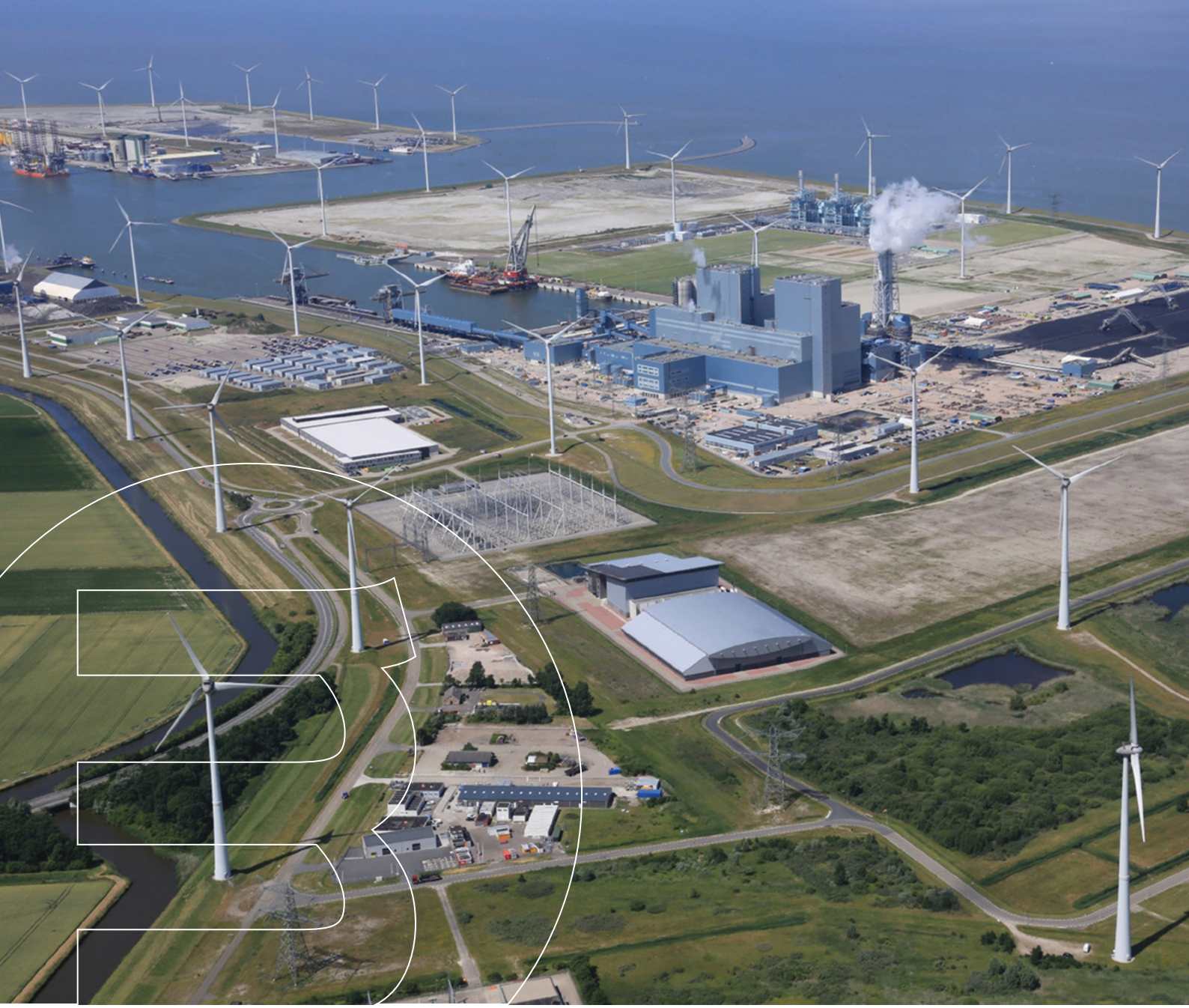
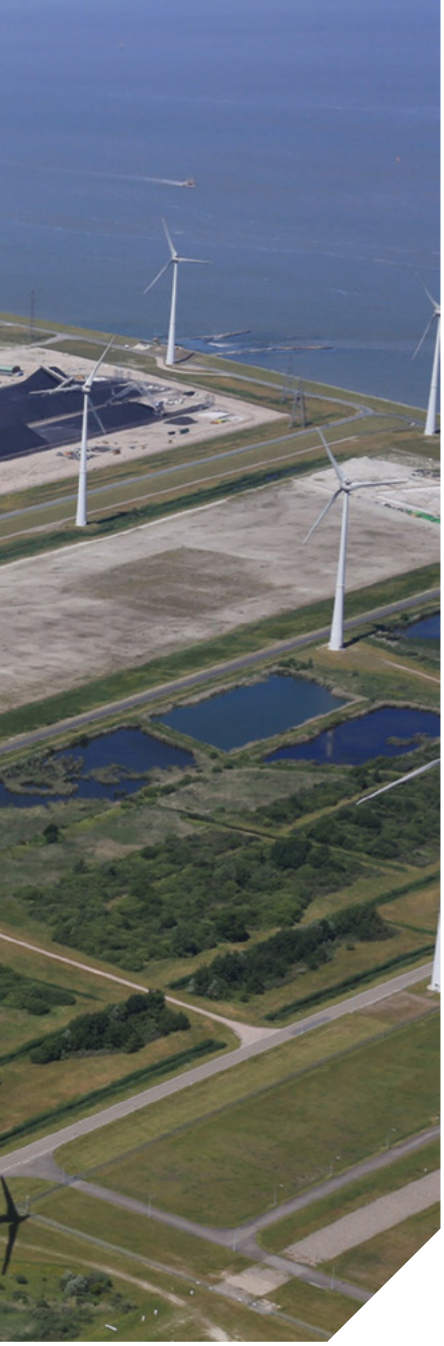


