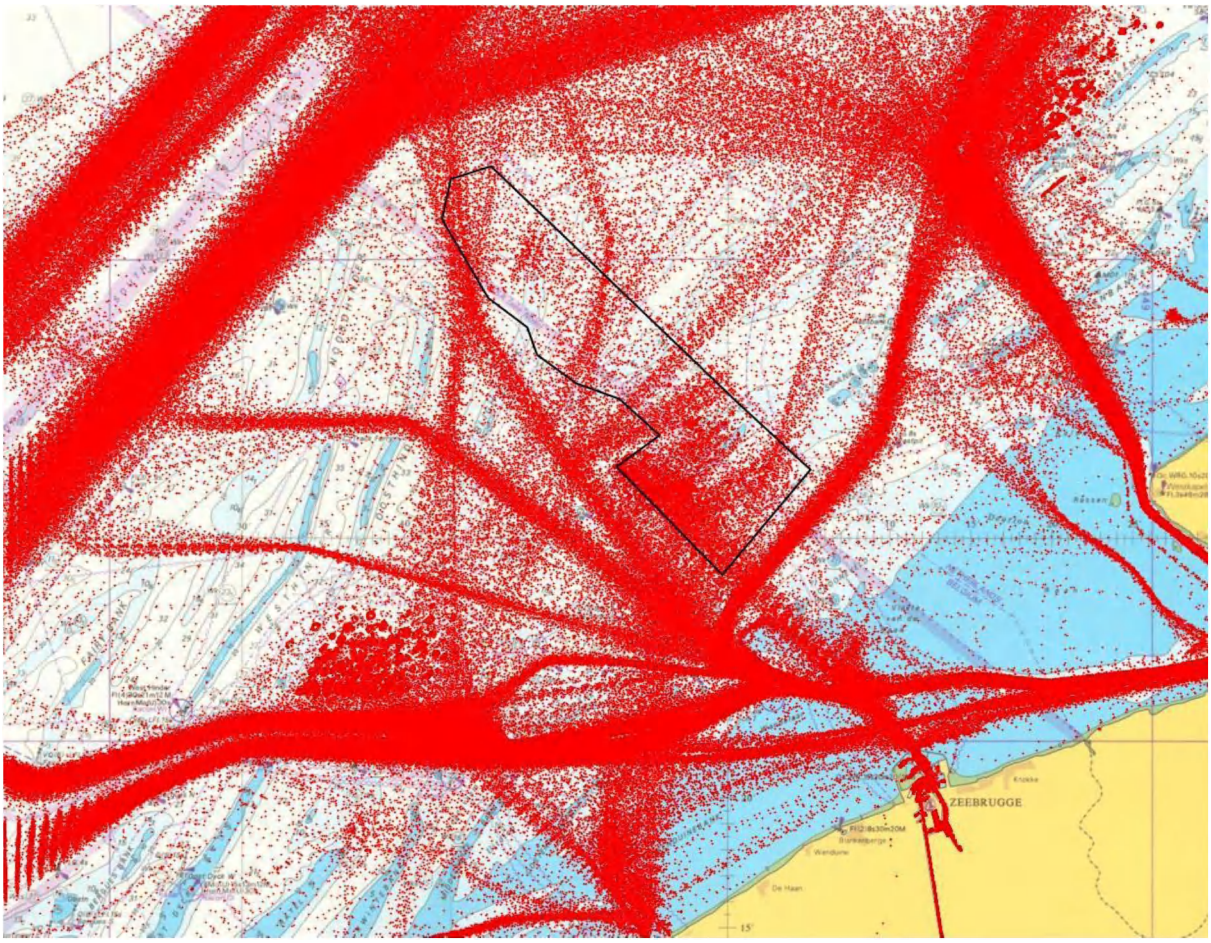
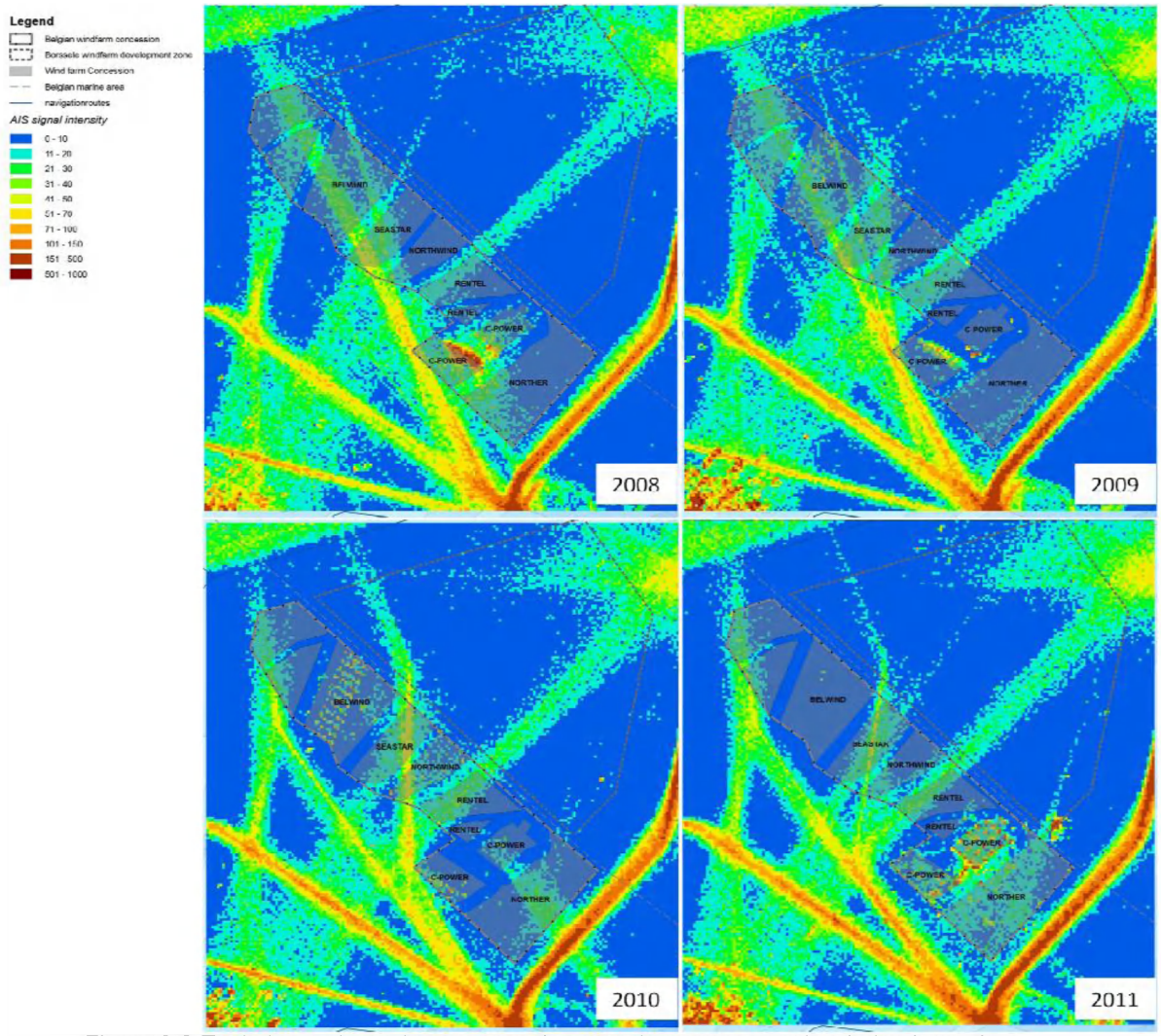


Figure: AIS Shipping Data, June 2012 *[Source: AIS DATA, Scheldt Radar Network Management and Operation Team].*



Figuur 6-3 Evolutie van het scheepvaartverkeer rondom en tussen de windmolenparken tussen 2008 en 2011 (bron AIS-data: Beheer- en Exploitatie Team Schelderadarketen, J. Raes, Hoofdbeheerder BET-SRK (VL), A. Descamps, Afdelingshoofd Scheepvaartbegeleiding)

Figure: Evolution of the shipping traffic around and through the wind farms between 2008 and 2011 *[Source: AIS-data, Scheldt Radar Network Management and Operation Team]*

Ports

The ports of Antwerp, Ghent, Zeebrugge and Ostend form the Belgian North Sea port cluster. They are located within a radius of 50 km, which creates one of the primary bridgeheads for maritime trade connections between the various continents and the European hinterland.

In 2010, this cluster loaded and unloaded around 260 million tonnes of goods, with a total container transfer of slightly more than 11 million TEU. Volumes such as these place the Belgian North Sea port cluster (thus, the four ports combined) within the top 10 ports in the world. The total amount of goods handled in 2003 was some 204 million tonnes, which signifies a 30% increase.

The port of Antwerp is good for more than 70% of the goods; Zeebrugge more than 15%; Ghent 10% and Ostend 3%.

Socio-economic significance of the Belgian fleet and ports

The trade fleet sailing under the Belgian flag represents a Gross tonnage (GT) of more than 4 million and a Deadweight tonnage (DWT) of more than 6.5 million, which places it among the top 35 of IMO Member States.

The fleet controlled by Belgium is itself good for 12.5 million DWT, or more than 1% of the total trade capacity on the sea, which is good for a place among the top 25 seafaring countries.

The shipping-related industry is good for more than 12,100 jobs and generates an annual turnover of € 4.2 million. The (broader) port industry provides nearly 108,000 direct and more than 137,000 indirect jobs.

In 2010, turnover in the various ports amounted to approximately € 400 million, of which Ostend is good for € 6 million (1.5%), Ghent € 30 million (7.5%), Zeebrugge € 60 million (15%) and Antwerp € 307 million (77%). For all the ports, this is a major increase as compared to 2003 (27% growth to 45%), except for the port of Ostend which saw its turnover decrease in 2009 and 2010.

In 2008, the direct added value of the shipping industry (fleet) amounted to more than € 15.3 million, with indirect added value of € 13.1 million. The added value of the ports themselves also increased in the period from 2003-2008 to a total value of nearly € 30 billion (direct and indirect added value).

Socio-economic significance of the ports	Employment (2003)	Employment (2008)	Difference (in %)	Percentage of total employment (2008, in %)	Percentage of handled goods (2010)	Percentage of turnover (2010)
Ostend	8,505	10,252	+20.5	4%	3%	1.5%
Ghent	64,591	68,752	+6.4	26%	10%	7.5%
Zeebrugge	21,710	25,445	+17.2	10%	15%	15%
Antwerp	140,864	155,327	+10.3	60%	70%	77%
Total	**235,670**	**259,776**	**+10.2**	**100%**	**100%**	**100%**

Table: Socio-economic significance of the Belgian ports *[Source: Grontmij, table of Grontmij (2012) on the basis of Arcadis, 2010 in: Belgian State, 2012. Socio-economic analysis of the use of Belgian maritime waters and costs related to the adverse effects on the maritime environment. Maritime Strategy Framework Guidelines – Art. 8, par 1c. Federal Public Service for Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp., 86-94],*

Location requirements

Safety is extremely important for shipping and therefore the shipping routes must be free of obstacles. The most important criteria are depth and manoeuvrability. If the depth is insufficient the route must be dredged. All potential obstacles also must be removed. Wrecks that constitute obstacles must be buried or moved.

9.8 Commercial fishing

Existing situation in the BNS

Commercial fishing is a regional competence. The impact of fishing on the marine environment is a federal competence. It goes without saying that without alignment between them, the effectiveness of regulation raises questions.

Number of Belgian vessels and their capacity

The percentage of Belgian sea fishing in overall European fishing is rounded off to 1%.

At the start of 2011, the Belgian sea fishing fleet consisted of 89 fishing vessels. This is a sharp decrease as compared to the 1950s when there were still more than 450 vessels.

Nearly the entire Belgian fleet works by beam trawling (dragnets). However, beam trawl fishing in recent years has been systematically reduced in a controlled manner in the framework of the Multi-Annual Orientation Programme (MOP), an initiative of the European Union. To this end, 21 Belgian

vessels were scrapped in 2004, and another 9 vessels in 2009.

The fleet can be divided into[xix]:

- The small and mid-sized fleet segment (max. capacity of 221 kW of 300 hp): 46 vessels. This segment can be further divided into coastal fishermen (small) and the Eurokotter trawlers[xx] (mid-sized); the ratio is approximately 50% each.

- The large fleet segment (capacity of more than 221 kW/300 hp): 43 vessels. Within this segment, the large beam trawlers (capacity more than 810 kW) are by far the most important. The supply from this class represented 2/3 of the total Belgian supply in 2010 (Tessen & Velghe, 2011).

Parallel to the decline in the number of vessels, the average capacity of the vessels is increasing. The average gross Tonnage (BT) has increased since the 1950s to an average in 2009 of 580 kW and 180 BT[xxi].

Division of vessels according to fishing methods

Seabed fisheries are considered as an 'active' fishing method and have long been the most applied technique by Belgian fishers. As concerns the catch as well as the value, the percentage of trawl fishing in Belgium is approximately 85%[xxii]. Another active technique is otter trawling, which only has a small percentage. The sector has provided a number of efforts to realize alternative fisheries methods. To this end, 'alternative trawlers' equipped with, for instance, wing profiles, rolling beam heads and Benthos escape windows.

Due to the systematic reduction of trawler fisheries, the percentage of 'passive' fishery is indeed increasing. Passive fishing techniques include, among others, the use of gill netting, tangle nets, hooks, lines and fyke nets.

no seabed disturbance	alternative techniques	seabed disturbance
tangle nets	Pulskor shrimp trawler	beam trawler
gill nets	Pulskor flatfish trawler	otter trawler
pots	Light on-board nets	alternative beam trawler
lines		shrimp trawler
fyke nets		sumwing trawler

Table: overview of fishing techniques

Belgian fishing harbours and fish supply

There are three fishing harbours on the Belgian coast: Nieuwpoort, Ostend and Zeebrugge:

- Nieuwpoort is the smallest harbour. Not even 2% of the total Belgian catch comes from this harbour. Mainly vessels from the small segment dock in Nieuwpoort (coastal

fishery). There is no catch by container or by foreign vessels;

- The largest portion of landings at the port of Ostend consists of small vessels, but also fishing vessels from the large segment land their catches in Ostend. The share of the Port of Ostend in the total catch amounts to roughly 35%. Approximately half of the catch is supplied by container. The landings and catch of foreign vessels are limited here;

- In the port of Zeebrugge, the majority of landings are in the large fleet segment, which leads to a large supply which is good for approximately 65% of the total supply in Belgium. In Zeebrugge as well, approximately half is supplied by container and the landings of foreign vessels are rather limited.

Since the end of the 1950s, the total supply by Belgian fishing vessels has declined (in Belgian and foreign ports) almost continually and now amounts to approximately half of what it was 20 years ago. Approximately 80% of the Belgian catch goes to the Belgian harbours. The Netherlands constitutes by far the most important foreign market for Belgian fish. France and Great Britain are among the emerging markets due to targeted fishery for scallops[xxiii].

The total supply in the three Belgian ports in 2010 was 15,970 tonnes, for a total value of € 65 million. In 2003, the total catch amounted to more than 20,000 tonnes with total value of just under € 80 million. In 2006, the total value reached an absolute pinnacle met € 81.7 million. It has decreased substantially since then, with a nadir in 2009 (less than € 60 million). In 2010 and 2011, the total value rose again.

In 2009, the average landing value of a vessel from the large fleet segment was slightly higher than € 1.1 million; for a vessel from the small fleet segment, the average landing value was less than half a million €. If we solely consider coastal fishery, then this is even less than € 0.3 million.

Fish processing industry

The fish processing industry processes sea or freshwater fish for human consumption. In 2005, the industry numbered some 260 companies: 5 large, 20 SMEs and more than 200 small and micro-enterprises. Production and turnover within the Belgian fish processing industry increased by some 20% to € 420 million in the period from 2000-2007. Nearly 70,000 tonnes were produced[xxiv] in 2007.

Socio-economic aspects

The gross added value of the fishery industry is very low in comparison with the gross domestic product (0.04%), but it is of great importance on a regional scale[xxv].

Belgian sea fishery creates direct employment of an estimated 900 persons, approximately 720 of which are officially registered fishermen[xxvi]. The Belgian fishery industry on average provides work for 2,500 persons; the derivative sectors number some 5,000 workers. In 2007, the fish processing industry gave work to another 1,350 persons (mainly labourers)[xxvii].

Vessels from the large segment usually do not fish in the BNS, but in general fish off the British and Irish coasts, in the coastal waters of Denmark, the Netherlands and France or in the Bay of Biscay. These vessels generally stay approximately 10 days at sea and primarily catch sole and plaice.

Belgian vessels from the small and mid-sized segment (coastal vessels, Eurokotter trawlers…) mainly fish in Belgian waters, and to a lesser extent also in Dutch waters, and often not farther than the 12 mile zone. These vessels usually do not stay longer than 24 hours at sea and are sailed on average by 2-3 crew members. Coastal fishers navigate on average 160 days per year; Eurokotter trawlers 185 days on average.

On the other hand, foreign vessels can also fish in the BNS, taking into account a number of preconditions.

Belgian vessels	Number of vessels (rounded)	Average GT (rounded)	kW (rounded)	Fish catch (rounded, in tonnes)	Percentage fish catch in Belgian harbours (rounded)	Total value (rounded, in million €)
1950	450	60	100	55,000	100%	
1970	340	100	220	47,000	100%	
1980	200	100	300	40,000	80%	
1990	200	120	380	35,000	90%	75
2000	140	180	500	27,000	65%	60
2009	90	180	580	20,000	80%	60

Table: Socio-economic significance of the Belgian ports *[Source: Grontmij, table of Grontmij (2012) on the basis of Arcadis, 2010 in: Belgian State, 2012. Socio-economic analysis of the use of Belgian maritime waters and costs related to the adverse effects on the maritime environment. Maritime Strategy Framework Guidelines – Art. 8, par 1c. Federal Public Service for Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp., 36-41],*

Within the Belgian 20 mile zone, on the other hand, no really 'poor' fishing area can be found. The entire zone is valuable, whether as fishing area or as spawning area.

Based upon research (counts, control flights, qualitative research…), a picture can be formed of the important fishery areas in the BNS. From this, the entire coastal zone clearly comes to the fore, as well as the main sandbanks deeper at sea. There is hardly any fishery in the large shipping lanes because of the safety risk.

Based upon MUMM control flights and Institute for Agriculture and Fisheries (ILVO) data, some insight can be obtained into the most heavily fished areas in the BNS[xxviii]. Shrimp fishery is mainly located at the sandbanks; fishery for other types is sooner in the channels between sandbanks and on the flanks of the sandbanks.

- Shrimp fishery is conducted by Flemish fishing vessels nearby the Vlakte van de Raan sandbank, Ostend and the Coastal banks;

- Beam trawler fishery (Flemish as well as Dutch) is active in the broad area of the Vlakte van de Raan sandbank, the sea land banks and the Hinder banks. According to other data,[xxix] the Belgian beam trawler activity is concentrated at the Flemish Banks and south of the Goote Bank.

- Larger beam trawler vessels are spread throughout the BNS more uniformly, but their intensity is lower.

- English, Danish and French fishery vessels are only seen once in a while inside Belgian territorial waters;

- Otter trawling is rather limited in the BNS between the Goote Bank and Thornton Bank and south of the Vlakte van de Raan;

- Tangle and gill netting fishery is mainly a French affair and is restricted offshore from the 12 mile zone on the BNS itself and to the edge of the French-Belgian territorial border;

- To this point, the spread of tangle fishery is limited in Belgian waters.

- There is potential for expanding sole fishery with small boats, mainly within the 12 mile zone. The potential areas depend on other human activities, mainly boom trawler fishery and sand reclamation. Without limiting these uses, the most important possible areas are concentrated on the sandbanks.

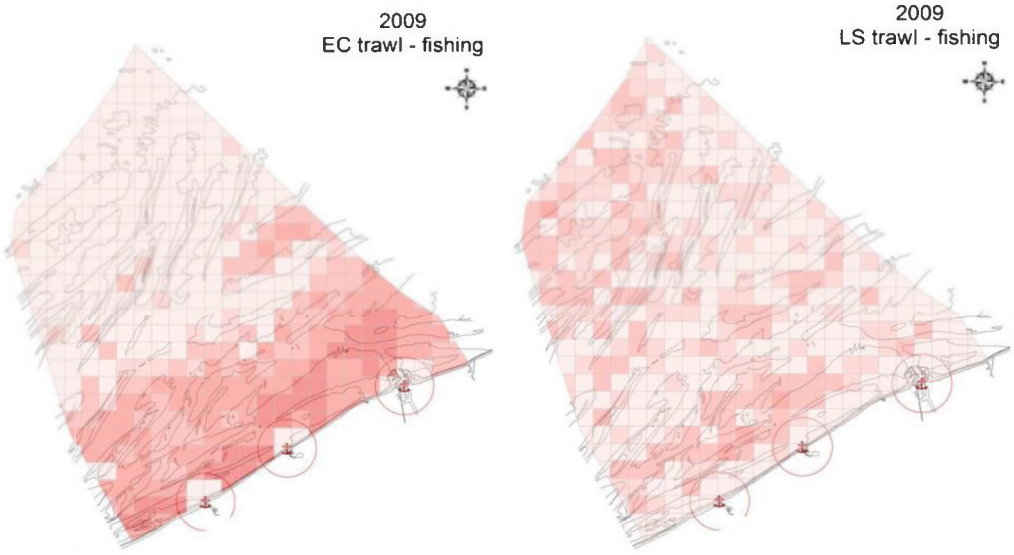
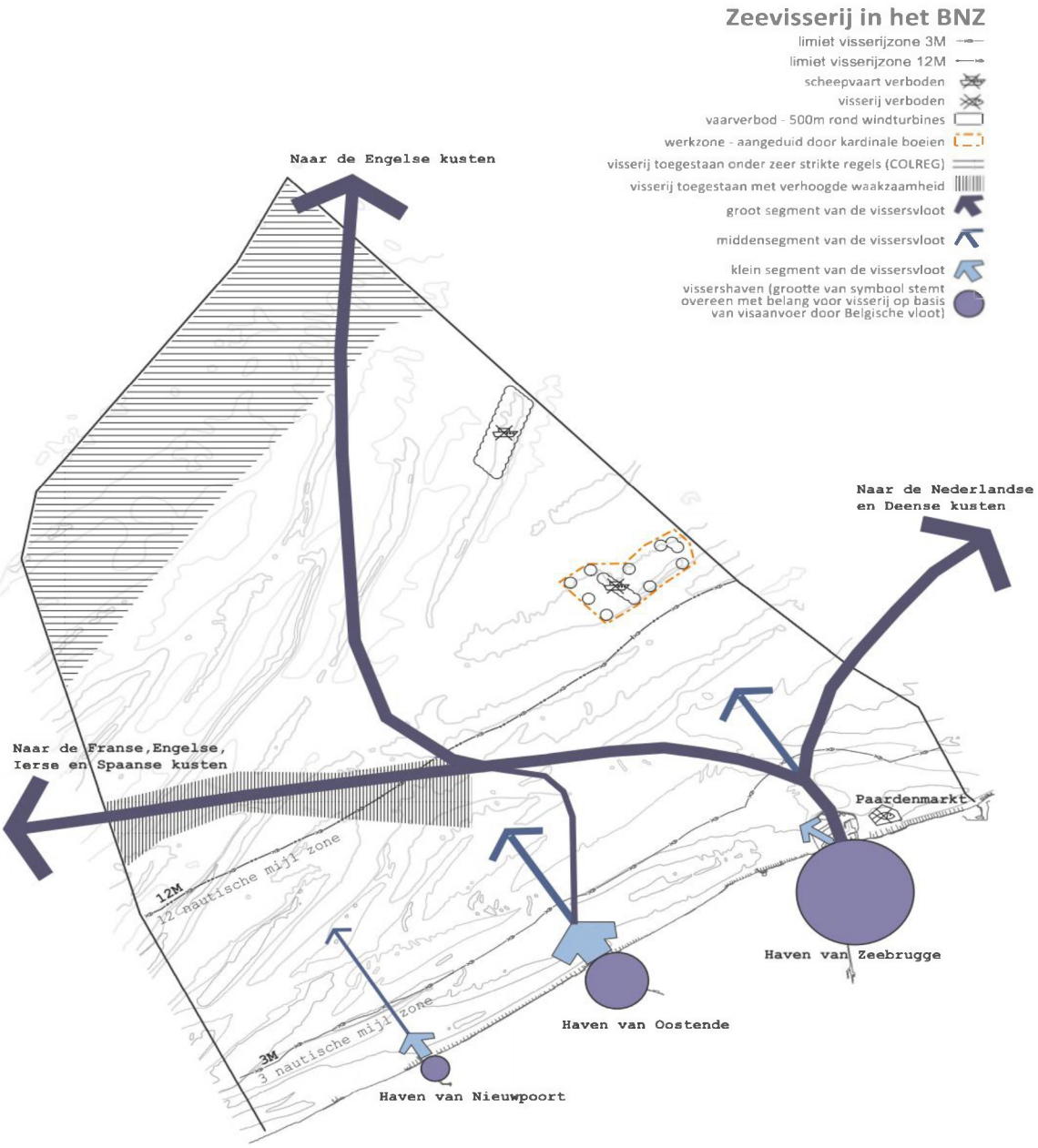


Figure: Map of the fishing activities of the Belgian fishing vessels on the BNS (EC trawl: dragnets with capacity under 300 hp, LS trawl: dragnets with capacity higher than 300 hp). *Colours reflect the gradients in numbers of VMS registrations [Source: Depestele et al., 2012, adapted in Initial Assessment, p. 49].*

The most important supply types are plaice and sole, and additionally shrimp and ray. The catch of scallops, cod, dab, lemon dab, squid and dogfish complete the 'top 10' of caught types[xxx]. In this regard it should be noted that the caught types are not only caught in the BNS.

In the BNS they mainly catch plaice, flounder, sole, cod, whiting, haring and shrimp.


Zeevisserij in het BNZ
limiet visserijzone 3M
limiet visserijzone 12M
scheepvaart verboden
visserij verboden
vaarverbod - 500m rond windturbines
werkzone - aangeduid door kardinale boeien
visserij toegestaan onder zeer strikte regels (COLREG)
visserij toegestaan met verhoogde waakzaamheid
groot segment van de vissersvloot
middensegment van de vissersvloot
klein segment van de vissersvloot
vissershaven (grootte van symbool stemt overeen met belang voor visserij op basis van visaanvoer door Belgische vloot)
Naar de Engelse kusten
Naar de Nederlandse en Deense kusten
Naar de Franse,Engelse, Ierse en Spaanse kusten
12M
12 nautische mijl zone
3M
3 nautische mijl zone
Paardenmarkt
Haven van Zeebrugge
Haven van Oostende
Haven van Nieuwpoort

Translation of this map:

- "Limiet visserijzone 3M" means "Limit fishery zone 3M"
- "Limiet visserijzone 12 M" means "Limit fishery zone 12M"
- "Scheepvaart verboden" means "Shipping prohibited"
- "Visserij verboden" means "Fishing prohibited"
- "Vaarverbod – 500 m rond windturbines" means "Navigation prohibition – 500 m around wind turbines"
- "Werkzone – aangeduid door kardinale boeien" means "Work zone – indicated by cardinal buoys"
- "Visserij toegestaan onder zeer strikte regels (COLREG)" means "Fishery allowed under very strict rules (COLREG)"
- "Visserij toegestaan onder verhoogde waakzaamheid" means "Fishery allowed under increased vigilance"
- "Groot segment van de vissersvloot" means "Large fishery fleet segment"
- "Middensegment van de vissersvloot" means "Mid-sized fleet segment"
- "Klein segment van de vissersvloot" means "Small fleet segment"
- "Vissershaven (grootte van symbool stemt overeen met belang voor visserij op basis van visaanvoer door Belgische vloot)" means "Fishing harbour (size of the symbol corresponds with importance for fishery based on fish supply by Belgian fleet)"

Location requirements

Rich, unpolluted fish areas are necessary for a good, large and healthy catch. However, there is little objective data available about the presence of fish in so-called fish-rich or fish-poor areas.

Other criteria also play a role in addition to the nature of the fishing grounds:

- Distance to fishing ports;
- Presence of obstacles and (intensity of) non-compatible users.

9.9 Marine aquaculture

Existing situation in the BNS

Marine aquaculture is the breeding of marine organisms under controlled conditions in their natural habitats[xxxi]. It can offer an alternative for fishermen who leave the traditional fishery sector.

In Belgium this is a modest and small-scale activity. The breeding possibilities are limited because the BNS has no bays, estuaries, etc ... and the coastline is used for recreational purposes, and in addition is formed by natural habitats and ports. Nevertheless, since 2005 there have been several years of experimentation with aquaculture (mussel breeding) in the BNS. To this end, 'hanging cultivation' is used whereby ropes are

connected to buoys in the sea. The four locations provided for this were:

- D1-buoy north of the 'Noordpas' and near the extension of the 'Smal bank' (between bird habitat 1 and sand and gravel reclamation zone, 0.09 km²);

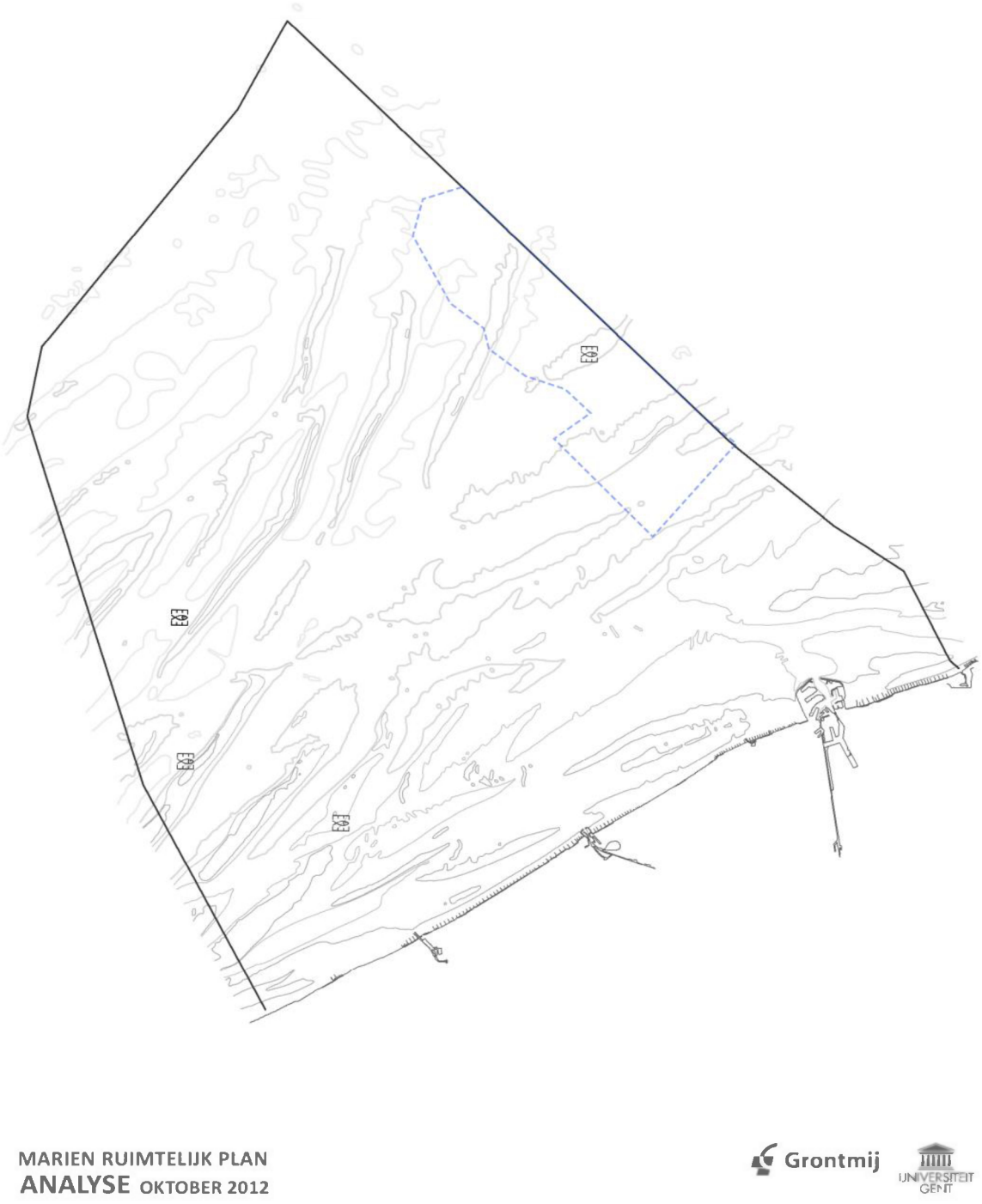
- Zone north of and bordering on the IMO navigation route (southern part of the Westhinder);

- Zone on the Oostdyck, on the south-west side of the sand and gravel extraction area;

- The entire zone delimited for wind concessions.

For this, 1 licence is granted for a period of 20 years. However, for various reasons these experiments were not a commercial success (among others due to other ships passing through), so that the licence (including the accompanying zones) was suspended. Therefore, there is currently no aquaculture in the BNS, but there are projects in the start-up phase (see planning and policy context).

In addition, there are also experiments with turbot and sole cultivation on land. These species were released into the sea after the cultivation period and were scientifically monitored. These releases usually take place at the western part of the Stroom Bank (area of Nieuwpoort-Westende). Currently, however, there are no releases.



Translation of this map:

- "Voormalige locaties voor mariene aquacultuur (concessies zijn geschorst)" means "Former locations for marine aquaculture (concessions have been suspended)"

Location requirements

- Locations without strong currents and heavy storms;
- Good quality of the sea water and the surrounding phytoplankton (as few heavy metals and PCBs as possible).
- Locations without other disturbances (such as outside major shipping lanes, dredging and sand reclamation areas, fishing grounds).

9.10 Dredging

Existing situation in the BNS

Dredging is necessary to keep the Belgian seaports accessible. The channels have to deal with mud sedimentation. Given that the navigational depth must be 15 m TAW (reference altitude Belgium), dredging must take place the whole year round in the channels and ports themselves. The Maritime Access Division is responsible for maintaining this guaranteed depth in the shipping lanes. This is an international obligation established in the framework of the IMO. A distinction is made between:

- 'construction dredging': constructing, deepening and widening ports. This is project-based and can thus vary significantly from year to year.
- 'maintenance dredging': maintaining the required depth for maritime access routes and the coastal ports. This is done the whole year round, except in fishing ports and marinas, where the works take place outside the tourist season.

Various types of dredging vessels are used to this end. Daily depth and density measurements are conducted daily to monitor navigational depth.

Dredging the Nieuwpoort and Blankenberge marinas is the responsibility of the Government of Flanders, Coastal Division.

Every year some 9 to 10 million tonnes of dry material is dredged and dumped back into the sea by three (private) dredging companies[xxxii].

Dredging takes place at the following locations:

- Pas van het Zand;
- Central part of the new Zeebrugge outer port;
- Port and outer port of Zeebrugge;
- Scheur East;
- Scheur West;
- Ostend access channel;
- Port of Ostend;
- Blankenberge access channel;
- Port of Blankenberge;
- Port of Nieuwpoort.

The dredged material is dumped into the sea, In the context of 'beneficial use' of dredging spoil - if sand is dredged, which happens in the Blankenberge and Nieuwpoort access channels, given that sand shoals build up naturally there - the dredging spoil, in casu sand, is used for beach replenishment. In this case it concerns amounts of 20 to 50,000m³

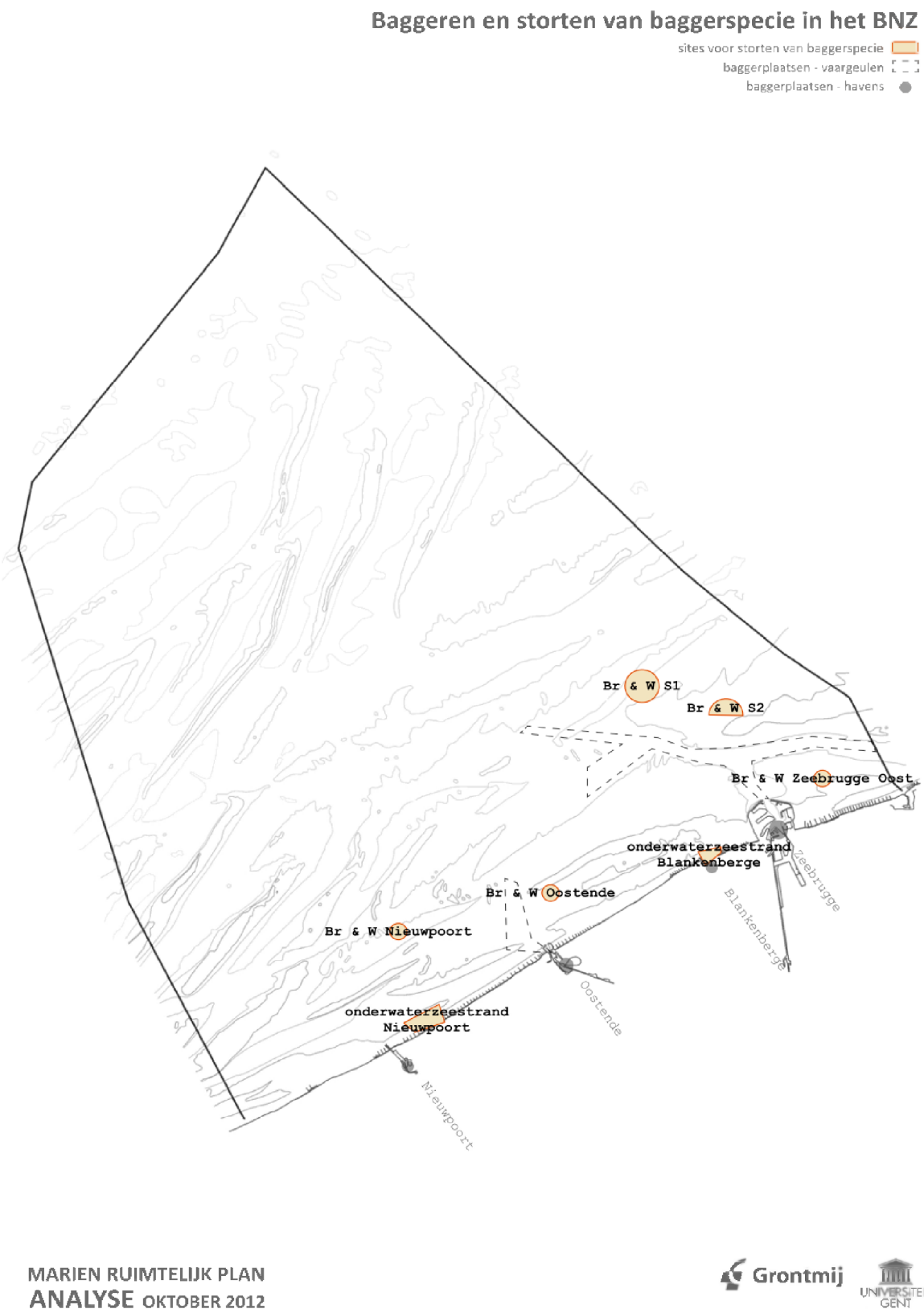
per year. This dumping takes place sporadically; in the last 6 years there have been at most 2 dumps. These are considered as works in the framework of coastal defences (namely, the replenishment of the foreshore).

There are five dumping locations in the BNS:

- S1, S2 and 'Bruggen en Wegen, Zeebrugge Oost' in function of dredging the shipping route to and from the ports of Zeebrugge and Blankenberge;
- 'Bruggen en Wegen, Oostende' in function of dredging the shipping route to and from the port of Ostend;
- 'Nieuwpoort' in function of dredging the port of Nieuwpoort.

In the licensing period 01.01.12 - 31.12.13, 7 authorizations were granted for dumping dredging spoil in the sea.

The most intensively used dumping locations are S1 and 'Bruggen en Wegen Zeebrugge Oost'.



Translation of this map:

- "Sites voor storten van baggerspecie" means "Zones for disposal of dredging spoil"

- "Baggerplaatsen – vaargeulen" means "Dredging zones – traffic lanes"
- "Baggerplaatsen – havens" means "Dredging zones – ports"

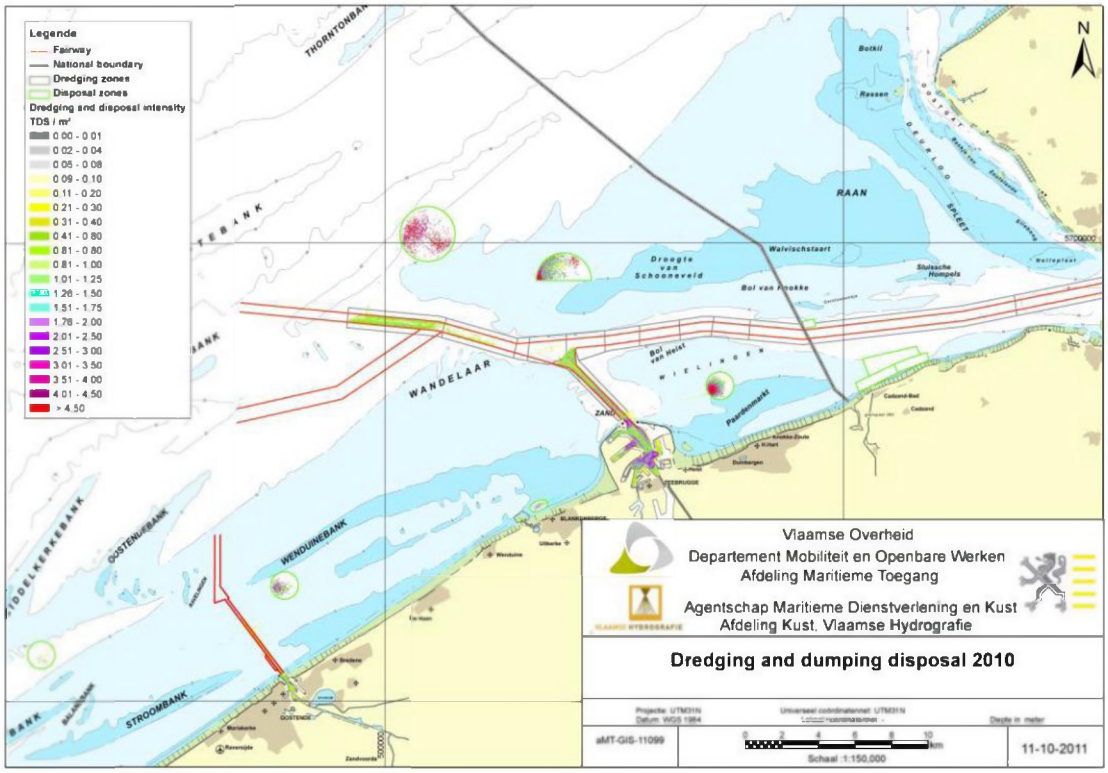


Figure: Dredging and dumping intensity in 2010 *[Source: Government of Flanders, Department of Mobility and Public Works, Maritime Access Division, 11-10-2011; Belgian State, 2012. Initial Assessment of the Belgian marine waters Marine Strategy Framework Directive – Article 8, paragraphs 1a and 1b. MUMM, Federal Public Service for Public Health, Food Chain Safety and Environment, Brussels, Belgium, 81 pp., 52].*

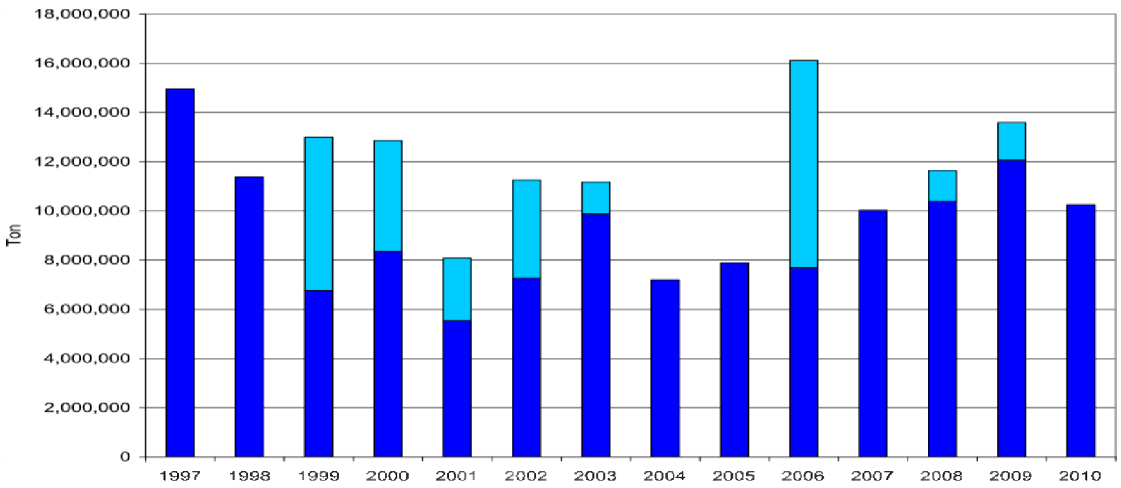


Figure: Overview of the amounts of dredged spoil dumped at sea since 1997 (expressed in tonnes of dry material). Dark blue: maintenance dredging; light blue: capital dredging *[Source: MUMM, in Belgian State, 2012. Initial Assessment of the Belgian marine waters. Marine Strategy Framework Directive – Article 8 paragraphs 1a and 1b. MUMM, Federal Public Service for Public Health, Food Chain Safety and Environment, Brussels, Belgium, 81 pp., 52]*

60-70% of the dumped material is thus transported away and does not remain at the disposal site. A large part of this material consists of silt that, if suspended, can locally increase turbidity[xxxiii]. In this context, in 2003 the disposal site S1 was moved to the north-west after regular dumping of dredged material had formed an artificial dune, making the site inaccessible to dredging ships. Gradual physical recovery of the seabed took place after discontinuation of the dumping activities[xxxiv].