A collective nature compensation approach: the seaport ‘Eemshaven’

Roel Meeuwsen



In 2005 several large-scale developments were proposed for the seaport Eemshaven in the north of the Netherlands: an LNG terminal, power stations and economic activities related to offshore industry. The harbour and its navigable channel had to be widened and deepened in order to make this further growth possible. The parties proposing these activities carried out their environmental assessments separately and simultaneously. The NCEA advised on the scope of the environmental impact assessment reports. As a result of this involvement, the NCEA was able to request that special attention be paid to the cumulative impacts and to synergy in research and compensation. The proponents of the schemes then jointly drew up a nature compensation plan in order to compensate for the negative cumulative impacts in the area. This approach was highly effective and was implemented to the satisfaction of the government, the project proponents and the NCEA. This article describes the approach on cumulative effects and other issues dealt with in the environmental impact assessment reports.

Eemshaven and the Wadden Sea national marine park

Eemshaven is located in the north of the Netherlands, in the province of Groningen. It is the largest harbour in the north of the country. The province decided to create this North Sea port in the Eems estuary in 1968. In the first instance, the harbour was used for the transhipment of goods. Since 2000 there has been a big increase in the transhipment, and Eemshaven's role in the energy supply of the Netherlands has also become more important. The harbour and its grounds are administered by Groningen Seaports.
Eemshaven lies on the Wadden Sea, an area that is part of the mudflat coast and the North Sea. The Eemshaven harbour area consists of a central channel, the Doekegatkanaal, and four basins: the Beatrixhaven, Julianahaven, Emmahaven and Wilhelminahaven. The Wadden Sea is an important habitat for birds, common seals and grey seals. Its shallow, relatively warm waters and rich bottom fauna provide ideal conditions for large numbers of plants and animals. About 250 plant species are endemic to the Wadden Sea. Here, seals come to breed, fish to spawn and birds come to forage on worms and shellfish in preparation for their annual migration. Its role as a nursery and staging post means that the Wadden Sea is more than of local ecological value. Most of the Dutch Wadden Sea is protected nature reserve and has UNESCO biosphere reserve status.