Recently, a study was started in which the current dredging dumping sites are evaluated for their efficiency. This indicated, among others, that the 'Bruggen en Wegen, Zeebrugge Oost' dumping site appeared relatively inefficient given the high chance of it flowing back. The study therefore proposes a number of alternative search zones for a new dumping site. The investigation is still in progress, but could lead to a proposal for an alternative to the Zeebrugge Oost dumping site. This does not exclude the possibility that this zone will be west of the Port of Zeebrugge. The Zeebrugge West dumping test started in December 2012. Results of these tests are anticipated in 2014.

There is currently little information available on a socio-economic level. Average turnover in the 1990s fluctuated around € 50 million, wherein the years '99 and '00 were good for a turnover of around € 60 million (capital dredging took place during those years)[xxxv].

Employment was mainly located in the private sector. Until 2005, the dredging activities were conducted by the Temporary Dredging Association 'North Sea and Coast', consisting of Dredging International NV, Jan De Nul NV and Decloedt & Zonen NV. Since 2005, the dredging has taken place after calls for bids. Based on a survey at these companies, it appeared that they number 240 employees, 65% of whom work on board. Another estimate puts the number at 560 employees (based on wage costs and the annual budget)[xxxvi].

Location requirements

The best dumping locations are:

- Close to the dredged location (economical);
- At a location where the chance of flowing back is small (taking currents into account);
- At a place where this is ecologically responsible (no valuable species, not close to breeding grounds).

9.11 Sand and gravel extraction

Existing situation in the BNS

Application and parties

Sand and gravel is used for:

- Construction: sand and gravel are the basic ingredients for concrete;
- Coastal defence: sand replenishment can be used to counter erosion of the Belgian coast as a result of currents/waves and it protects the coast against flooding during very heavy storm tides;

There are currently several parties that extract sand in the BNS:

- Twelve private companies are represented by Zeegra vzw;
- The Government of Flanders, Department of Mobility and Public Works, Maritime Access Division (AMT);
- The Government of Flanders, Agency for Maritime Services and Coast (MDK), Coastal Division.

Extraction locations

Sand and gravel extraction is only possible in the BNS in a number of areas established by law, called control zones. The quality and diversity of the sand depends on the place of extraction, considering that each sandbank has a specific grain size distribution and different shell content. A specific concession is required to be able to extract sand and/or gravel.

There are 2 types of concessions:

- Normal concessions: only valid in the control zones and the maximum volume is limited to 100,000 m³/month;
- Concessions for special projects: the maximum volume exceeds 100,000 m³/month and the extraction is for a limited time. The location of these concessions is not limited to the control zones.

The duration of a concession is 10 years, and every year the Minister of Economy establishes the maximum extractable volume on the basis of the advice of the Advisory Committee on sand and gravel extraction.

In 2013, 12 private companies have a normal concession. The Coastal Division has two concessions for special projects, namely, one concession in function of the Masterplan for Coastal Safety (zone 4) and one concession in function of routine coastal defence (zones 1, 2 and 3). The Maritime Access Division has one concession for special projects (zone 3) for raising the port terrains in Zeebrugge and for managing the waterways and coastal safety.

The location and delimitation of the control zones changed in 2004. Prior to 2004, the potential zones were concentrated in the proximity of the 12 mile zone (sandbanks north and south of the 12 mile zone). However, nearly all extractions took place at a very small location at the centre of the Kwinte Bank (KBMA), which created a 5 metre deep depression. Since 2003, this location has therefore been closed for extraction. In 2010, an additional area at the northern part of the

Kwinte Bank (KBMB) was closed for extraction for the same reason. Since then it has been determined that the sandbank does not recover naturally, so that these two zones remain closed for extraction. An area is closed definitively when the area to extract is 5 metres beneath the reference level.

In 2004, a spacious zone at the Hinder banks was designated as a possible sand and gravel extraction zone (exploration zone), to compensate for the construction of a wind farm in control zone 1. Since 24 December 2010, sand and gravel can also actually be extracted in this zone (control zone 4). In 2004, rotation systems were also introduced with the purpose of giving the extraction areas time for natural recovery or for prohibiting extraction during the breeding season.

Today the concessions are concentrated in 4 control zones:

- Control zone 1 takes up the western part of the Thornton Bank (sector 1a) and a zone on the Goote Bank (Sector 1b). Due to the increase in shipping traffic in sector 1b and the change of the Westhinder mooring area, the sector was advised to no longer use this sector as of 1 December 2012. The THBREF area in sector 1a is has been closed for extraction since 1 October 2010, and serves as a reference area for biological monitoring.

- Control zone 2 takes up the area of the Oostdyck, BuitenRatel and Kwinte Bank. The sand in this zone is generally of very high quality. Two areas (KBMA and KBMB) on the Kwinte Bank were closed because two, 5 m- deep depressions with respect to the reference level were created[xxxvii].

- Control zone 3 is a small zone on the south-western extension of the Vlakte van de Raan. This extension is called Sierra Ventana. This zone is divided into a northern and southern part. The southern part (sector 3a) is open for extraction. The northern half (sector 3b) merges with the dredging dumping site S1 and is closed for extraction as long as dredging material is being dumped. For safety purposes, dumping and extraction cannot be combined. The purpose of control zone 3 is to reduce the pressure on natural sandbanks, but the quality of the sand is rather poor. It is only suitable for land extensions at sea, but not for the construction industry or beach replenishment.

- Control zone 4 is located further at sea and is concentrated around the Hinder banks. Control zone 4 consists of 4 sectors, one of which is at the Noordhinder, two at the Oosthinder and one at the Westhinder.

Location requirements

- The desired grain size differs according to the use of the sand. It is therefore very important that locations with different grain sizes are designated, going from fine sand to extremely rough sand.

- The distance to the coast plays a role (economic considerations concerning shipping distance).

Translation of this map:

- "Controle- en exploitatiezone" means "Control and exploration zone"
- "Voor zandwinning gesloten gebied" means "Zone closed for sand extraction"
- "Referentiegebied voor windmolenactiviteiten" means "Reference zone for windmill activities"

Intensities

The maximum extraction volume per concession is established annually. In 2005, the maximum volume allowed for the private sector was 2.55 million m³. In 2012, this maximum volume allowed had risen to 3.365 million m³. In 2005, the Government of Flanders still had no concession; in 2012, the Government of Flanders had a maximum allotted volume of 2.9 million m³, 2 million m³ of which was in function of the Masterplan Coastal Safety (MDK – Coastal Division).

Only a fraction of these maximum values are usually extracted. In 2005, 52% or 1.33 million m³ was extracted; in 2012, the private sector extracted 49% or 2.16 million m³. In 2012, the Government of Flanders extracted 0.92 million m³ (32%), 0.72 million m³ of which in function of the Masterplan Coastal Safety. In general, the maximum volumes are not exceeded, with one exception.

Party	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total for period 2005-2012 *(rounded)*
Private companies awarded	2.55	3.1	3.18	2.9	2.8	2.99	3.62	3.57	3.57	**25**
Private companies actually extracted (%)	1.33 (52%)	1.57 (51%)	1.54 (49%)	1.76 (61%)	1.67 (60%)	1.84 (52%)	2.09 (46%)	2.16 (49%)		**14 (56%)**
Agency for Maritime Services and Coast (MDK) allocated	/	/	1.65 for a period of 3 years (average 0.55 per year)			1.65 for a period of 3 years (average 0.55 per year)			0.55	**3.3**
MDK actually extracted	/	/	0.36	0.51	0.29	0.34	0.66	0.20		**2.4 (72%)**
MDK actually extracted (%)	/	/	1.15 (70%)			1.2 (73%)				
Maritime Access Division (AMT) allocated	/	1 for a period of 3 years (average 0.33 per year)			1 for a period of 3 years (average 0.33 per year)			0.35	0.35	**2.35**
AMT actually extracted	/	0	0	0	0	0	0.15	0		**0.15 (6%)**
AMT actually extracted (%)	/	0 (0%)			0.15 (15%)			0%		
MDK coastal safety allocated	/	/	/	/	/	/	2	2	2	**4**
MDK coastal safety actually extracted	/	/	/	/	/	/	0 (0%)	0.72 (36%)		**0.72 (18%)**
TOTAL allocated	**2.55**	**3.43**	**4.06**	**3.78**	**3.68**	**3.87**	**6.50**	**6.47**	**6.47**	**34**
TOTAL extracted	1.33	1.57	1.90	2.27	1.96	2.18	2.90	3.08		**17.2 (51%)**

Table: Allocated and extracted volumes sand and gravel for the period 2005-2013. The figures are in million m³ and rounded. For the extracted volumes in 2012, it concerns reporting up until 29/01/2013 *[Source: FPS Economy, 2012 (not published)].*

The private companies delivered a substantial amount of reclaimed sand as construction sand on the Belgian market[xxxviii].

Extraction of sand and gravel in the BNS began in 1976 with an annual production of 29,000 m³. Annual extraction gradually rose to an average of 500,000 m³ per year between 1981 and 1986. After this period, production began to rise rapidly until production of 1,660,000 m³ was achieved in 1995. Since then, production has vacillated between 1,400,000 m³ and 1,900,000 m³ of sand per year. As a result of the construction of new gas pipelines (Interconnector and Norfra), in 1997 nearly 4 million m³ was extracted. The peak in 1991 was also the result of laying underwater gas pipelines[xxxix]. Since 2007, sand has also been reclaimed for raising the beaches, so that there has been a slight increase in recent years. In 2008, 2010 and 2011, the 2,000,000 m³ limit was exceeded.

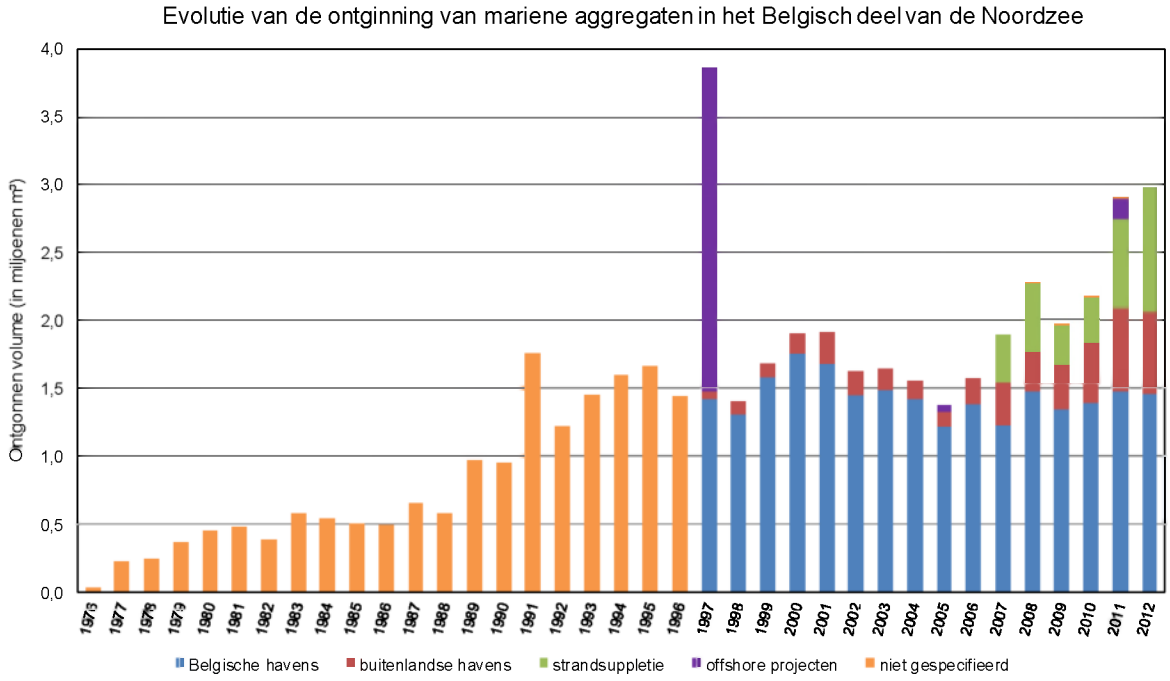


Figure: Aggregate extraction in the BNS (1976-2012) *[Source: FPS Economy, January 2013, (not published)]*

Sand extraction is not equally distributed in the concession zones, but is heavily concentrated in function of the desired sediment quality[xl]. Control zone 2 remains the most reclaimed area, with more than 70% of the total extraction volume in 2011, but the importance of the Thornton Bank continues to increase. At the time of writing, there is still not sufficient information available to make a statement about the importance of the Hinder banks.

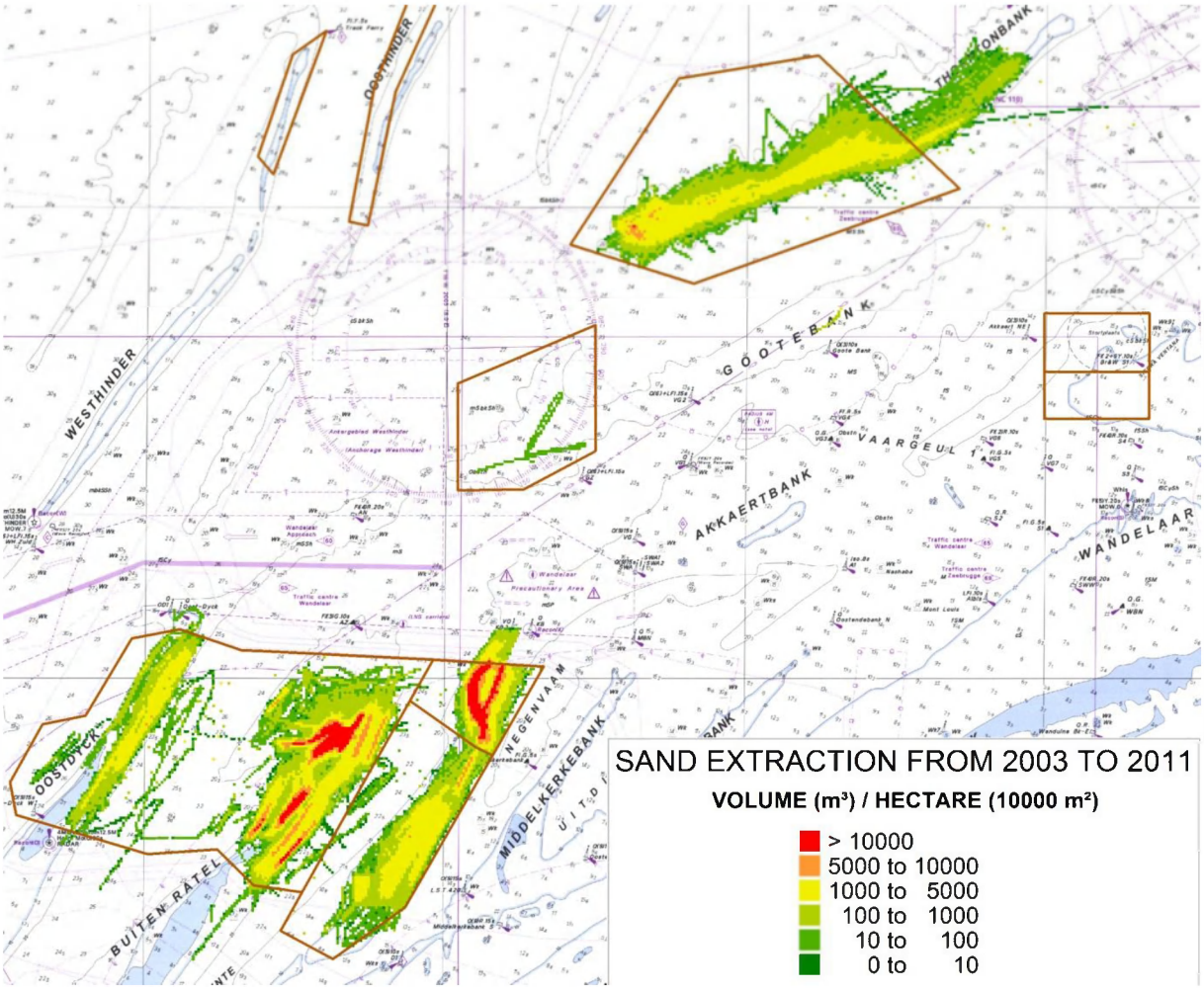


Figure: Extracted volumes in the period 2003-2011 *[Source: FPS Economy, January 2013 (not published)],*

Socio-economic aspects

Extraction of sand and gravel generates direct as well as indirect employment (transporters, ship crews, Customs, ship repair, construction sector...). For the period 1998-2002, there has been an increase in employment in this sector by nearly 20% (249 workers in 1998 to 295 in 2002)[xli].

During the same period, the companies in this sector also became larger. In 1998, namely half of the sand and gravel extraction companies could be categorized as a small company (< 5 employees), but in 2002 this percentage shrank to 36%. The majority of the sand and gravel extraction companies are situated in the SME category (between 5 and 50 employees); with more than 50 employees, one company falls under the category 'large enterprise'[xlii].

This is also reflected in the increased value (turnover increase), up to 265 million € in 2002 (19 sand and gravel extraction companies), and the increased added value, to 31.2 million € in 2002 (22 companies)[xliii].

8.12 Military activities

Current situation in the BNS

There are regularly military activities and exercises in the BNS. These concern, among others:

- Target practice from land to the sea. This only occurs in the daytime from the military base (beach) in Lombardsijde. The exercise zone (D07) is divided into three sectors (K-small, M-mid-sized and G-large[xliv]), depending on the weapons used. The ammunition fired, which ends up on the seabed, is not cleared away; the ammunition cartridges that fall onto the beach are. The shooting beach is available approximately 150 days annually for military activities. The use of K-sector is in effect 60 days, M-sector 30 days and G-sector 2 days. These numbers can change in function of the operational need of Belgian Defence.

- Target practice for moving targets at sea. These take place in the 'BNOM zone' at Hinder Banks and may occur during the daytime as well as at night. During the exercises, the ships are situated in the southern part of the pentagon and aim at targets in the north. The target practice is seldom conducted (5 practice days per year at maximum); Belgian frigates mainly exercise in Dutch waters.

- Detonation exercises with dummy mines. This occurs in the circular zone at the south-east side of the BNOM zone (zone Thornton Bank - Goote Bank). The dummy mines are always cleaned up after the exercises.

- Detonation of found mines. Very occasionally, a real war mine is found by ships, fishermen or dredgers. Such mines are also defused in the circular zone, unless it is an emergency situation.

- Exercises in laying, searching for and sweeping of mines. These exercises take place in two smaller zones, namely the NB-01 (between the Goote Bank and Westhinder, for deep-water exercises) and NBH-10 (between Wenduine and the Ostend Bank, for exercises in shallow waters). For certain manoeuvres or in certain weather conditions it is necessary to sail outside these zones. If necessary, the practice zones can also be expanded to the circular detonation zone and toward the Port of Ostend. Neither zone is used frequently.

- Amphibious, rescue and flight training.

- Extensive mine exercises by various NATO Member States. No zone is established for these exercises. NATO does announce the location of the exercises ahead of time. The NBH-10 zone is one of the potential practice zones. Such large-scale exercises are held twice per year in the BNS.

- There are active searches for historical ammunition (UXOs) on the beaches, as they can present a risk for the user or for works to be conducted. Detection takes place on the dry beach as well as the intertidal beach and can be conducted beyond the baseline. The ordnance found is dug up and possibly exploded on a demarcated part of the beach in consultation with DOVO (mine clearance agency). When choosing this explosion zone, the requisite safety precautions are assumed and the surrounding nature and heritage values are taken into consideration.

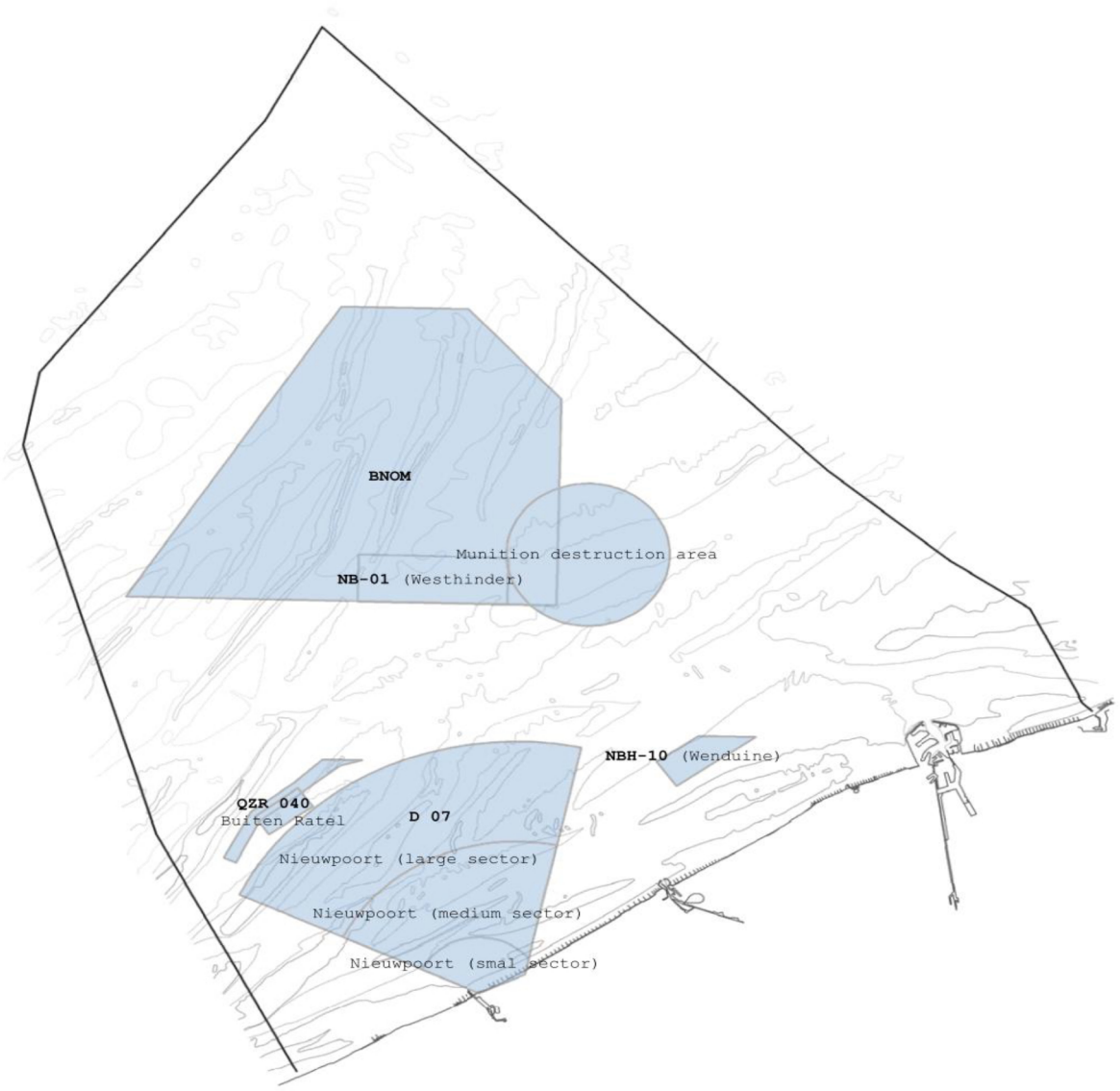
The coordinates of the practice zones can be adjusted annually, but they do not differ greatly.