"In its recommendations, the NCEA explicitly took account of the interrelationships of the various activities."

Developments in Eemshaven

For a long time, developments in Eemshaven were below expectations and the number of companies operating there remained limited. But in 2005, energy companies showed interest and this resulted in a large number of initiatives, the most important being plans for a multi-fuel power station by energy company NUON, an LNG terminal and a coal-fired power plant by energy company RWE. To enable these to be achieved, the harbour would have to be modified and the navigable channel to the North Sea widened and deepened, to provide access to the harbour for LNG tankers and coal carriers.

The development of these plans and the widening and deepening of the harbour meant that various decision-making procedures had to be followed, including an environmental impact assessment. Thus the energy companies and Groningen Seaports supported their requests for permits with an environmental impact assessment (EIA), including the associated mandatory studies on the impacts on nature according to the EU Habitat Directive. Groningen province (the competent authority) requested the NCEA to advise within the framework of these procedures.

The NCEA's recommendations

The NCEA gave recommendations on the Terms of Reference (ToRs) and it also reviewed the EIA reports on the quality of the information. The ToRs and draft EIA reports of the parties mentioned above, were each reviewed separately by the NCEA. However, in its recommendations, the NCEA explicitly took account of the interrelationships of the various activities: for example, in relation to the composition of the various committees and working groups, whenever possible the NCEA drew on the same advisers and chairpersons and the same body of knowledge (see box below).

The role of the NCEA in the Eemshaven projects

This article is based on knowledge and insights acquired while advising on four projects in Eemshaven between 2006 and 2009. The references to content relate to the findings and conclusions included by the NCEA in its advisory reports. At the start of the projects the NCEA advised on the design and content of the EIA reports. When the reports were completed, the NCEA reviewed them. The NCEA played no further formal role in the completion, finalisation and implementation of the Eemshaven compensation plan.

Terms of Reference for the environmental assessment

The main points in the NCEA's advisory report were that the environmental assessments should do the following:

- visualise the nature values in the plan area and the study area in both the construction phase and in the implementation phase;
- include the impacts on German nature reserves;
- describe the interrelatedness of the impacts of the various activities occurring in Eemshaven and the study area.

The NCEA also recommended discussing developments that could have negative impacts on the environment and investigating measures to prevent them. These included measures concerning:

- nuisance during construction work;
- the location of the cooling water intake and discharge;
- measures to limit emissions or purify air;
- the delivery and processing of raw materials;
- limiting light and noise nuisance;
- the processing of dredging sludge.

EIA reports

After carrying out the research on above mentioned subjects, the project proponents compiled them in their individual draft EIA reports and sent them to the NCEA for review. The main negative impacts described in all EIA reports during the construction phase were associated with pile-driving and dredging. The main negative impacts during the implementation phase related in particular to cooling water, disturbance from noise, light and movements in the area, turbidity of water, and water and air pollution.

Cumulative impacts

The studies did indeed show that during construction and operationalisation all the projects together (cumulation) could also cause negative impacts on nature. *Similar* impacts, such as air pollution, can be mutually reinforcing, but *different* environmental impacts also appear to have a cumulative impact on certain animal species and nature reserves. The combined impacts of turbidity, underwater noise *and* disturbance from light and shipping can have a negative impact on marine fauna, particularly mammals.

Impact of cooling water

The intake and discharge of cooling water results in negative impacts in the Wadden area. Fish are sucked in during cooling water intake and 70-90% do not survive. This impacts considerably on the fish fauna and hence indirectly on the food chain as well. In addition, discharges of cooling water warm up the water, which impacts negatively on the seaweed beds and would result in some migratory fish avoiding the area.

Impacts of air pollution

The power stations and also the dredging vessels used for enlarging and maintaining the navigable channel cause air pollution, which has negative impacts – for example, on the Wadden islands, dune areas and saltmarshes. These areas are already overburdened, with the result that the quality of their habitats is declining. The extra air pollution would result in further deterioration, which is undesirable.