All other activities are excluded from the practice zone during the exercises. The exercises and the coordinates of the practice areas are therefore announced in the 'Notices to Mariners'.

Military exercises are only conducted in good weather conditions and if the sea currents are not too strong.

In addition to the various training activities, Defence also participates in the SAR (Search and Rescue) organization, under the direction of the MRCC (Marine Rescue Coordination Centre), with flying and sailing means.

Furthermore, in collaboration with other national governments, defence resources can be used for safety purposes, keeping in mind the existing agreements and cooperation agreements.



Translation of this map:

- "Oefengebieden defensie" means "Exercise zones defense"

9.13 Tourism and recreation

Existing situation in the BNS

Tourism at the coast is by far the most important economic activity in the coastal region, and has therefore grown to become a tourist-recreational network. The sea is very important in this regard, not only as something to experience (view, scents, wind), but also as a unique environment for recreational activities.

The gently sloping transition from shallow to deep, the soft sandy bottom with broad, always accessible beaches with primarily fine sand and sufficient, but not excessively large waves offer excellent opportunities for playing, swimming and dynamic water sports. Furthermore, the coast has many attractive beachheads and palisades and the tourist-recreational infrastructure (hotel and catering industry, commerce, availability) is strongly developed.

Activities at sea[xlv]

Swimming and playing in the sea are still popular activities for a large portion of coastal tourists.

The coast also guarantees constant and usually suitable wind, which not only makes water and wind-related sports possible, but also more attractive than on bodies of water in the interior. For instance, kite surfing has become very popular in recent years. A series of severe accidents, however, resulted in a number of measures such as the delimitation of clear kite zones and a limit of six-Beaufort wind speeds to be able to enter the sea.

Numerous other sportive activities are also participated in at the sea. Some examples of non-motorized forms of sea-related recreation are windsurfing, beach sailing, sailing, recreational diving... Some examples of motorized forms of sea-related recreation are: motorboat cruises with yachts, boating excursions, boat races, sea fishing, water skiing...

The scope of recreational fishing is not known. The fishery and recreational fishing boats sail to a maximum of 5-6 miles off the coast in winter; they sail further out at sea in the summer. Sports fishermen mainly fish where most professional fishermen cannot, such as above and nearby shipwrecks. Recreational fishing is localized around the clusters of larger wrecks which lie spread out across the BNS.

Shipwrecks are also visited by innumerable wreck divers (interested in marine biology and/or maritime history) who sail from the ports of Nieuwpoort and Zeebrugge with specialized wreck-diving charters.

In 2009, the Belgian coast had 26 water sports clubs, 19 of which on the beach with an extensive offering of water and beach activities such as windsurfing, kite surfing, para-sailing, catamarans and sailing[xlvi].

Activities on the beach/seawall [64]

Water sport activities at sea often require an infrastructural framework on the beach, the seawall or, in marinas, for storage space or a clubhouse. They also require specific services: for instance, lifesaving services, uni-sport clubs (such as sailing clubs) or multi-water sport clubs, tractors to pull the boats into the sea, skippers for rented boats, and the like.

Sporting and recreational activities on the beach are usually very intensive in the high season, particularly on beaches fronting connecting apartment buildings and close to concentrations of rental accommodations. Some beach sports (walking and jogging, horse riding, beach fishing, recreational entanglement nets in the intertidal zone and fishery from the palisades/embankments/levees, speed sailing, land sailing, motorized paragliding) cannot only be done in the high season, but also in the winter and between-season periods. Other activities, such as sunbathing, sitting at terraces at the beach, playing and sports, beach kiteboarding, frisbee/boomerang, commercial beach games and other forms of beach activities (aerobics ...) or attractions are mainly popular in the summer.

The dike with its promenade is the most important public space in the coastal cities and is a unique attraction for the Flemish seaside resorts. Only Bredene is without a dike, which also contributes to the very specific nature of this seaside town.

Activities in the dunes

The seaside dunes are very interesting for recreational purposes across the entire Flemish coast as an alternative area for

beachgoers. In particular the locations in the immediate proximity of the centre of the seaside resorts and of concentrations of vacation accommodations have intensive recreational use. They are also under the greatest recreational pressure.

Marinas[xlvii]

In 2009, the Belgian coast had 12 marinas, the most important being Nieuwpoort, Ostend, Blankenberge and Zeebrugge. Together these 4 marinas are good for approximately 3,350 berths. With nearly 2,000 berths, the Nieuwpoort Marina is the largest Belgian recreational port and one of the largest in Northwest Europe. There are plans to expand this port even further, including its rezoning to a residential area.

Spatial distribution and typology

Tourist pressure is therefore very high. More than 30 million stays are booked annually by[xlviii] more than 5 million tourists. Added to this are those with holiday homes, and approximately 20 million day tourists per year, 75% of which in the period between April and September.

Knokke-Heist, Ostend and Blankenberge are the busiest coastal locations. Tourist pressure is lower in Bredene and Zeebrugge.

A large part of the west coast has very broad beaches without beachheads (breakwaters). This makes the zone very suitable for beach sailing. Beach and shrimp fishing are also typical for the West coast. The largest sailing port and marina on the coast is in Nieuwpoort. Furthermore, with more than 1,800 berths, Nieuwpoort is among the largest marinas in Europe. Nieuwpoort also has a small fishing port and a fish market.

Ostend is a resort that attracts many tourists and recreational water users due to its easy connection with the hinterland (road, rail). There are several marinas in Ostend. Furthermore, Ostend also has an important fishing port and is the only coastal port with a fisherman's market where fishermen can sell fish directly to the consumer.

The coast in the region of Bredene, De Haan to Blankenberge is characterized by several less busy places and one very busy beach resort (Blankenberge). Blankenberge also has marina.

Zeebrugge is a combination of a small beach resort and a large seaport. The beach is rather small, but there is also a small marina. Zeebrugge also has important fishing port and fish market, but in contrast to Ostend there are no fish sold directly to tourists here.

Knokke-Heist also attracts many tourists. This location is characterized by many surfers, on the beach (parasailing and speed-sailing) as well as on the water.

Socio-economic significance[xlix]

2009 brought 5 million overnight tourists to the coast, which altogether were good for more than 30 million overnight stays. Thus, tourists stayed on average more than 6 nights. In 2009, the number of day tourists was 18.6 million.

In 2007, overnight tourists spent more than € 2.7 billion at the Belgian coast; in 2009 this had decreased to € 2.5 billion. In 2009, immediate turnover from one-day tourists amounted to € 630 million, approximately 60% of which was spent on the catering industry (restaurant, terrace, tea room, café, snacks) and approximately a quarter on general shopping. This decrease was also felt in the turnover figures of the catering businesses and retail trade: turnover within the catering business decreased from € 16 billion in 2004 to € 1 billion in 2008 (-18%); in retail trade, from € 640 million in 2004 to € 591 million in 2008 (-7%).

The number of business in the catering industry and the number of retail stores also decreased respectively by 4.3 % and 3% in the period from 2004-2008.

The turnover of the 4 largest marinas at the Belgian coast is estimated at approximately € 1.9 million, with a total added value of approximately € 27.3 million.

Location requirements

The contemporary tourist is looking for a series of experiences ranging from cultural to natural attractions, gastronomy, sports ... within intact and special natural surroundings[l]. From a survey conducted in Germany in 2002, the following environmental factors appear to be important when choosing the following vacation destinations[li]:

- Clean beaches and clean water (64.5%)

- No refuse in the vacation destination or in the surroundings (59.1%)
- No noise (51%)
- No urbanization of rural areas (50%)
- Satisfactory protection of nature at the vacation destination (45.8%)
- Environmentally-friendly accommodations (41.8%)
- Minimal traffic and good public transport at the destination (35.1%)
- The vacation destination is easily accessible by bus or train (29%)

Chapter 10 "Existing spatial alliances and conflicts" is not included in this document for the cross-border consultation because this is very comparable among the different countries.

11. Planning and policy context

For Chapter 11 “Planning and policy context", the sections that are relevant for cross-border cooperation are translated with regard to the maritime spatial planning.

From this point we address the planning and policy context which the Maritime Spatial Planning must take into consideration.

11.1 Previous Masterplan

The former Masterplan was launched by the North Sea Cabinet in 2003. With this, Belgium was one of the first countries in Europe to take an initiative for a spatial plan for the North Sea and started with its implementation.

The North Sea Masterplan brought clarity about the various legal preconditions for activities regulated at the federal level. A second objective was also to delineate a legal zone for the generation of electricity from renewable sources, including wind energy (Royal Decree 17/05/04, amended by Royal Decree 03/01/11). The delimitation of zones for sand extraction and the Habitat and Bird Directive areas were also included in the Masterplan.

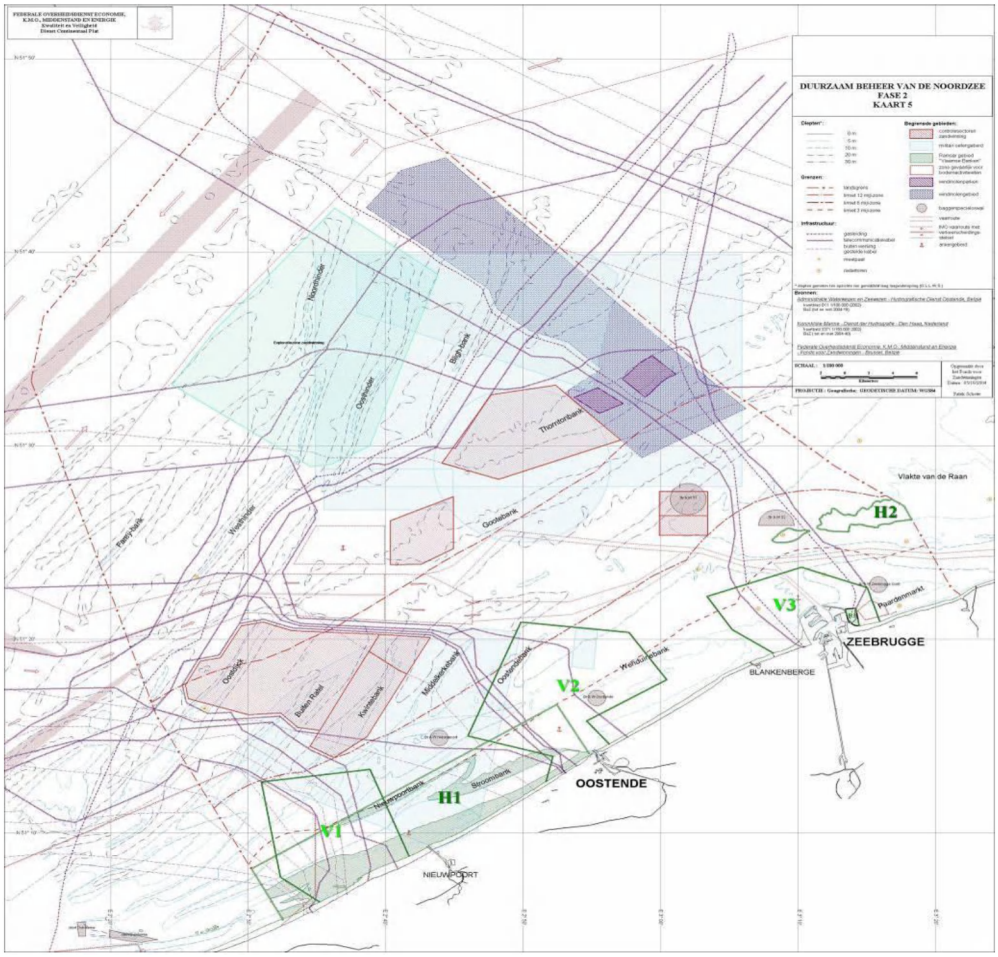


Figure: Masterplan for the North Sea, 2004

11.2 Treaties, legislation, plans and projects

The subchapters with respect to the international and European rules having an impact on the marine spatial planning have not been translated, since the description of these rules already exist in English.

3. Federal and Flemish legislation and policy plans

Policy plans

The policy plans and legislation mentioned in what follows should be considered as a non-exhaustive summary.

These are mentioned in order to create a general framework for the planning and policy context which the maritime spatial planning must take into consideration, seeing as they concern the use of space.

Belgian Action plan for renewable energy (2010)

The federal target is at least 2000 MW of installed capacity of wind energy at sea by 2020.

At the end of 2010, the percentage of renewable energy sources in the electricity use in Flanders was approximately 3.5% (aps.vlaanderen.be, 2011).

The national target for 2020 for the percentage of energy from renewable sources (alongside heating and cooling and transport) is 20.9 %, which corresponds to electricity production of 23 TWh on the basis of the consumption predictions for Belgium for 2020.

The table below shows the trajectory until 2020 - expressed in MW and GWh - of the contribution of each means of production for electricity, as provided in the Belgian action plan for renewable energy (the energy can be produced onshore as well as offshore).

	2010		2015		2020	
	MW	GWh	MW	GWh	MW	GWh
Waterkracht	112,3	362,2	122,5	390,7	140,0	440,0
Geothermische energie	0,0	0,0	0,0	0,0	3,5	29,1
Zonne-energie	350,0	304,0	713,1	610,2	1 340,0	1 139,0
Windenergie	733,2	990,5	2 048,6	6 084,1	4 320,0	10 474,0
Biomassa	617,6	3 006,9	1 290,2	5 952,4	2 451,5	11 038,5
Totaal	**1 813,2**	**4 663,6**	**4 174,3**	**13 037,4**	**8 255,0**	**23 120,6**

Table: anticipated contributions of renewable energy until 2020 for the share of electricity *[Source: CONCERE-ENOVER, 2010]* // ***"Waterkracht" means "Water power"; "Geothermische energie" means "Geothermal energy";***

"Zonne-energie" means "Solar energy"; "Windenergie" means "Windenergy";"Biomassa" means "Biomass"; "Totaal" means "Total"

National Strategy and Operational Programme 2007-2013

These policy plans were drawn up in the framework of the European Community Fishing Policy.

Belgium opts for a sustainable transformation of the fishery sector by means of differentiation and innovation. The table gives an overview of the targets of the Belgian Operational Plan in 2015.

Indicator	2009	2015	Difference
Capacity in GT	16,048	15,000	-6.5 %
Capacity in kW	51,590	47,000	-8.9%
Number of sea days with a trawler for the entire fleet	10,601[iii]	11,020	+3.9 %
Number of sea days with vessels other than trawlers	7,021	9,072	+29.2%
Employment		+80	+80

Table: Objectives of the National Operational Plan *[Source: European Fisheries Fund, page 76 and Government of Flanders, Government of Flanders, Agriculture and Fisheries Department, Agriculture and Fisheries Policy Section, seafishing, 2009, page 60, in: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp,, 52].*
[iii]

Furthermore, two marine aquaculture companies can be set up in the BNS which annually produce 1,500 tonnes, and could create 20 jobs.

Masterplan Coastal Safety / Integrated Coastal Safety Plan (10/06/11) / OW-plan Ostend and Zwin project[iv]

In 2007 the Coastal Division (Government of Flanders – Agency for Maritime Services and Coast) commenced a study in order to investigate how the Belgian coast can be brought up to the minimum safety requirements against a very heavy storm (1,000 year storm). This level should guarantee coastal safety until at least 2050.

The study resulted in a Masterplan Coastal Safety. The intention of the Masterplan is to protect the coast as a natural and attractive area. In addition, the execution of the Masterplan is also necessary from a social and economic perspective.

From the study it appeared that a third of our coast is insufficiently protected against so-called 'super storms' or '1,000 year storms'. The economic damage in such an event can rise to a few billion and there could be thousands of victims. Middelkerke, Ostend from Raversijde to the centre, Wenduine centre and the 4 coastal ports are vulnerable areas. Municipalities and seaside resorts such

as De Panne, Sint Idesbald, Koksijde, Westende, Blankenberge, Duinbergen and Knokke-Zoute also deserve extra attention.
A package of measures was worked out for all vulnerable zones. Environmental effects, social cost benefits and the reduction of the risk of flood are studied in detail for each measure.

In the bathing zones, it will be necessary to raise the beaches and locally reinforce the seawalls. In the ports, the construction of storm walls around the port channels, raising the quay terrains or in Nieuwpoort even the construction of a storm surge barrier are being considered.

The approach of the Masterplan Coastal Safety rests on the principles of integrated coastal zone management. Thus, the pursuit is not only for a safe coast, but also to make efforts to repair and where possible reinforce the natural character of the coast. This is why the solutions are mainly aimed at soft coastal defence (beach replenishment).

A budget of more than 300 million euro is needed for conducting the works. Requests for building permits and the works themselves are provided for between 2011 and 2015.

In the framework of the Masterplan Coastal Safety, the Government of Flanders will reclaim 20 million m³ of sand in the Belgian sea areas between 2011 and 2020. This is in function of beach replenishment and other soft coastal defence. Provisional estimates indicate that for the period from 2010-2015, approximately 14 million m³ will be required (taking dredging losses into account.)[lv].

After implementation of the protective measures in the risk zones, the beaches will remain subject to erosion. Maintenance is needed for this. The amounts needed annually are estimated at an average of 444,000 m³ sand. For constructing new beaches, a 2,220,000 m³ sand buffer will be provided. This sand buffer allows for the maintenance needs to be met during the first five years after construction. The maintenance cost of the new beaches (= maintaining safety level after construction) is 8 million euro per year.

4. Relevant projects and studies

The projects mentioned below, with a variable level of development, are non-binding for the adoption of the marine spatial plan. They are still mentioned, given that this often forms an important source of information for spatial analysis of the Belgian sea areas and can also have an impact on future use of space. They should therefore be considered as non-exhaustive analyses of projects which can influence the use of space.

The projects and studies that have been mentioned below form a selection of all projects and studies that have been introduced in the marine spatial plan. Criterion for this selection has been the apparent relevance of the project or study for the United Kingdom.

Elia projects: Nemo, Belgian Offshore Grid (BOG), Stevin Project[lvi]

Stevin project

Elia wishes to further expand the electricity network in the coastal region. To this end, among others the requisite facilities will be provided for easily transmitting electricity generated from wind farms at sea to the large user centres (Flemish Coalition Agreement, July 2009). In the framework of the Stevin project, the 380 kV network (above ground) will be extended from Zomergem to Zeebrugge. There, a new 380 kV high-voltage substation will be constructed in close proximity to the port zone. For the route of the newly existing various alternative, the definitive route will be decided by the Government of Flanders and included in a GRUP. Various locations are also being investigated for the potential location of the Stevin high-voltage substation in Zeebrugge. The realization of the Stevin Project is of great importance for the further expansion of offshore and onshore wind energy.

On 13 July 2012, the Government of Flanders definitively established the regional spatial plan of execution for the optimization of the high-voltage network in Flanders. Sub-plan A: High-voltage wire Zomergem-Zeebrugge (Stevin project)

The immediate reasons for moving forward with the project are:
- the connection of the decentralized production in the province of West Flanders and around the port of Zeebrugge;
- developments in the port of Zeebrugge;
- the potential future underwater electrical connections with other countries;
- future offshore wind farms[lvii].

Belgian Offshore Grid (BOG)

Since the beginning of 2012, the competence of Elia as manager of the transmission network has been extended out to sea. From this expanded competence, Elia has currently proposed a few strategic development plans so that the so-called offshore transformer stations are equipped as connection points for the respective wind farms. This is an alternative whereby all promoters of wind farms themselves must commit to the connection of their parks to the landing points (Slijkens and Zeebrugge). The intention is to gradually build up a truly meshed network at sea, into such a scenario where the various farms are connected with one another at sea, in high-voltage stations or platforms which lie close to the different concessions. This means that the number of landings can remain limited. This network at sea will be integrated into the network that Elia manages on land. The working method led to the successive construction of two platforms in the North Sea, Alpha and Beta, which will be mutually connected and where each will connect to the Stevin station which will be constructed near the port area of Zeebrugge by 220 kV connections. The exact timing for the realization and licence application for these constructions is not yet known.

This meshed offshore network will be gradually constructed in parallel with the installation of the farms of the 7 allocated concessions. It will also form an outpost for a connection with a future international AC/DC platform. One possible location for such a platform is a few kilometres more to the Northwest. This platform will then be connected to the local offshore networks with alternating current cables (with high capacity). Such a structure can also provide access to other energy sources, such as hydropower energy in Scandinavia, which can be made available when there is no wind at the North Sea or with which wind energy can be stored if there would be an excess of energy due to local demand. This long-term vision has 2025 as the temporal horizon for realization.

Within the Belgian Offshore Grid (BOG) Project, three phases are distinguished:

- The realization of two offshore high-voltage stations and AC cables near the coast. This project phase provides for the connection of planned wind farms with the land.

- The realization of an offshore DC high-voltage station and a number of AC connections.

- The connection of BOG with the European DC network.

The first phase is currently being researched and has the following characteristics:
- 2 high-voltage junctions. These are located in close to wind farms being constructed.

    - The Beta high-voltage junction will be realized on a platform within the Norther windturbine concession. The exact location of the platform has not yet been established.

- The Alfa high-voltage junction is located more to the north than Beta. This can be implemented as (solutions below do not exclude one another):
  - a platform inside the Northwind windturbine concession. The exact location of the platform has not yet been established.
  - A high-voltage station on an Island on the Bligh sandbank. The exact location of the platform has not yet been established.
  - A high-voltage station on an Island on the Lodewijk sandbank. The exact location of the platform has not yet been established.

The number of high-voltage junctions can vary by type, number and geographic location among the options listed above. By the end of 2013 it will be clear where the platform/or Island Alfa will come.

There are still uncertainties with concern to the surface of this Island/platform. The surface required for Elia is approximately 4,000 m²:
- space for transformer and switching post (40m x 60m = 2,400 m²);
- helideck: 910 m²;
- landing platform: 400 m²;
- emergency residences: 100m².

In addition, the following functions are suggested/requested. With this, depending on the additional functionalities, the total surface of Alfa can increase to approx. 10,000 m²:
- space for reception pavilion;
- space for sea mammals;
- hydro and meteo measurement station;
- signal beacons for shipping;
- service harbour/mooring quay for tugboats.

In addition, there is also the necessary surface required for infrastructure such as a ring road, dam/storm wall, drainage ... About the shape of Alfa and the space used under the surface of the water there is still nothing known. The dimensions of the footprint depend on the design of the Island; this process must still be started.

- 220kV AC connection between the high-voltage junctions;

- 220kV AC connection to the mainland. According to the current vision, 4 to 6 underwater cables will be required.

The second and third phases have not yet been researched and will only be realized in the middle and long term.

The precise location of the cables as well as the high-voltage stations is not yet known. The map indicates the cable route as it is currently being researched, as well as the search zones for the high-voltage junctions.

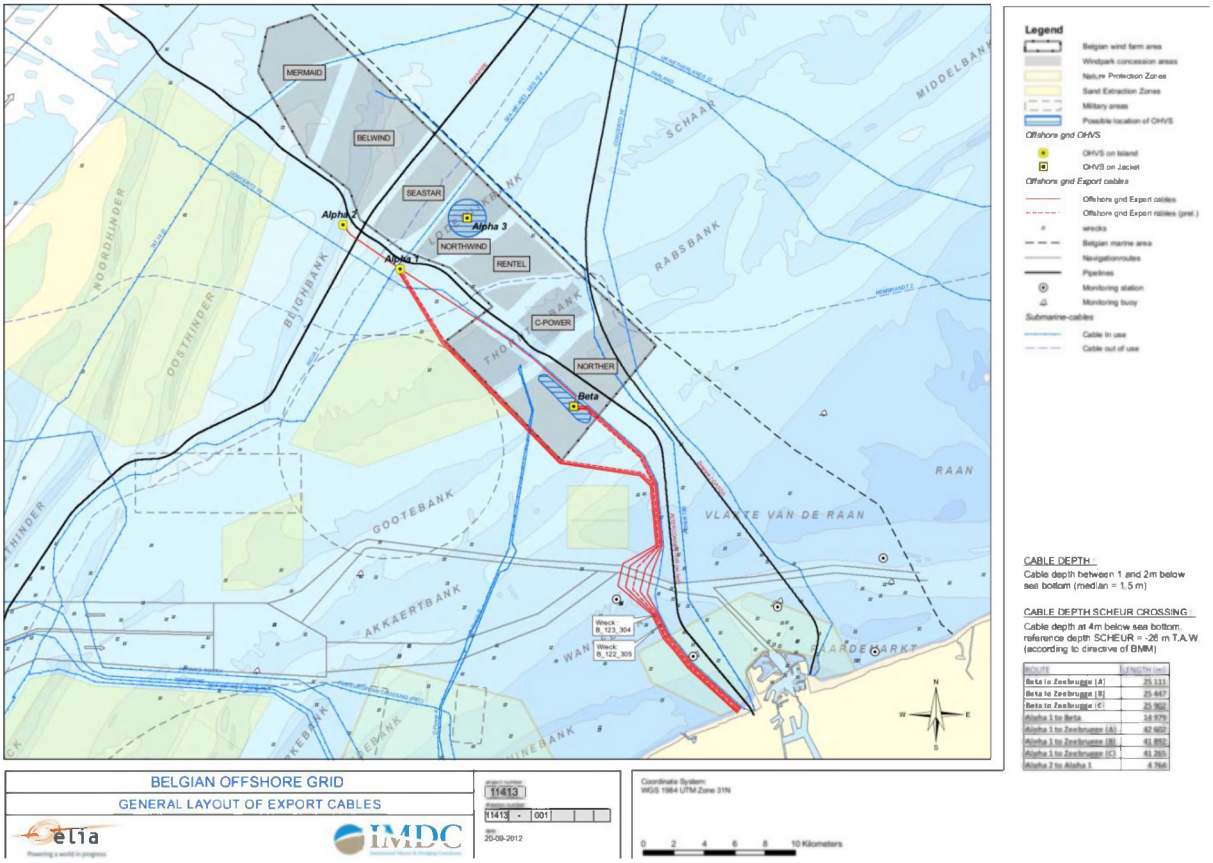


Figure: Belgian Offshore Grid, Elia (2012)

The first phase of the BOG is currently in an early investigative stage. The investigative stage, including obtaining all the required licences, is anticipated to be complete at the end of 2014. For the specific planning, the first phase will be completed in 2018.

The second and third phases, which would consist of the realization of an offshore DC high-voltage station, a number of AC connections and the connection of the BOG with the European DC network, would only begin after 2018.

For all phases of the BOG project, as well as for the realization of most windfarms, it holds that these can only be implemented if the Stevin connection is realized.

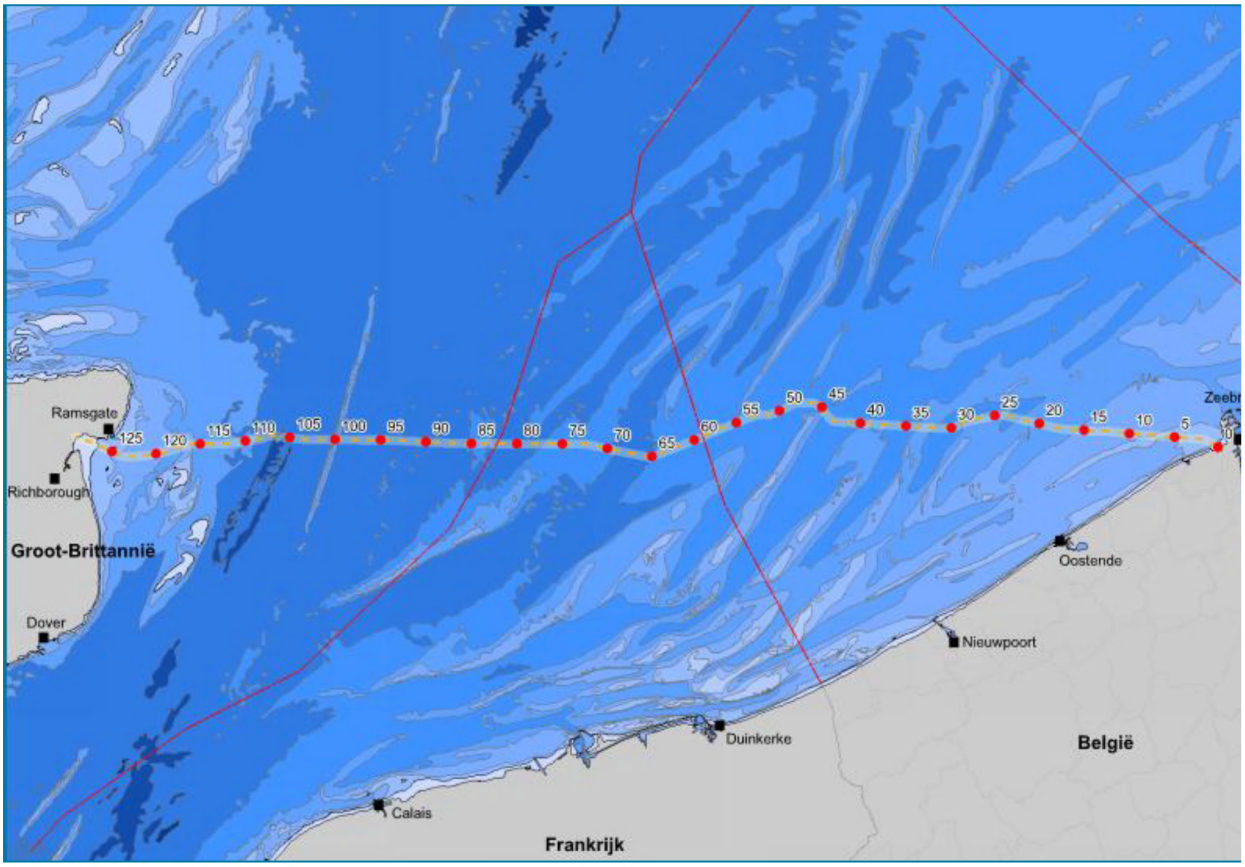
Nemo

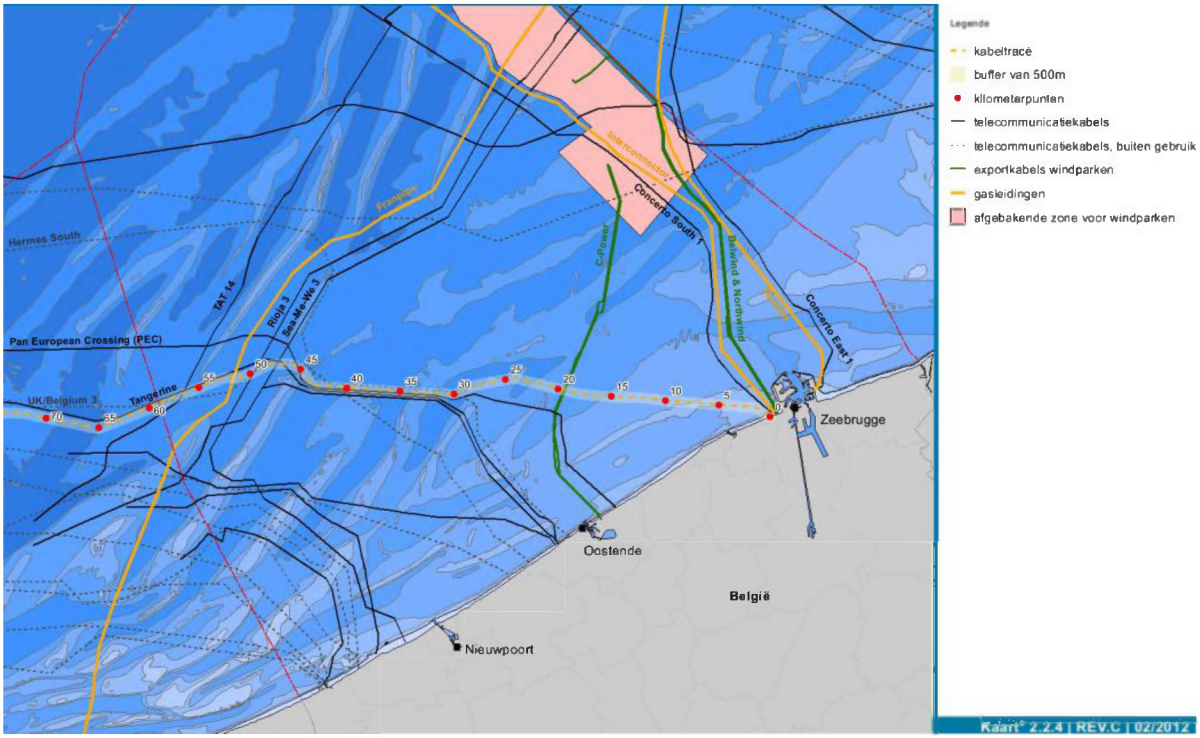
The objective of the Nemo Project by National Grid International Limited and Elia Asset NV is to connect the transmission networks of Great Britain and Belgium with one another by means of an interconnector with a capacity of approximately 1,000 MW. Electricity will be able to flow in both directions at different times. The direction of transmission depends on supply and demand in each country. This system offers a quick reaction to changes in

electricity production and use, so that the power flows can be adjusted in a short time.

Given the long length of the total cable route (approx. 130 km), HVDC (High Voltage Direct Current) technology will be used. This technology minimizes losses of electricity. By means of a convertor and a high-voltage station, the interconnector will be coupled to the British transmission network at Richborough (Kent) on the one side, and to the Belgian transmission system at Zeebrugge on the other.

The figure below shows the location of the HVDC Interconnector between Great Britain and Belgium. The cable runs from Richborough (Great Britain) to Zeebrugge. This means that it also crosses the French part of the North Sea.





Figures: Research into Nemo cable,[*Source: Elia, 2012]*

The cable route in the first instance is established with regard to a feasibility study, whereby the route between Richborough (Kent) and Zeebrugge West has been identified as the most suitable route between Great Britain and Belgium, mainly because of the availability of land (for the construction of a new converter station, among others), the length of the cable route and approval and licensing aspects. Then a 'route engineering' study was conducted to determine the most suitable cable route between Richborough and Zeebrugge. The 'route engineering' study consisted of a desktop study, whereby already existing data and knowledge of the proposed cable route was studied and analysed, and a marine survey, wherein certain aspects were verified on location (primarily geophysical, geotechnical and to a limited extent benthic characteristics). Where necessary, an adjustment to the route was implemented to mitigate the possible effects or risks, with the purpose being to reduce cable and well as installation costs as well as disruption to the marine ecosystem and its users to a minimum. On the occasion of the presentation of the results from the SEA, changes can possibly made to the route, as well as a result of the advice given in the cable licensing procedure.

The overall timing is:

- study phase (2006 → 2014): this includes all the required research, including obtaining all the required licences;
- construction (2014 → 2017): laying the cables and construction of stations on land;
- exploitation (2017 → 2036): after the exploitation period, which is set at 20 years, has concluded, an extension of the licences can be requested.

The offshore licence applications are being prepared and are expected to be submitted at the end of January 2013.

For the Nemo project, this only can only be conducted if the Stevin connection (Zomergem-Zeebrugge) has been realized.

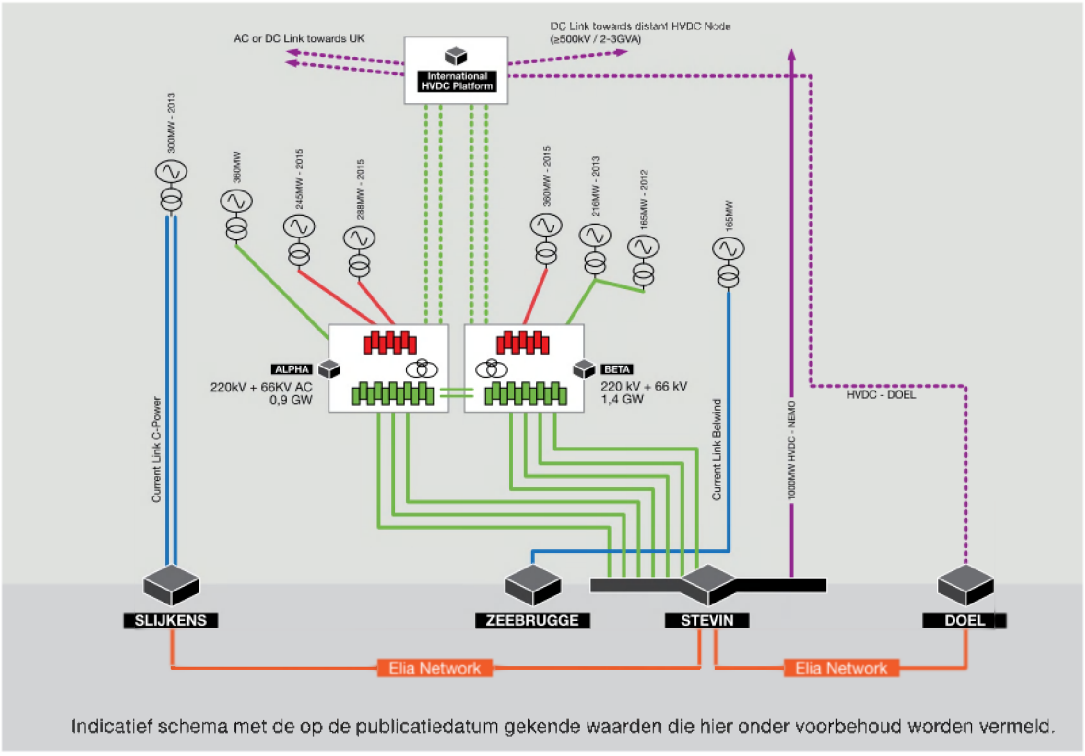


Figure: Indicative scheme with the electricity values, known on the date of publication *[Source : Leaflet Elia, Hoogspanningsnet in de Noordzee. Een toekomstvisie].*

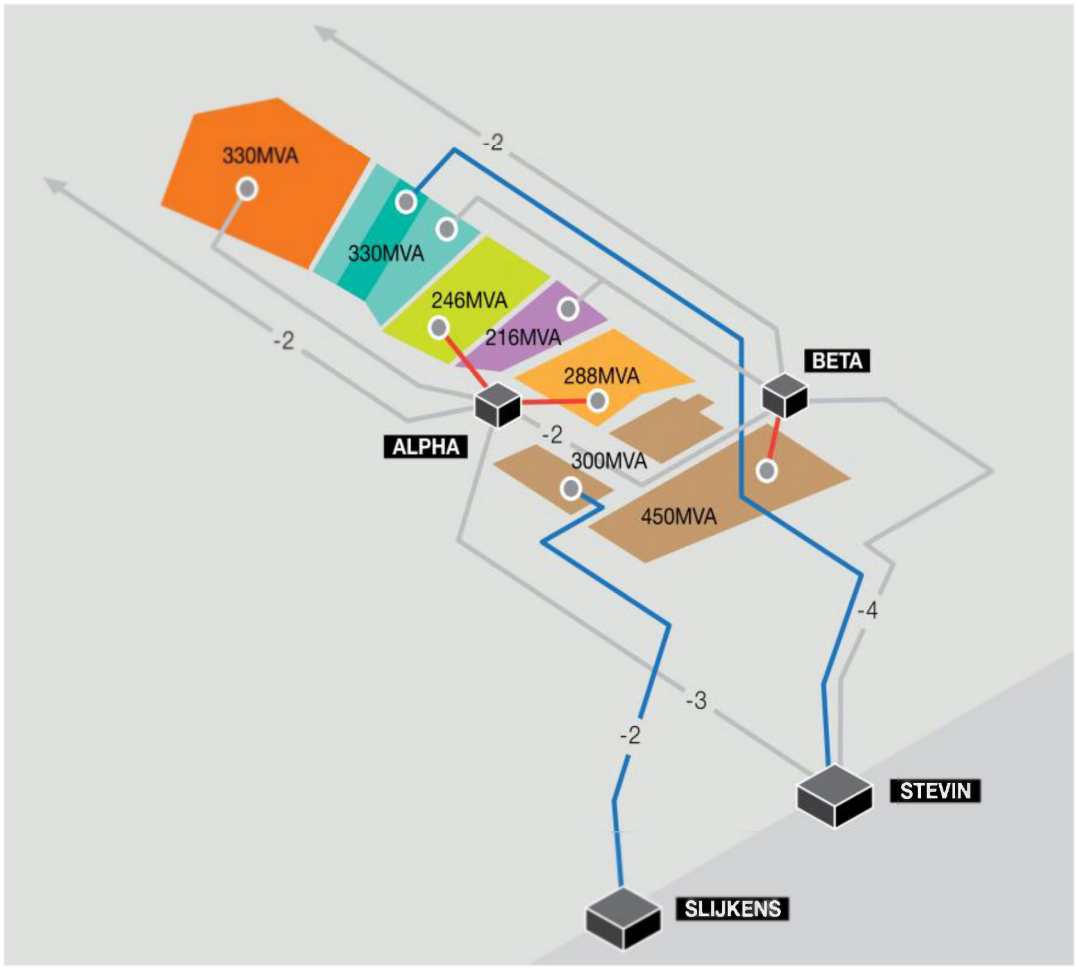


Figure: Indicative scheme with the electricity values for the wind farms *[Source : Leaflet Elia, Hoogspanningsnet in de Noordzee. Een toekomstvisie].*

Offshore pipeline projects

Additional offshore pipelines between Norway and Belgium are currently being investigated. Routes still being investigated:

- An additional route between Norway and the port of Zeebrugge. One possible route has a landing at the eastern side of the port of Zeebrugge, another at the western side. This doubling is being studied by Statoil/Gassco. Both routes mainly run parallel with the already-laid offshore lines (see figures). The project is currently on ice.

- A doubling of the Interconnector line is also being investigated. This second Interconnector line would be provided to the west and 500 metres from the existing Interconnector line.

- In addition, a doubling of the Franpipe (previously Norfra) has not been excluded in future.