"Groningen Seaports took the initiative to draw up a collective nature compensation plan for the various developments."

Initiative for a collective compensation plan

Groningen Seaports took the initiative to draw up a collective compensation plan for the various developments. The plan comprised measures to compensate for the negative impacts caused collectively. Beforehand, the NCEA had advised that the compensation should be sought not only in the area around Eemshaven but also to investigate whether the key ecological factors elsewhere within the Wadden Sea area could be improved. The plan was intended to sustainably improve the quality of damaged habitat types and species, such as birds, fish and marine mammals.

Review of the draft compensation plan

In the environmental impact assessment of the "deepening and extending of Eemshaven" by Groningen Seaports, the draft compensation plan was submitted to the NCEA for review. The plan included a temporary nature reserve of 28 hectares and a permanent nature reserve of 50 hectares in the Emmapolder, an agricultural area west of Eemshaven abutting onto the Wadden Sea, earmarked to be transformed into a nature reserve.

Compensation measures for (breeding) birds, marine mammals and fish

The NCEA observed that the conversion into a nature reserve offered prospects for compensating for the negative impacts on breeding birds. It recommended that the layout and management of the area be focused on the marine habitat types and species particularly experiencing the negative impacts.

The NCEA noted that the plan also contained effective measures to tackle the negative impacts on the food chain for marine mammals, fish and birds, particularly the optimisation of saltmarsh management and the restrictions to shrimp fishing in the Wadden Sea. This form of fishing is unfavourable for marine mammals, fish and birds because it disturbs the peace and stirs up the sea bed, as a result of which less food becomes available in the food chain. Restricting shrimp fishing could compensate for some of the negative impacts of the developments in the Eemshaven Seaport. Furthermore, research suggested that these measures would bring the greatest gains to wildlife.

Timeline for the most important developments in Eemshaven mentioned in this article

- 2006: start of the environmental assessment and ToR for advisory reports for the LNG terminal, power stations (NUON and RWE) and deepening of the harbour;
- 2007: review of the EIA + additional information from LNG, NUON and RWE;
- 2008: review of the EIA report + additional information on the harbour (including draft compensation plan);
- 2009: compensation plan submitted to the NCEA;
- 2010: compensation plan completed and set down in plans;
- 2010: decision not to build the LNG terminal;
- 2011: start of implementation of the compensation plan.

Elaboration of the compensation plan

The compensation plan has been implemented successfully. It regulates the compensation for the damage to the Wadden Sea, thereby making possible the planned activities such as the deepening of the harbour. A new nature reserve of 50 hectares has been created, where birds can rest and forage undisturbed. To compensate for the negative impacts on fish and marine mammals, the shrimp fishers have been bought out, thus allowing fish and marine mammals to develop better in this area. The compensation plan has also been incorporated in the Emmapolder land use plan of Eemsmond local authority. The energy companies initiating the power stations, together with Groningen Seaports, are part of a foundation which owns the new nature reserve and has been set up to manage Eemshaven nature compensation.

"A new nature reserve of 50 hectares has been created, where birds can rest and forage undisturbed."

Monitoring the impacts of the compensation plan

Finally, the parties concerned drew up a plan for monitoring the development of the compensation area. Cameras and observers keep an eye on the development of the fauna and flora. In addition, a feedback group has been set up, comprising representatives from the local authority, water board and the agricultural sector in the area. It also monitors the nature development and advises the foundation which, as already mentioned, manages the nature reserve in the Emmapolder.

See www.becausenatureisdeartous.nl for more information and results of the monitoring studies.

In conclusion

Construction of the Eemshaven developments started in 2011 and the agreements relating to nature development have now been fully implemented. The approach followed is a good example for projects in which compensation for nature is necessary in order to compensate for the negative impacts of large-scale developments. The umbrella approach in which individual and cumulative impacts of different initiating parties are addressed appears to be particularly valuable.

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