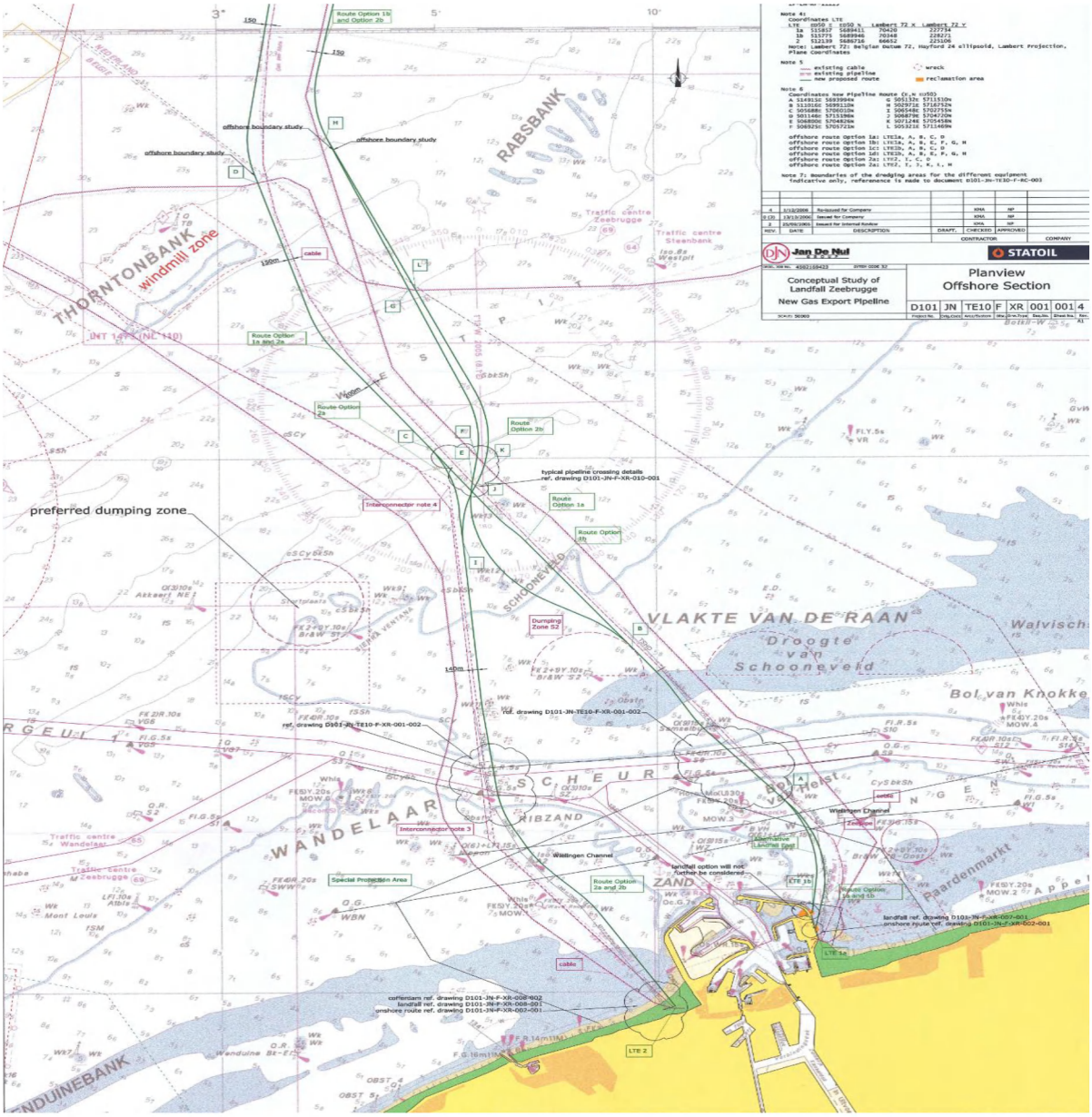


Figure: Possible routes for new pipeline between Norway and Zeebrugge (the routes are marked green on the map)
[Source: Fluxys]

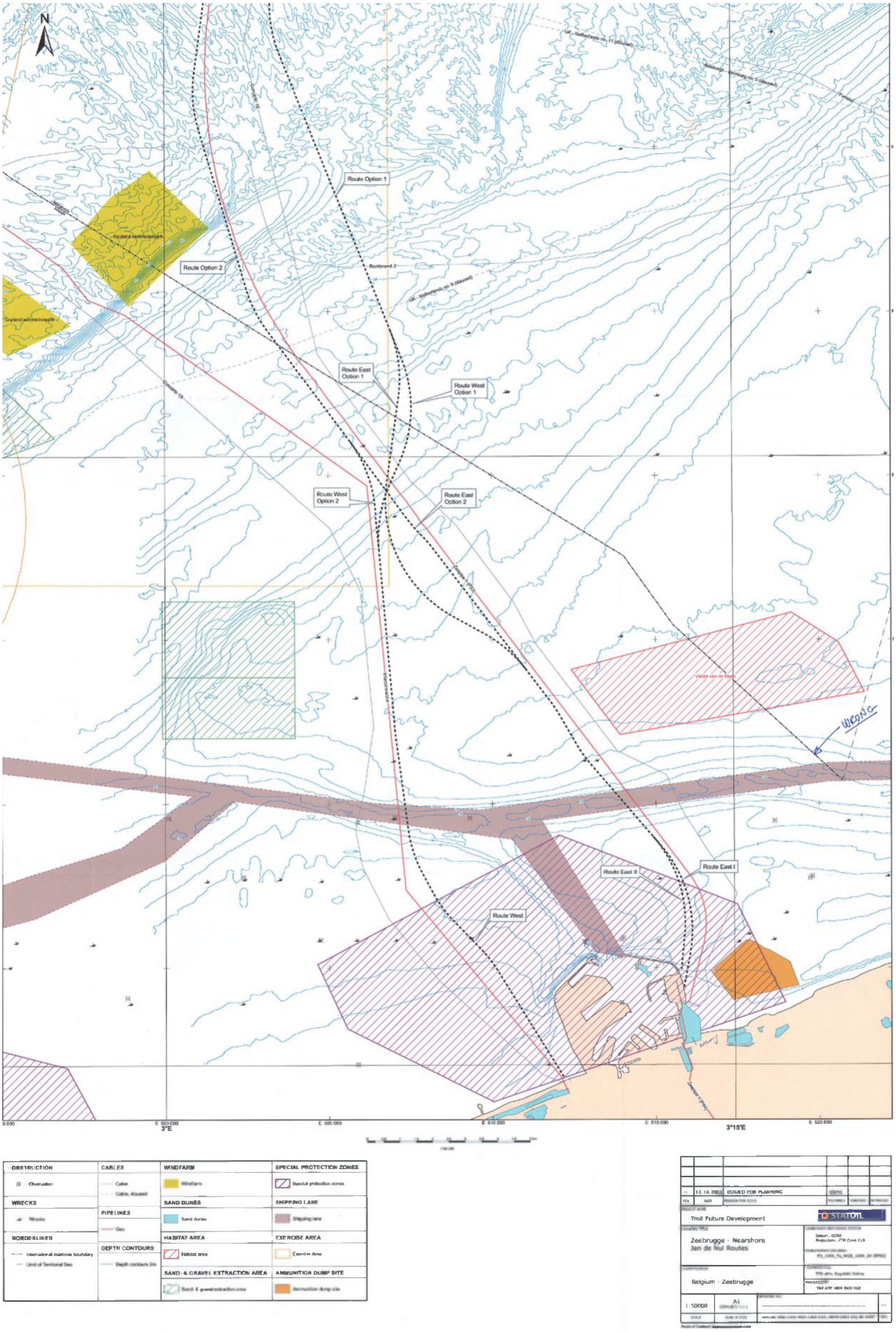


Figure: research new pipeline between Norway and Zeebrugge: possible routes (the possible routes are marked with a dotted line) *[Source: Fluxys].*

Future vision of 'Flanders Bays'[lviii]

Flanders Bays is a spatial vision experiment with a horizon of 2050. Various infrastructural projects have a place in it. It starts from the need for coastal safety and maps out various opportunities. This aims to unite safety (protection against rising sea level) with sustainability, attractiveness, naturalness and economic development. This vision assumes a natural and flexible defence.

Various side projects (including, among others, the construction of islands, development of the port of Zeebrugge, sustainable energy development and storage) are worked out more specifically and serve as inspiration. In doing so, the feasibility of the various side projects within the Flanders Bays is studied.

Based on coastal safety (Masterplan Coastal Safety) a vision is outlined with respect to spatial needs that may emerge within a timeframe of 90 years (horizon 2100). This long term vision will be drafted by 2014 in the Masterplan Flanders Bays. The feasibility of the parts is currently under examination. The Masterplan Flemish Bays currently addresses four spearheads: sustainable coast, development of ports, development at sea and ecosystem services.

Some other running studies and/or projects have not been translated, since they don't seem to have a transboundary pertinence.

The chapter 12, "Maritime Spatial Planning in the neighbouring countries" is not translated in this document for the cross-border consultation because this information is available through many other channels.

The chapter 13, "Trends, threats, opportunities" is also not translated because this will be integrated into the subsequent steps of the marine spatial plan.

Long term vision, objectives indicators and spatial policy choices

1. Introduction

Taking the analysis of the current situation into account, in this section we develop a global vision and determine the general and specific spatial principles. To this end, we are looking in particular for multiple uses of space. This is possible by taking into consideration overlapping activities in 4 dimensions, such as the possibility to fish, extract sand, navigate and organize firing exercises in function of defence, all in the same zone (not always at the same time). The fourth dimension is the time frame. This section in addition includes the specific objectives and indicators and the spatial policy choices, including the integrated map of this marine spatial plan. Revisiting the binding stipulations in the Royal Decree, activities for implementing the marine spatial plan are included in Annex 3 and are binding for the Federal Government.

Chapter 2 “Core objectives and overall vision” is not translated in this document for cross-border consultation, as it is based on the vision developed within the maritime policy of the United Kingdom.

Chapter 3 "Spatial principles" is not translated in this document for cross-border consultation, as it is very factual in nature and does not contain any policy decisions.

4. Spatial structural vision for the BNS

The spatial principles form the basis for formulating a spatial structural vision for the BNS. This is an abstract schema in which prior principles are synthesized into one future image for the long-term: how do we see the spatial situation of the BNS in the long term? This is therefore the long-term policy framework against which all the objectives, measures and actions in the short term will be measured.

The long-term spatial vision of the future for the BNS is summarized as follows.

The BNS is a sea of space

The structural vision demonstrates the way in which activities within this sea of space can develop. Activities are possible to a greater or lesser extent within certain spatial wholes (or structures). These large structures are represented as zones with white, continuous edges on the figure at the end of this paragraph:

- The coastal zone: this is a zone containing both land and sea. This space should be considered as one spatial whole because important economical, ecological and social challenges are situated here (coastal defence, economic development of the ports, tourist-recreational development of the coastal region, ecological function of the valuable sandbanks, dunes and polders, coastal fishery, military exercises and sea landscape in which the relationship of sea-land is important ...). There is shared competence within this zone (federal and Flemish). Spatially, the base line indicates the border between these competencies.

- The deeper sea: further at sea, the intensity and dynamics of activities decreases and the relationship with the land is of lesser importance. The deeper sea is the ideal area for productive activities in which the raw materials of the sea (energy, fish, sand, gravel ...) can be extracted sustainably. In addition, this zone is also suitable for military exercises.

The BNS is a sea of balances between activities.

The North Sea is one of the most heavily used seas in the world. The Belgian part is embedded in this and demonstrates a high level of activities. This means that a balance must be sought, as well as complementarity with the mainland in the spatial allocation of activities. Spatial emphases are therefore laid down within the spatial structures, but multiple uses of space and looking for win-win situations is still the order of the day. The spatial emphases are situated within the sub-areas, represented by means of zones with dotted and dashed lines and shades.

- The naturally most valuable zone is shaded within the coastal zone. The ecological value of the coastal zone proposes important preconditions on the spatial possibilities of other activities which may be situated in the coastal zone (represented by a zone with a grey dotted line).
- Landscape value plays an important role within the coastal zone. Constructions at sea within the coastal zone can have an important influence on visual pollution (value of landscape). Important heritage value is also found within these coastal zones, but also further at sea.
- There are three important sub-zones deeper at sea:
  - there is an area of potential for generating renewable energy located at the eastern side of the BNS. This zone in fact continues into the Dutch part of the North Sea. This is a zone for wind farms, but also for other forms of renewable energy. This zone is represented by a dashed-dotted line.
  - Situated to the west of this area is a potential zone for all forms of productive activities (fishery, sand and gravel, energy...), represented by a white dotted line.
  - Further west in the deep sea, nature protection is important (shaded). Other activities are possible here, but in balance with the important natural value of this area. Nature protection is also applicable in the bordering French portion of the North Sea.

The BNS is an open sea with structural connections and cross-border relationships

As a relatively small sea space, the realization that the sea is an open system is of great importance to the spatial vision: the relationship and spatial continuity with neighbouring countries is essential in this. This is why structural connections are also indicated (represented by dashed and dotted lines) in this structural vision:

- In the first instance, important shipping connections are shown; this concerns the IMO routes and the connections to the Westerschelde, Westpit route and the shipping lanes to the ports of Ostend and Zeebrugge.

- The coastline is an important structural connection on land and at the same time forms the spatial dividing line between land and sea. Currently this line is a hard border and mainly serves as a connection between the various coastal locations. The intention in the longer term is to adapt this hard border so that more spatial relations are possible between land and sea in the framework of integrated coastal area management. In this way, strong, dynamic zones on land can be extended into dynamic zones at sea: for instance, ports and large cities protected by hard coastal defence infrastructures are installed at sea through shipping lanes, potential areas for activities on the level of production and storage, corridors for cables and pipelines ... On the other hand, land areas with great potential on the level of ecological value, are extended to sea as areas with attention

for nature conservation, coastal defence, as an 'open system' ...

- Furthermore, the structural cable and pipeline connections are very important. These form corridors within the BNS. The most important connections are indicated on the structural scheme: connections to the zone for renewable energy, connections to Great Britain, corridors to Zeebrugge and Ostend. They constitute the impetus for an energy grid at the European level.

The BNS is a sea of strategic possibilities

Certain locations in the BNS are of structural importance at the scale of the entire BNS. These locations are indicated in the structural scheme as strategic locations by their own symbols (circles, squares, triangles, stars, diamonds):

- In the renewable energy zone, a number of energy platforms are provided as links in the Belgian and European energy grid (circles);

- The two most important economic ports bordering on the BNS (in addition to Antwerp, at the Westerschelde) are Ostend and Zeebrugge. They constitute the motor of the spatial dynamic, on land as well as at sea (squares);

- The Port of Nieuwpoort forms an important recreational junction for recreational sailing (at sea and internal waterways) is being expanded further to become one of the largest marinas in Europe.
- A number of strategic locations in the coastal area are indicated for research and testing.

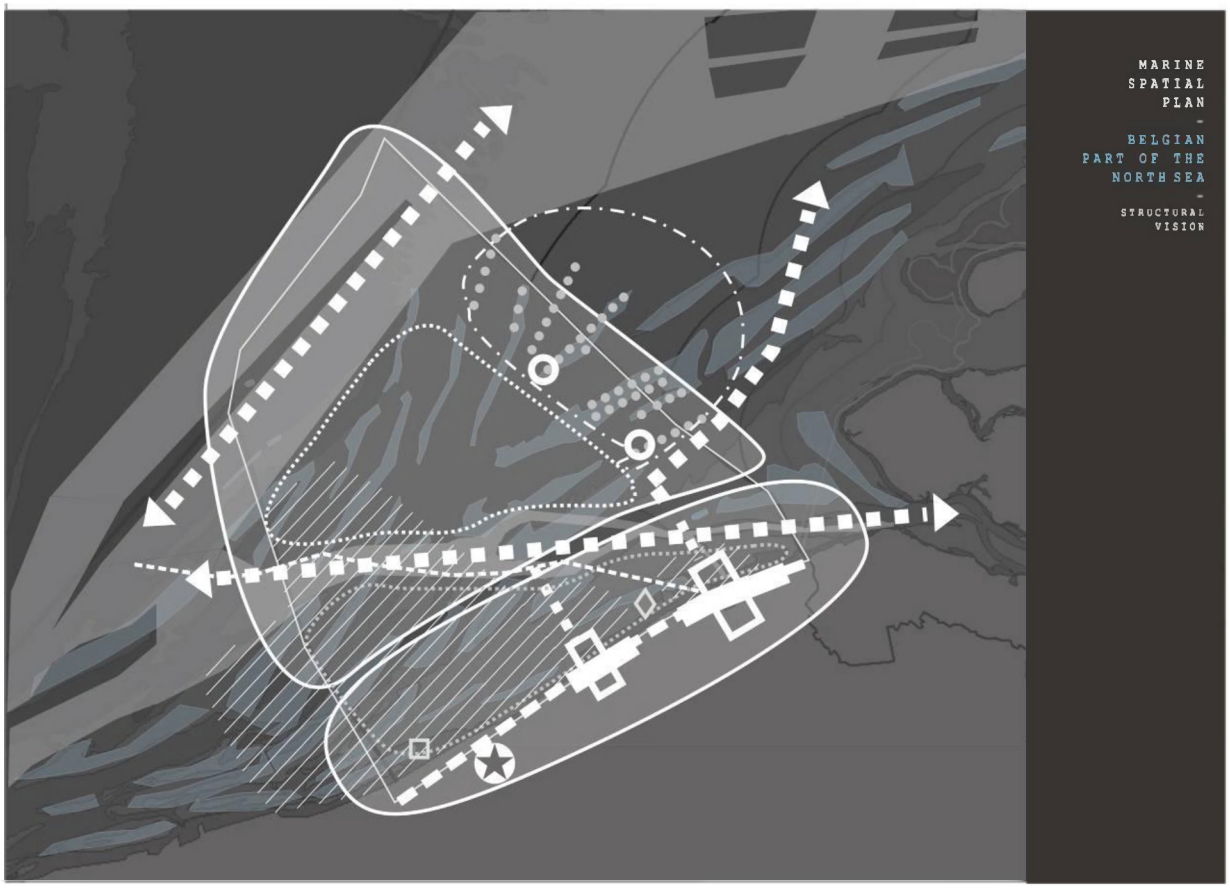


Figure: Spatial structural vision for the BNS

5. Economic, social, environmental and safety objectives and indicators

In what follows, the vision and long-term objectives are translated into specific objectives for the BNS for the 2019 plan horizon. These are the objectives that Belgium has proposed for the coming 6-year planning period (2013-2019). These are situated at the social, economic, ecological and safety level and are defined as much as possible as SMART: specific, measurable, acceptable, realistic and time-bound. The objectives are not binding in themselves, but form the basis for binding measures. Naturally, this concerns objectives with spatial relevance.

The government is committed to implementing a facilitative and stimulating policy so that these objectives can be reached. Whether all the objectives will effectively be met by the plan horizon, however, also depends on other parties and external conditions (economic situation, will of the market parties ...). The objectives are translated in to measurable indicators which, in 2019, should enable politics to evaluate the decisions taken and to adjust them where necessary.

The pursuit is to establish indicators for objectives that concern the use of space. In practice, it is also the case that such indicators are not always available. Maritime spatial planning, after all, provides for the coordination of not postponing and possibly even desirable use of space, without this meaning in every case that this use of space also must necessarily be carried through. This is in fact often determined by sectoral policy making and regulations. In this way, providing space for aquaculture projects within the maritime plan does not mean that this Maritime Spatial Planning also forms the policy domain for developing the sector of marine aquaculture. For this reason the objectives are formulated in such a way that an evaluation can be made at the end of the first cycle as to whether they have been achieved or not.

Environmental objectives

For the whole BNS, in accordance with the Marine Strategy Framework Directive and the Water Framework Directive, a 'good environmental status' (by 2020) and a 'good surface water status' are pursued. The achievement of a favourable conservation status (habitat and birds directive) en the implementation of the biodiversity strategy are also pursued.

Specific environmental measures to achieve this situation are preferentially taken in the protected areas insofar as there is a link with the state of conservation of the habitats and species for which these areas are designated. Further description of these objectives and the translation of these objectives into measurable parameters can be found in the "Determination of Good Environmental Status and establishment of Environmental Targets for the Belgian Marine Waters" (July 2012).

On the level of renewable and sustainable energy production, the objective is to provide at least 2000 MW capacity at sea.

Furthermore, the objective of this marine spatial plan is that the entire current project for the generation of wind energy in the designated area for renewable energy will be operational in 2019.

By 2019 there must also be additional insights acquired as to the feasibility of different techniques for alternative forms of renewable energy in the BNS. In the first instance in this regard, the thinking is about techniques with respect to wave energy.

Finally, as an objective it is also proposed that active environmental measures are tested in

the zone for renewable energy. These measures to promote biodiversity must be sufficiently tested by 2019 in order to implement them in other locations.

Safety objectives

In this marine spatial plan, safety objectives are translated into objectives for the safety of shipping, objectives for protection against the sea and for defence. The spatial policy decisions for every activity are considered against these prerequisites.

With regard to shipping, the objective is to continue to guarantee safe passage and safe access to all Belgian ports, not only for the current generation of ships, but also for ships from the coming generations (larger dimensions, increasing draught). The chance of back-flow for dredging dumping is minimized.

The above also includes that during the planning period, sufficient space is continually provided for dumping dredging spoil in the best possible conditions [this means with the least possible chance of back-flow]. The efficiency of the dredging dumping sites must be increased by reducing the chance of back-flow based upon scientific research and monitoring.

On the level of protection against the sea and floods we refer to the measures and objectives from the Masterplan Coastal Safety (http://www.kustveiligheid.be).

In conclusion, the objective is that the BNS continues to provide sufficient space for conducting military exercises, attuned to other activities and uses in the BNS.

Economic objectives

The goal is, within the planning period, to guarantee sufficient space for all economic activities at sea:

- All of the existing fishing grounds remain accessible, except in the designated areas for renewable energy subject to infrastructural constructions for energy storage and transport. Space will be created for integrated aquaculture as a complimentary activity for the 'traditional' fishing activity.

- Corridors for cables and pipelines, aligned with other activities and uses in the BNS and with attention to efficiency. Therefore, the objective is to lay all new cables and pipelines in the corridors already provided and to pursue common cables as far as possible;

- Sufficient sand and gravel extraction zones in function of the demand for building sand and gravel and in function of the coastal defence activities. To this end, the objective is to sufficiently monitor the impact on the sea floor and biodiversity and to limit the amount, and if necessary the duration of extraction in function of this impact. Per successive periods of 5 years (2010-2015 and 2015-2020), a maximum volume of 15 million m^3 (3 million m^3/year as progressive average over 5 years) may be extracted. In addition to this, extractions for coast replenishment with the goal of maintaining the current profile of the beaches will be taken into account;

- The current zone for renewable energy must offer sufficient space for the generation of sustainable forms of energy. The specific objective is, by 2020, to have approximately at least 2,000 MW installed capacity in this zone;

- The marine spatial plan provides for the spatial potential for the expansion of the Belgian ports;

- The existing space at sea for recreational activities will be maintained to the extent possible;

By the end of the plan horizon (2019), the realization of the Belgian Offshore Grid must be started.

By 2019 there will be an electricity connection with Great Britain.

Cultural, Social and Scientific Objectives

An important social objective is the maximum conservation of the sea landscape (seascape) and the underwater heritage of the BNS.

The sea landscape (seascape) is the landscape of the sea surface to the horizon and has great experiential value due to its integrity for the coastal resident as well as tourists and recreational users. This is one of the most integrally preserved landscapes and must also be cherished as a valuable good for future generations.

The coast and the BNS must also be an attractive destination for tourism and recreation in 2019.

Additionally, the BNS must also be a place for research, education and monitoring. The existing accessibility of the BNS for these activities must also be maintained to the extent possible in 2019.

6. Spatial policy choices for users and activities in the BNS

The 'Spatial policy decisions' are succinctly described for the sake of smooth reading of this document for cross-border consultation. These policy options are described in greater detail in the actual marine spatial plan.

The long-term structural vision, which is decisive for the economic, social and environmental and safety objectives in the short term (6 years), is hereinafter translated into policy decisions for every activity and use and protection of the BNS. These are the spatial decisions for the planning horizon 2019 which are binding. This is a more specific representation of the spatial accents in the policy, in words as well as images for each user. The spatial alternatives considered for every activity and user are also represented.

6.1 Nature conservation

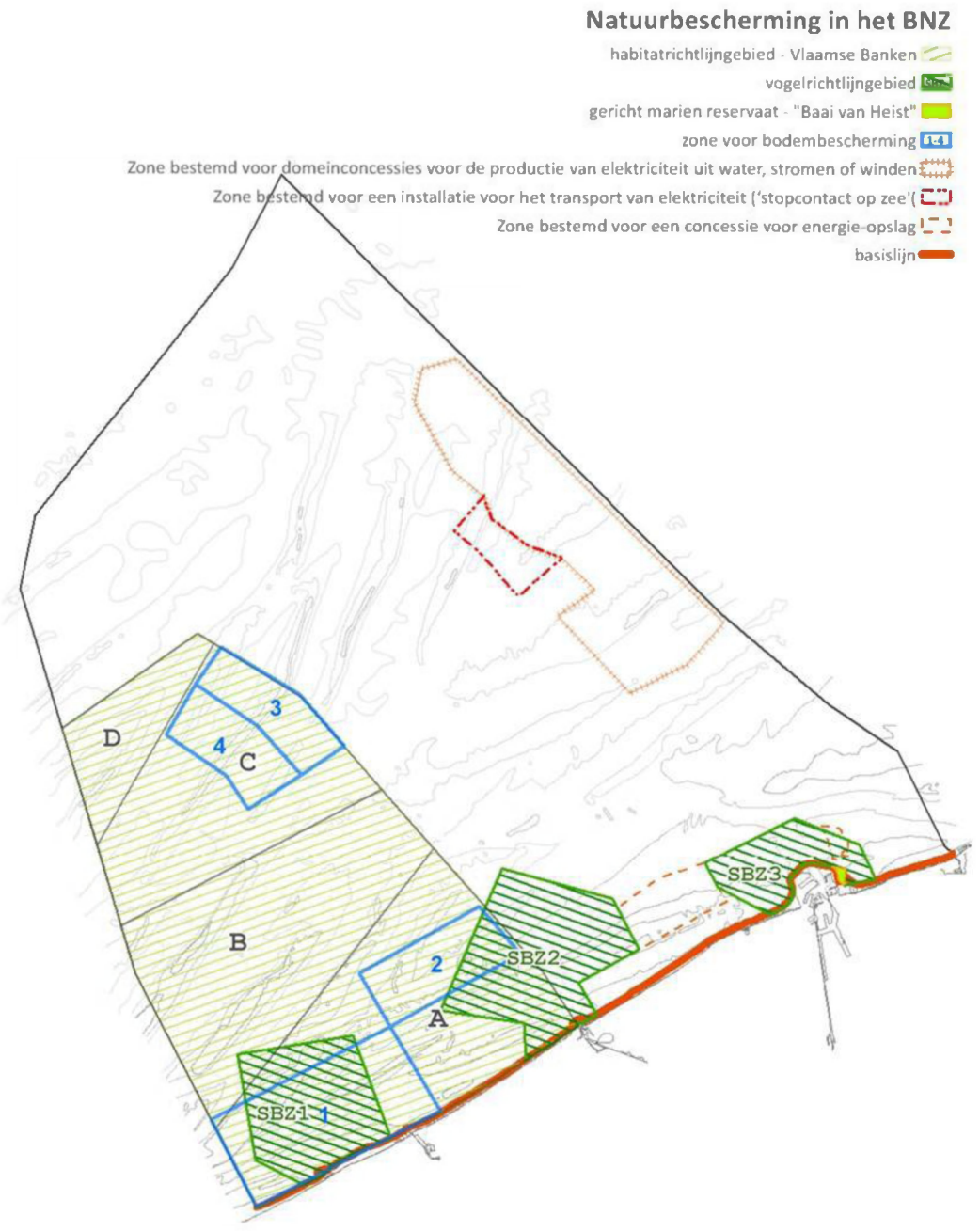
The vision assumes maximum conservation of the most valuable ecological zones by delineating marine protection areas with actual management measures. In these marine conservation areas, it is desirable to pursue an ecological situation which is significantly better than the minimum according to the Marine Strategy Framework Directive.

The option of building a network of protected marine areas (international and land-sea connections) is also pursued.

Finally, there is an on-going search for forms of multi-spatial use that provide advantages for the marine environment.

Summary of the spatial policy options

- Maintaining the contours of the nature conservation areas in the BNS and maintaining the current number of nature conservation areas;
- Concentration on the further development and implementation of effective nature conservation measures in the nature conservation areas. Measures for the “Vlaamse Banken” are provided for sport fishing, sand and gravel extraction and professional fishery. Further alignment of the measures with nearby nature conservation areas in France and on land;
- When there are new functions or activities in the BNS (energy storage, power outlet at sea, zone for renewable energy…) the possibilities for multiple use of a space in function of nature conservation or development are considered (integrated aquaculture, breeding grounds for small gulls, tern island, artificial reefs …).



MARIEN RUIMTELIJK PLAN
VISIE DECEMBER 2012

Grontmij UNIVERSITEIT GENT

Translation of the map legend: Nature Conservation

- Natuurbescherming in het BNZ - Nature Conservation
- Habitatrichtlijngebied – Vlaamse Banken – Designated Habitat Directive Area
- Vogelrichtlijngebied – Designated Bird Directive Area
- Gericht marien reservaat « Baai van Heist » - National nature reserve « Baai van Heist »
- Zone voor bodembescherming – Zone for seabed protection
- Zone bestemd voor domeinconcessies voor de productie van elektriciteit uit water, stromen of winden – Zone for the production of electricity generated by water, current and wind.
- Zone bestemd voor een installatie voor het transport van elektriciteit ('stopcontact op zee') - Zone designated for a high -voltage station ('a power outlet' at sea)
- Zone bestemd voor een concessie voor energie-opslag – Zone designated for a concession for energy storage
- Basislijn – Baseline
-

6.2 Cables and pipelines, energy generation and storage

These notions are considered together due to the fact that they, in a spatial sense, are related.

The vision assumes sustainable offshore energy generation with optimal use of various compatible forms of 'green' energy and a choice of location with minimal impact. Space is provided for energy storage and a concession area for a power outlet at sea.

Connections take place efficiently. Where possible, multiple use of space is promoted.

Summary of the spatial policy options

- A maximum amount of new cables and pipelines in the cable and pipeline corridors; cables and pipelines follow the shortest possible route between points of departure and arrival;
- Additional cables and high-voltage stations in function of the development of an European energy grid;
- Additional concession zones for a power outlet at sea;
- Zone for a concession application for a new electricity cable connection with Great Britain;
- Landing points: Ostend (Slijkens) and Zeebrugge;
- The already-indicated zone for generating renewable energy remains and will not be expanded within the planning period; the pursuit is to make the current concession zone operational as far as possible within the planning period;

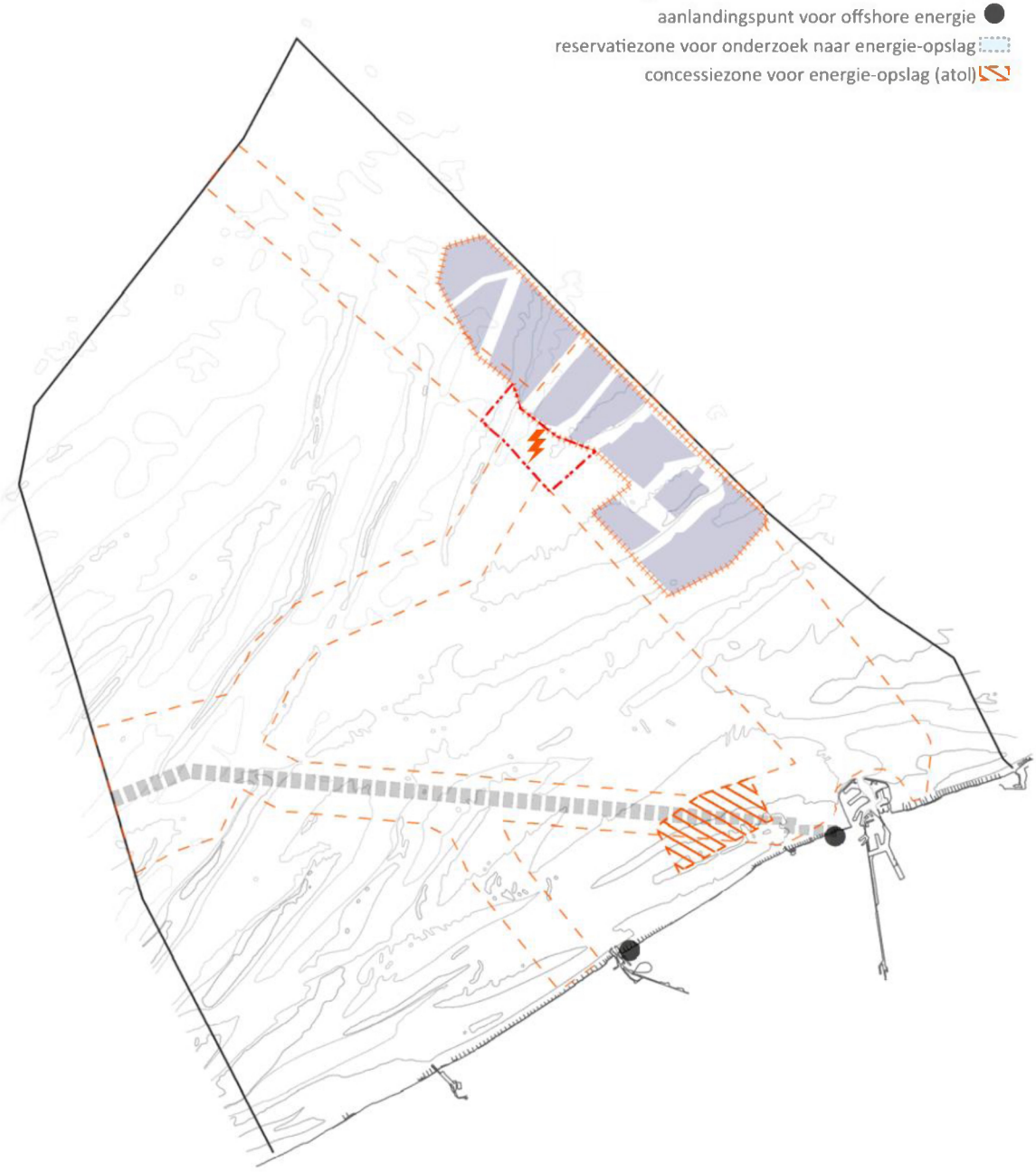
- New zone for energy atoll off the coast of Blankenberge-De Haan; a maximum of 1/3 of the designated area can be awarded for a concession;

- Maintenance of safety perimeters;

- Potential for multiple use of space;
  - High-voltage stations can obtain a nature function or serve as tug stations;
  - The proposal for the location of the energy atoll is the zone off the coast of De Haan-Blankenberge and, in addition to the function of energy storage, receives a function in the framework of nature development;
  - The zone for renewable energy is the priority zone for tests with alternative forms of sustainable energy generation;
  - The zone for renewable energy is also designated as a location for concessions for potentially integrated marine aquaculture (see section on marine aquaculture);
  - The zone for renewable energy is also used for research into proactive nature conservation measures (constructing artificial reefs and seal platforms).
  - Visitor Centre

Energie, kabels & pijpleidingen in het BNZ

concessiezone voor windmolenparken en hernieuwbare energie (energieopwekking en -opslag)
concessiezone voor stopcontact op zee
kabel- en pijpleidingencorridor
zone voor concessieaanvraag elektriciteitskabel naar Groot-Brittanië
aanlandingspunt voor offshore energie
reservatiezone voor onderzoek naar energie-opslag
concessiezone voor energie-opslag (atol)



MARIEN RUIMTELIJK PLAN
VISIE DECEMBER 2012

Grontmij UNIVERSITEIT GENT

Translation of the map legend: Energy, Cables and pipelines in the BNS

- Energie, kabels & pijpleidingen in het BNZ - Energy, Cables and pipelines in the BNS
- Zone bestemd voor domeinconcessies voor de productie van elektriciteit uit water, stromen of winden – Zone for the production of electricity generated by water, current and wind.
- Zone bestemd voor een installatie voor het transport van elektriciteit ('stopcontact op zee') – Zone designated for a high -voltage station ('a power outlet' at sea)
- Aanlandingspunt voor offshore energie – Landing points for offshore energy
- Preferentiële zone bestemd voor concessies voor kabels en pijpleidingen – Preference zone for a concession for cables and pipelines (i.e. cable and pipeline corridors)
- Concessiezone elektriciteitskabel naar Groot-Brittannië – Zone for a concession application for a new electricity cable connection with Great Britain
- Zone bestemd voor een concessie voor energie-opslag – Zone designated for a concession for energy storage
- Voorzorgsgebied – Precautionary area
- Basislijn – Baseline

6.3 Shipping, port development and dredging

Summary of the spatial policy options

- Not mortgaging the further expansion of the ports Zeebrugge, Ostend, Nieuwpoort and Blankenberge;
- Maintaining dredging locations in function of safe nautical access and in relation to the developments of ships;
- Maintaining and expanding dredging deposit locations with a reserve area, based on all current deposit locations, in function of the efficiency of dumping, taking into account the operational requirements;
- Researching the possibility of additional shipping lane systems and initiating the procedure for announcing this to IMO;
- No objections to the important traffic streams;
- Maintaining sufficient safe shipping connections between the Belgian coast and Great Britain;
- Not mortgaging possibilities for temporary emergency lookout stations in the reservation area deep at sea;
- Permanent tug station in function of serving the Westpit, Ferry and the rest of the BNS;
- Potential for multiple use of space;

- A new tug station is possible to combine with a high-voltage station provided that this is located outside the zone for renewable energy.

MARIEN RUIMTELIJK PLAN
VISIE DECEMBER 2012

Grontmij UNIVERSITEIT GENT

Translation of the map legend: Shipping, deposit of dredged material and port development

- Scheepvaart, baggerstorten en havenontwikkeling in het BNZ – Shipping, deposit of dredged material and port development in the BNS
- Voorzorgsgebied – Precautionary area
- Ankergebied – Anchor area
- Te vermijden gebied – Area to be avoided
- Schuiloorden – Places of refuge
- Gekende verkeersstromen – Known maritime traffic flows
- Vrijwaren bocht Westpitroute – Safeguarding the bend of the Westpit route
- Reservatiezone voor havenuitbreiding –Reservation area for port expansion
- Zone voor hernieuwbare energie – vaarverbod – Zone for the offshore renewable energy – closed area for shipping
- Concessiezone voor stopcontact op zee – Zone designated for a high -voltage station ('a power outlet' at sea)
- Machtigingszone voor storten van baggerspecie – zone for the deposit of dredged material
- Reservatiezone voor storten van baggerspecie – Reservation area for the deposit of dredged material
- Basislijn – Baseline

6.4 Fishery and marine aquaculture

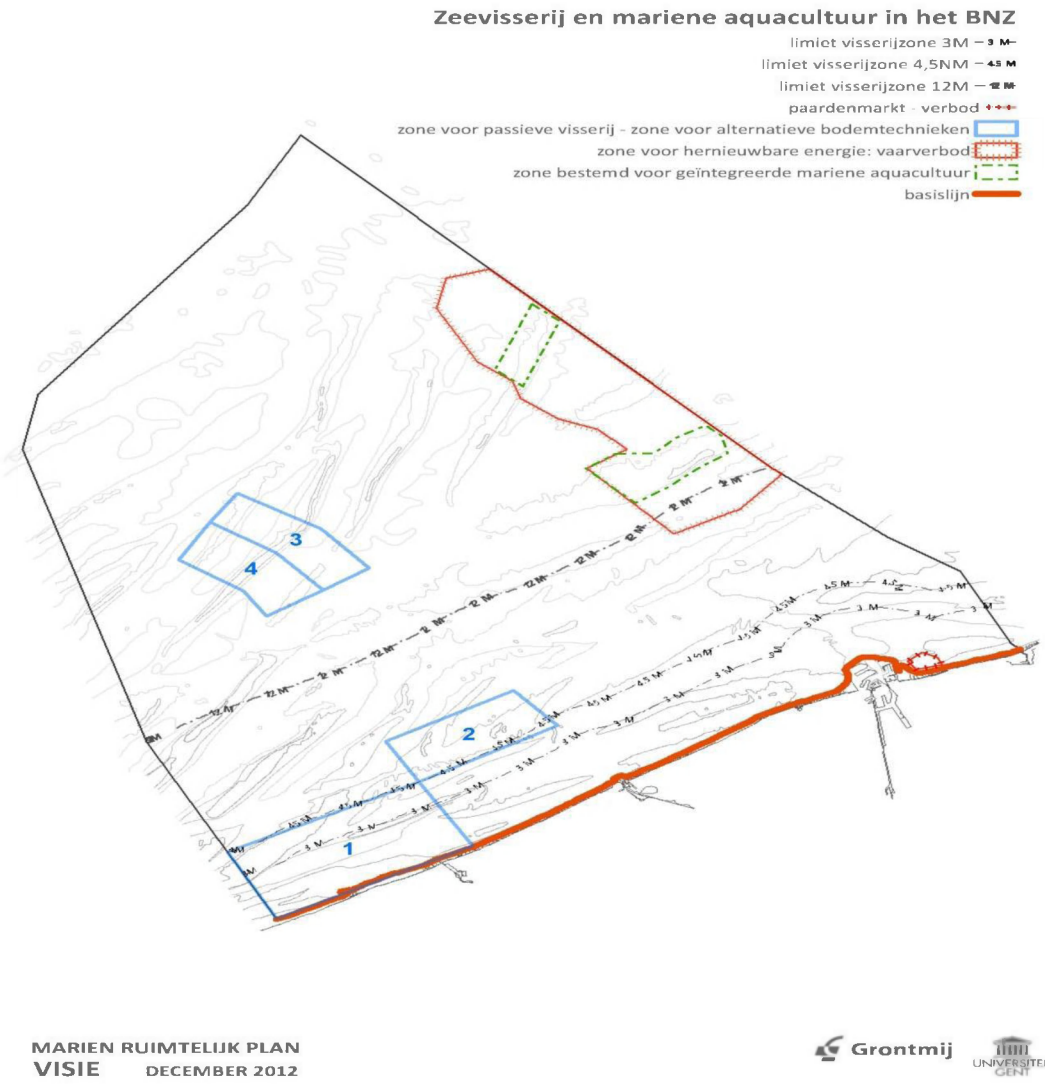
This vision assumes the maximum preservation of rich fishing grounds as a function of the sustainability of the Belgian fishing sector. Complementary, sustainable forms of fisheries and marine integrated aquaculture are stimulated.

Summary of the spatial policy options

- Preservation of current fishing grounds, except for the renewable energy zone (navigation prohibition) and for infrastructural constructions for coastal defence, energy storage and energy transport;
- Preservation of the access to the Belgian fishing ports;
- Stimulate alternative, sustainable fishery in parts of the designated habitat directive "Vlaamse Banken";
- Only integrated forms of marine aquaculture are possible and they are limited, within this

planning period, to the renewable energy zone, namely Belwind I and C-Power;

- Potential for multiple use of space;
  In the zone for renewable energy, beside activities in the framework of production and storage of renewable energy, only activities of integrated marine aquaculture are allowed.



Translation of the map legend: fisheries and aquaculture

- Limiet visserijzone 3M – 3NM limit of the fishing zone
- Limiet visserijzone 4,5 NM - 4,5 NM limit of the fishing zone
- Limiet visserijzone 12M –12NM limit of the fishing zone
- Paardenmarkt 'verbod' – Paardenmarkt 'prohibition'

- Zone voor passieve visserij – zone voor alternatieve bodemtechnieken – Zone for passive fishing techniques – zone for alternative seabed fishing techniques
- Zone bestemd voor geïntegreerde aquacultuur – Zone for integrated aquaculture
- Basislijn – Baseline

6.5 Sand and gravel extraction

The vision assumes an optimal and sustainable extraction of sand and gravel, both for the construction sector and for the use as a function of the coastal defence against flood risks and for other applications.

Summary of the spatial policy options

- Preservation of the 4 existing extraction zones;
- New definition of the sectors of zone 2 as a function of the shipping safety and nature conservation;
- Introduction of an appropriate assessment as an additional part of the environmental impact reports for concession demands within the special zone for nature conservation 'Vlaamse Banken';
- Preservation of the maximum allowed extraction volumes, with a gradual reduction of the extraction in the special zone for nature conservation;
- Potential for multiple use of space
    - Combination with other activities in the extraction zones is possible since sand- and gravel extraction are temporary activities

Translation of the map legend: Sand and gravel extraction

- Zand- en grindontginning - Sand and gravel extraction in the BNS

- Controle en exploitatiezones – Zone for control and exploitation
- Monitoringgebied – Zone for monitoring
- Basislijn – Baseline

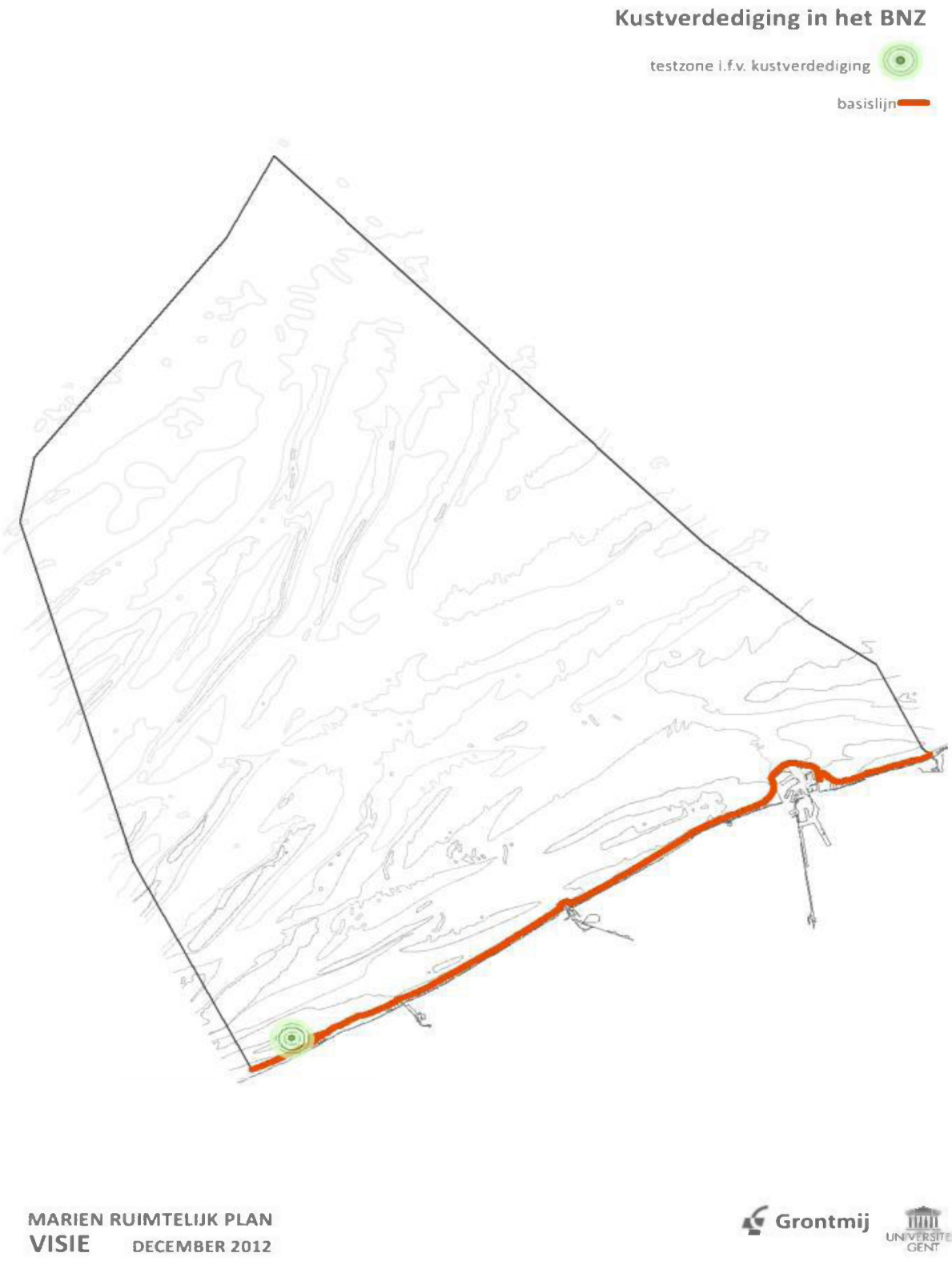
6.6 Coastal defence

The vision assumes a safe coast. The framework for this has already been established by the Masterplan Coastal Safety. The emphasis is on a combination of hard and soft coastal defences, attuned to the specific spatial characteristics of the surroundings and anticipating the natural dynamic at sea. Coastal defence not only has to respond to a small line that forms the border between sea and land, but must constitute a part of integrated coastal zone management which combines measures on land with those at sea.

Particular attention is given to the effect of the potential expansion of the ports of Ostend and Zeebrugge for coastal defence and development in the zones east and west of these ports. The potential construction of an energy atoll in the proposed zone will also influence coastal defence.

Summary of the spatial policy options

- Maintenance of sufficient sand and gravel reclamation areas in function of soft coastal defence, in the framework of implementing and supporting the Masterplan Coastal Safety;
- Exploring new possibilities for coastal defence;
- Specific location for experiments within this coastal zone at the Broers Bank;
- Potential for multiple use of space: no execution within this planning period.



Translation of the map legend: Coastal Defence

- Kustverdediging in het BNZ – Coastal Defence in the BNS
- Testzone voor kustverdediging – Zone for experiments in function of coastal defence

6.7 Scientific research, buoys, beaconing, radars and measuring poles

The vision assumes additional knowledge required about the BNS, in function of innovation, of monitoring requirements, sustainable management/exploitation of natural resources and the protection and repair of the marine environment and shipping safety.

The requisite buoys, radars and measuring poles are provided in the BNS.

Summary of the spatial policy options

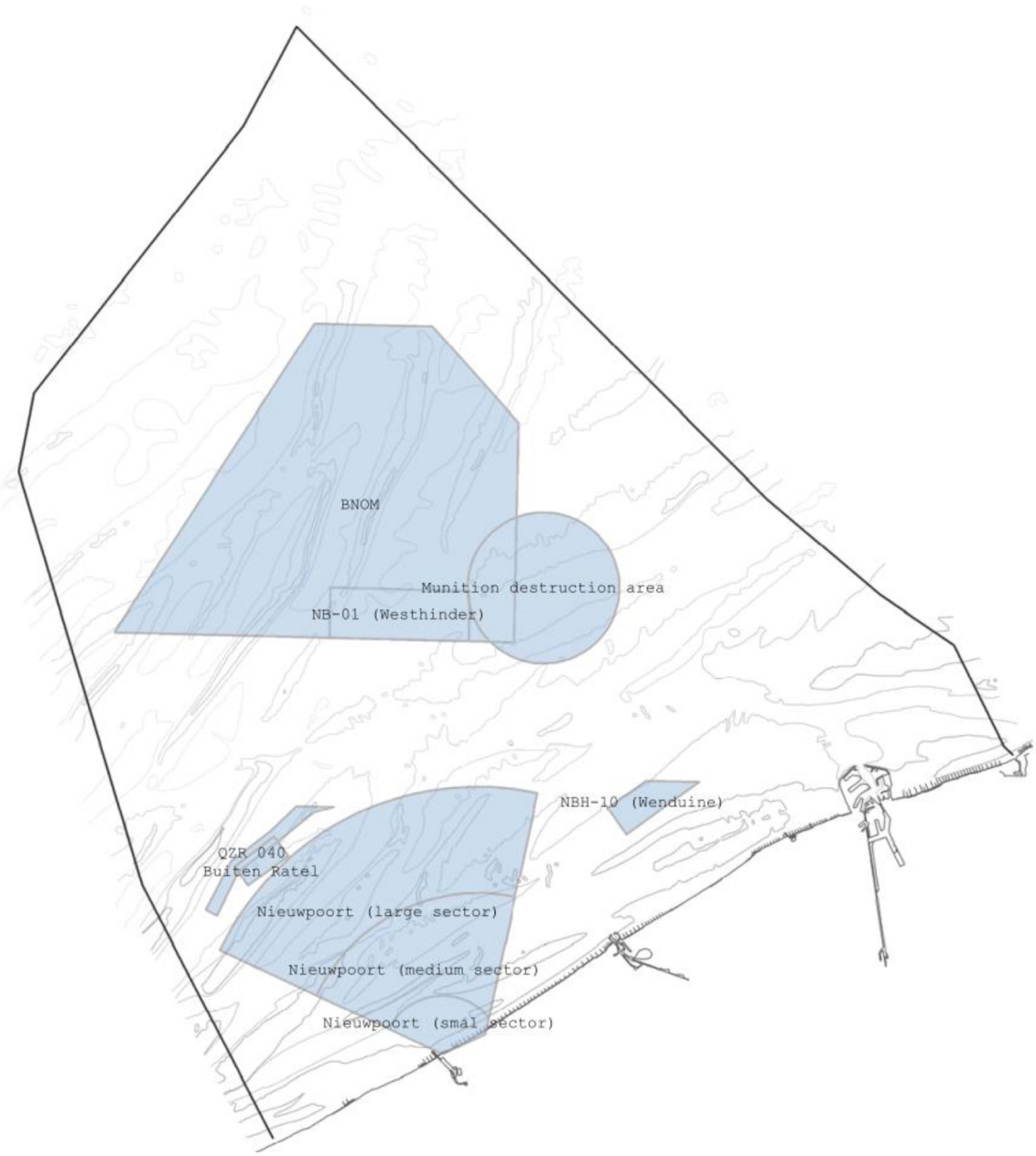
- Potential for multiple use of space:
  - Buoys, beaconing, radars, measuring poles, and so forth, can best be combined with other functions.

6.8 Military use

The vision assumes support of Belgian military (international) engagements. To this belongs, inter alia, providing sufficient space for military exercises and mine removal operations at sea.

Summary of the spatial policy options

- The BNS provides sufficient space for military exercises and other military uses;
- Sufficient consultation is conducted about the contours and uses of the various legally-established zones, in function of proper alignment with the other activities and uses in the BNS;
- In this framework, an investigation is taking place as to whether zone NBH-10 is compatible with the zone for the energy atoll. The same is applicable for the compatibility between the Nieuwpoort-Lombardsijde firing exercises and the natural functions.



Translation of the map legend: Military use

- Militair gebruik van het BNZ – Military use in the BNS

- Basislijn – Baseline

6.9 Tourism and recreation

This vision assumes the retention of the BNS as a space for sustainable recreation.

Summary of the spatial policy options

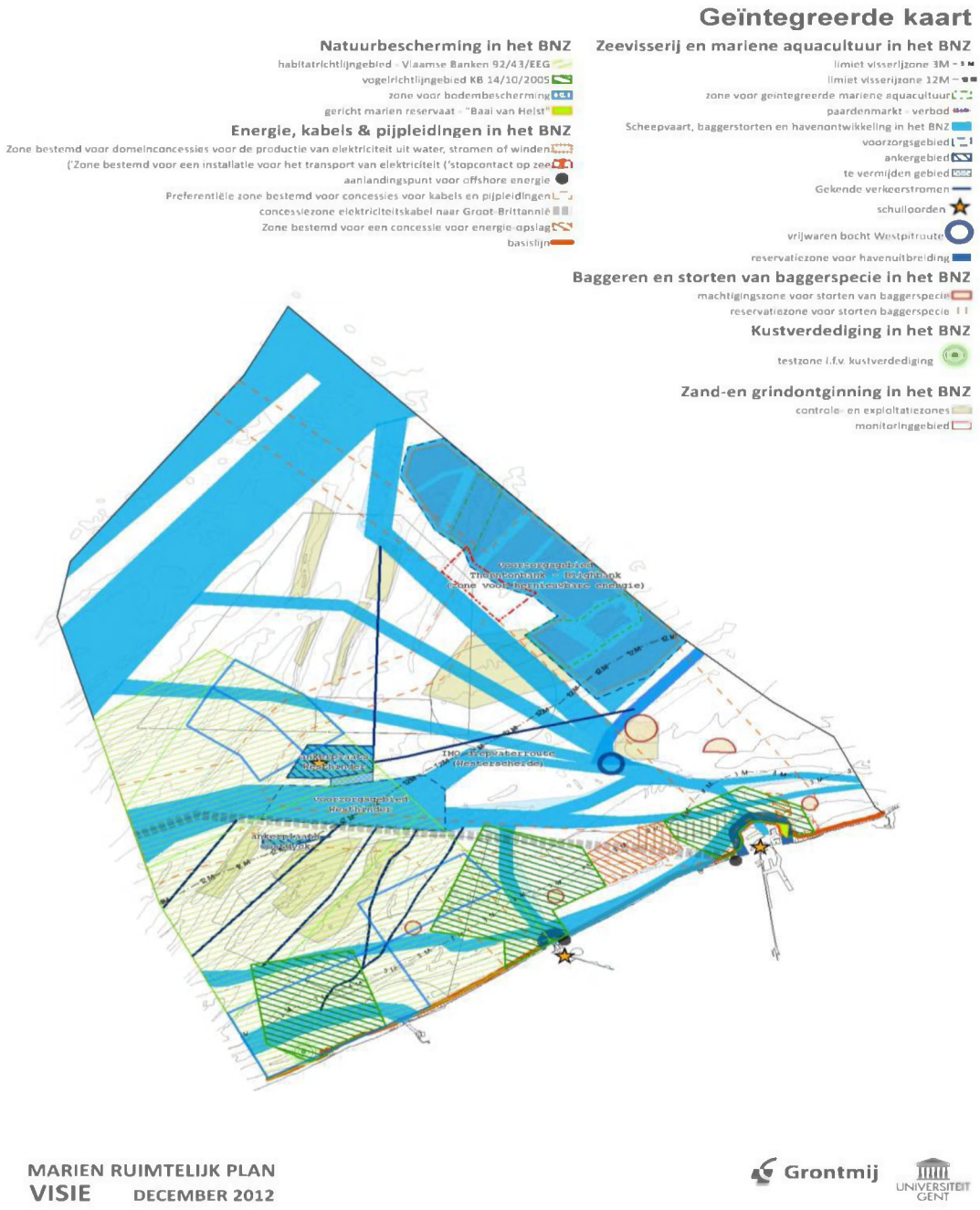
- Maintaining as much as possible the tourist-recreational possibilities in the BNS;
- Ban on the use of seabed-disturbing techniques in the entire habitat directive area 'Vlaamse Banken'.

6.10 Cultural heritage and seascape

Summary of the spatial policy options

- Allowing cultural heritage to take advantage of protective measures already in place.
- Ensuring that appropriate mitigating measures are taken when cultural heritage is threatened by certain activities.
- Making optimal use of shipwrecks in the framework of nature conservation.

7. Coordinated graphic plan



Translation of the map legend: Integrated graphic plan

- Natuurbescherming in het BNZ – Nature conservation in the BNS
- Habitatrichtlijngebied Vlaamse Banken 92/43/EEG
- Vogelrichtlijngebied KB 14/10/2005 – Birds Directive AR 14/10/2005
- Zone voor bodembescherming – Zone for sea floor protection
- Gericht marien reservaat "Baai van Heist" – Targeted marine reserve "Baai van Heist"
- Energie, kabels &pijpleidingen in het BNZ – Energy, cables and pipelins in the BNS
- Zone bestemd voor domeinconcessies voor de productie van elektriciteit uit water, stromen of winden – Zone for domain concessions for the production of electricity from water, tides or winds
- Zone bestemd voor een installatie voor het transport van elektriciteit ('stopcontact op zee') – zone for an installation for the transport of electricity ('power outlet at sea') -
- Aanlandingspunt voor offshore energie - Landing point for offshore energy
- Preferentiële zone bestemd voor concessies voor kabels en pijpleidingen – Preference zone for a concession for cables and pipelines (i.e. cable and pipeline corridors)
- Concessiezone elektriciteitskabel naar Groot-Brittannië – Zone for a concession application for a new electricity cable connection with Great Britain
- Zone bestemd voor een concessie voor energie-opslag – Zone designated for a concession for energy storage
- Basislijn – Baseline
- Zeevisserij en mariene aquacultuur in het BNZ – Sea fishery and marine aquaculture in the BNS
- Limiet visserijzone 3M – Limit fishery zone 3M
- Limiet visserijzone 12 M – Limit fishery zone 12M
- Zone voor geïntegreerde mariene aquacultuur – Zone for integrated marine aquaculture
- Paardenmarkt verbod – Paardenmarkt ban
- Scheepvaart, baggerstorten en havenontwikkeling in het BNZ – Shipping, port development and dredging in the BNS
- Voorzorgsgebied – Precautionary area
- Ankergebied – Anchor area
- Te vermijden gebied – Area to be avoided
- Gekende verkeersstromen – Known maritime traffic flows
- Schuiloorden – Places of refuge
- Vrijwaren bocht Westpitroute – Safeguarding the bend of the Westpit route
- Reservatiezone voor havenuitbreiding – Reservation area for port expansion
- Baggeren en storten van baggerspecie in het BNZ – Dredging and deposit of dredged material in the BNS
- Machtigingszone voor storten van baggerspecie – Zone for the deposit of dredged material
- Reservatiezone voor storten van baggerspecie – Reservation area for the deposit of dredged material
- Kustverdediging in het BNZ – Coastal defence in the BNS
- Testzone i.f.v. kustverdediging – Test zone as a function of coastal defence
- Zand- en grindontginning in het BNZ – Sand en gravel extraction in the BNS
- Controle- en exploitatiezones – Control and exploitation zones
- Monitoringgebied – Monitoring area

Annex 3 "Actions for executing the marine spatial plan" is not added to this document for cross-border consultation, as these measures primarily concern the internal federal distribution of competences or responsibilities for implementing the objectives mentioned in Annex 2.

Annex 4 "Maps" is also not included with the document for cross-border consultation because the relevant maps have already been included in Annex 2. Repeating it here would be redundant.

[1] A flood of space. Towards a spatial structure plan for sustainable management of the North Sea (GAUFRE) , 2005, University Gent, Federal Science Policy, 2005.

[2] Decisions of the Council of Ministers, 19 December 2003 and 25 March 2005.

[3] COM(2008) 791 final.

[4] Ehler, C. and Douvere, F. (2009): Maritime spatial planning: A step-by-step approach toward ecosystem-based management. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides, No. 53, IOCAM Dossier No. 6, Paris, UNESCO.

[5] General Policy Note Marine Environment, (House of Representatives DOC 52 2225/024).

[6] Act of 20 January 1999 on the protection of the marine environment and on the organisation of the maritime spatial planning in the sea areas under Belgian jurisdiction – coordinated version http://www.ejustice.just.fgov.be/wet/wet.htm, file number "999012033" .

[7] Royal Decree of 13 November 2012 on the establishment of an advisory committee and the procedure for adoption of a maritime spatial planning in the Belgian sea areas – consolidated version http://www.ejustice.just.fgov.be/wet/wet.htm, file number 2012111307.

[viii] A flood of space. Towards a spatial structure plan for sustainable management of the North Sea (GAUFRE) , 2005, University Gent, Federal Science Policy, 2005.

[ix] Een zee van ruimte. Naar een ruimtelijk structuurplan voor duurzaam beheer van de zee (GAUFRE)' (2004-2005), Universiteit Gent, Federal Science Policy, 2005.

[x] RD 12 MARCH 2002. – Royal Decree establishing the rules for laying electricity cables entering territorial waters or the national territory, or which are placed or used for exploration of the continental shelf, the mining of mineral riches and other non-living riches thereof, or of the works for artificial islands, installations or facilities falling within the Belgian remit (Annex 1, section 2.1.2).

[xi] Source: http://www.mumm.ac.be/NL/Management/Sea-based/windmills_table.php; consulted on 7/11/2012.

[xii] The capacity of the wind turbines has increased since the application, so that the anticipated total capacity of the C-Power project has increased to 325 MW.

[xiii] Source: Employment figures, Agoria 2012.

[xiv] Source: zeeweringenkustbeheer.afdelingkust.be/level2.asp?TAAL_ID=1&ITEM_L1_ID=12&ITEM_L2_ID=26; consulted on 7/11/2012; On 10 June 2011 the Government of Flanders, on the proposal of the Flemish Minister of Mobility and Public Works, H. Crevits, ratified the coastal defence plan.

[xv] Source: http://www.kustatlas.be/map/?lan=nl&theme_id=5, consulted on 7/11/2012.

[xvi] Source: http://www.kustatlas.be/map/?lan=nl&theme_id=5, consulted on 7/11/2012.

[xvii] Source: http://www.kustatlas.be/map/?lan=nl&theme_id=5, consulted on 7/11/2012.

[xviii] Source: IMDC, 2012. Environmental Impact Report Rentel wind farm (SEA Rentel), Antwerp, Belgium, 685 pp, page 553.

[xix] Source: IMDC, 2012. Environmental impact report, Rentel wind farm (SEA Rentel), Antwerp, Belgium, 685 pp, p. 544.

[xx] Eurokotter trawlers are vessels specifically designed for fishing within the 12 mile zone and equipped with a beam trawl. Their maximum length is 24 metres. These are small and flexible vessels that can modify their activities in the short term (for targeting specific species or sites). Source: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 35.

[xxi] Source: Government of Flanders, Agriculture and Fisheries Department, Agriculture and Fisheries Policy Section, seafishing, 2009, in: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 37.

[xxii] Source: Government of Flanders, Agriculture and Fisheries Department, Agriculture and Fisheries Policy Section, seafishing, 2009, in: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 37.

[xxiii] Source: Government of Flanders, Agriculture and Fisheries Department, Agriculture and Fisheries Policy Section, seafishing, 2009, in: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 40.

[xxiv] Source: European Fisheries Fund, in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 48.

[xxv] Source: Tessens & Velghe, 2010 in IMDC, 2012. Environmental Impact Report Rentel wind farm (SEA Rentel), Antwerp, Belgium, 685 pp.

[xxvi] Source: Vanderperren & Polet, 2009 in IMDC, 2012. Environmental Impact Report Rentel wind farm (SEA Rentel), Antwerp, Belgium, 685 pp, page 546.

[xxvii] Source: European Fisheries Fund, in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 48.

[xxviii] Source: Evaluatie van de milieu-impact van Warrelnet- en boomkorvisserij op het Belgisch deel van de Noordzee (WAKO). Final report; Depestele, J.; Courtens, W.; Degraer, S.; Derous, S.; Haelters, J.; Hostens, K.; Moulaert, I.; Polet, H.; Rabaut, M.; Stienen, E.; Vincx, M. (2008); ILVO fishing: Ostend. 185 pp, page XIV.

[xxix] Source: Belgian State, 2012. Initiële Beoordeling voor de Belgian marine wateren. Marine Strategy Framework Directive – Article 8, paragraphs 1a and 1b. MUMM, Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 81 pp, page 48.

[xxx] Source: Tessens & Velghe, 2011; Vanderperren & Polet, 2009 in IMDC, 2012. Environmental Impact Report Rentel wind farm (SEA Rentel), Antwerp, Belgium, 685 pp, page 545.

[xxxi] Source: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 61.

[xxxii] Source: Lauwaert et al., 2011 in Belgian State, 2012. Initiële Beoordeling voor de Belgian marine wateren. Marine Strategy Framework Directive – Article 8, paragraphs 1a and 1b. MUMM, Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 51.

[xxxiii] Source: Belgian State, 2012. Initiële Beoordeling voor de Belgian marine wateren. Marine Strategy Framework Directive – Article 8, paragraphs 1a and 1b. MUMM, Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 53.

[xxxiv] Source: Du Four en Van Lancker, 2008, in: Belgian State, 2012. Initiële Beoordeling voor de Belgian marine wateren. Marine Strategy Framework Directive – Article 8, paragraphs 1a and 1b. MUMM, Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 53.

[xxxv] Source: Maes et al., 2002 in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 82.

[xxxvi] Source: Maes et al., 2002 in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 82.

[xxxvii] Thus, the rotation system is no longer used because this did not bring about any regeneration.

[xxxviii] Source: Monitoringssysteem Duurzaam Oppervlaktedelfstoffenbeleid – jaarverslag 2011 – resultaten 2010. The MDO working group consists of LNE, OVAM and VITO.

[xxxix] Source: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 69.

[xl] Source: Belgian State, 2012. Initiële Beoordeling voor de Belgian marine wateren. Marine Strategy Framework Directive – Article 8, paragraphs 1a and 1b. MUMM, Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 49.

[xli] Source: Zeegra 2004 in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 72.

[xlii] Source: Zeegra 2004 in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 74.

[xliii] Source: Zeegra 2004 in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, pages 70-71.

[xliv] The sectors are sometimes indicated as A, B and C.

[xlv] Source: Province West Flanders, 2012. Provincial Spatial Implementing Plan 'Beach and Bank', Belgium.

[xlvi] Source: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 108.

[xlvii] Source: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 108.

[xlviii] Source: Westtoer, 2009 in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp.

[xlix] Source: Westtoer, 2009 in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, pages 102-104 and 108.

[l] Source: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 108.

[li] Source: UNEP, 2009 in Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 109.

[lii] This number reflects the number of sea days for the entire GVS. The number of large trawlers (> 662 kW) is 9,617.

[liii] Source: European Fisheries Fund, page 76 and Government of Flanders, Government of Flanders, Agriculture and Fisheries Department, Agriculture and Fisheries Policy Section, seafishing, 2009, page 60, in: Belgian State, 2012. Socio-economic analysis of the use of the Belgian marine waters and the costs associated with the damage to the marine environment. Marine Strategy Framework Directive – Art 8, lid 1c. Federal Public Service Public Health, Food Chain Safety and Environment, Brussels, Belgium, 137 pp, page 52.

[lv] Source: www.kustveiligheid .be, consulted on 7/11/12.

[lvi] Source: ELIA, X. Hoogspanningsnet in de Noordzee – een toekomstvisie, Brussels, Belgium, 12 pp.

[lvii] You can find more information about the regional spatial implementation plan at http://www2.vlaanderen.be/ruimtelijk/grup/00300/00314_00001/index.html

[lviii] Source: http://www.vlaamsebaaien.com, consulted on 7/11/12..