LETTER OF INTENT

Nature in offshore wind farms

Belgian Offshore Platform
Bond Beter Leefmilieu
Greenpeace Belgium
Natuurpunt vzw
WWF-Belgium

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Belgian Offshore Platform

The non-profit organisation Belgian Offshore Platform (BOP) is an association of investors and owners of wind farms on the Belgian North Sea. The BOP was founded in 2011 to advocate for the development of wind energy in the Belgian North Sea (BNS). Since the end of 2020, offshore wind energy has represented an installed capacity of 2262 MW and will produce approximately 8 TWh of green electricity annually, representing approximately 10% of the total electricity demand in Belgium. In 2018, a decision was made to double the amount of wind energy from the North Sea: an additional 2.1 GW of offshore wind capacity will be built in the Belgian North Sea in the coming years.

Bond Beter Leefmilieu, Greenpeace Belgium, Natuurpunt vzw and WWF-Belgium

join forces for nature and climate in the Belgian part of the North Sea, as '4Sea'.
Our common goals are:

1. In 2026, the BNS will contribute to the biodiversity and climate goals. This means that a good environmental status is achieved in the entire BNS, as described by the Marine Strategy Framework Directive (MSFD).
2. **30% of the BNS** is **effectively managed as a nature reserve** as prescribed by the Habitats and Birds Directives. In addition to a management plan, a plan of action with clear action points and budgeting has been prepared to be implemented by 2025.
3. In addition, a **marine reserve** is demarcated that makes up at least **10% of the BNS** and in which nature protection is the main goal (all extraction activities by humans are not permitted).
4. The BNS supplies a total of **4.4 GW of renewable energy in the demarcated wind zones** that are designed to be nature inclusive. The grid connection is optimised so that no superfluous infrastructure is built.

Wind energy in the North Sea: Beneficial for climate and nature

With this letter of intent, the Belgian Offshore Platform and 4Sea (Bond Beter Leefmilieu, Greenpeace Belgium, Natuurpunt vzw and WWF-Belgium) want to demonstrate how **the development of wind energy in the Belgian part of the North Sea (BNS) can be good for nature and climate**.

During the design, construction, operation and decommissioning of wind farms in the North Sea, the aim will always be to achieve the conservation objectives in Natura 2000 areas and a good environmental status in the BNS. In order to protect and strengthen the **biodiversity or other natural values as much as possible during the development of wind farms in the North Sea**, the following points are important:

- Start from the **basic condition** for nature from North Sea Vision 2050. Naturalness is defined as the scale and intensity at which living and non-living processes take place and are expressed in the ecosystem. Naturalness is the basic precondition that must be met to ensure social well-being today and in the future.
- Apply the principles of the EU Habitats Directive correctly. Conservation objectives are the benchmark. Anything that could jeopardise achieving the conservation objectives should be subject to an appropriate assessment. Wind farms in Natura 2000 areas are an exception and can only be developed under strict conditions, including the mandatory appropriate assessment, as stipulated in the Habitats Directive.
- Continue to invest in **scientific research and innovation** so that the risks for nature are minimised and the opportunities for nature are maximised.

- **Nature-inclusive designs** of new wind farm constructions are the norm. This means that the wind farm and its associated infrastructure mustmitigate negative effects as much as possible and, where possible, ensure positive effects for biodiversity or other natural values.
- In the event of phased tendering of developments outside, near and in Natura 2000 areas, it is important to consider building the wind farms in Natura 2000 areas last. In this way, the most recent scientific knowledge can be used to maximise the **opportunities for nature conservation and adaptive policy**.
- Future-proof renewable energy production: start a **dialogue** about the combination of improving natural values and renewable energy production, within a **circular approach**.

Purpose of this commitment statement

With this letter of intent, the initiators want to demonstrate how the development of wind energy in the Belgian part of the North Sea can contribute to both the European biodiversity and climate strategy.

With the Green Deal in 2019, Europe decided to become carbon neutral by 2050. Climate-friendly energy, such as offshore wind energy, is an essential pillar of this European climate policy. With the EU Offshore Strategy, published in November 2020, Europe has increased its targets for offshore wind energy. The National Climate and Energy Plan (NKEP) 2030 states that Belgium will develop at least 4 GW of offshore wind capacity by 2030. In the federal coalition agreement (October 2020) it was agreed that Belgium wants to continue to focus on wind energy at sea, among other things, in the context of the Green Deal by investigating whether additional climate-friendly and environmentally friendly capacity can be developed in the BNS, as well as outside the territorial waters, in cooperation with other countries located on the North Sea.

The national biodiversity strategy will also be brought into line with the European biodiversity strategy and the Green Deal (federal coalition agreement, October 2020). The European Biodiversity Strategy explicitly states that it will protect at least 30% of the sea by 2030 and to strictly protect at least a third of the protected areas, accounting for 10% of the sea in the EU. This is also in line with the proposed global ambition within the post-2020 global biodiversity framework. The most important nature and environment-related policy instruments are the European Marine Strategy Framework Directive, the Water Framework Directive, the Common Fisheries Policy and the Habitats and Birds Directive, in addition to the Belgian Marine Environment Act and the Belgian marine spatial plan. From a legal perspective, almost everything is available to effectively bring the ecosystem of the BNS into a good environmental status and the Natura 2000 areas into a good conservation status, provided that they are implemented effectively.

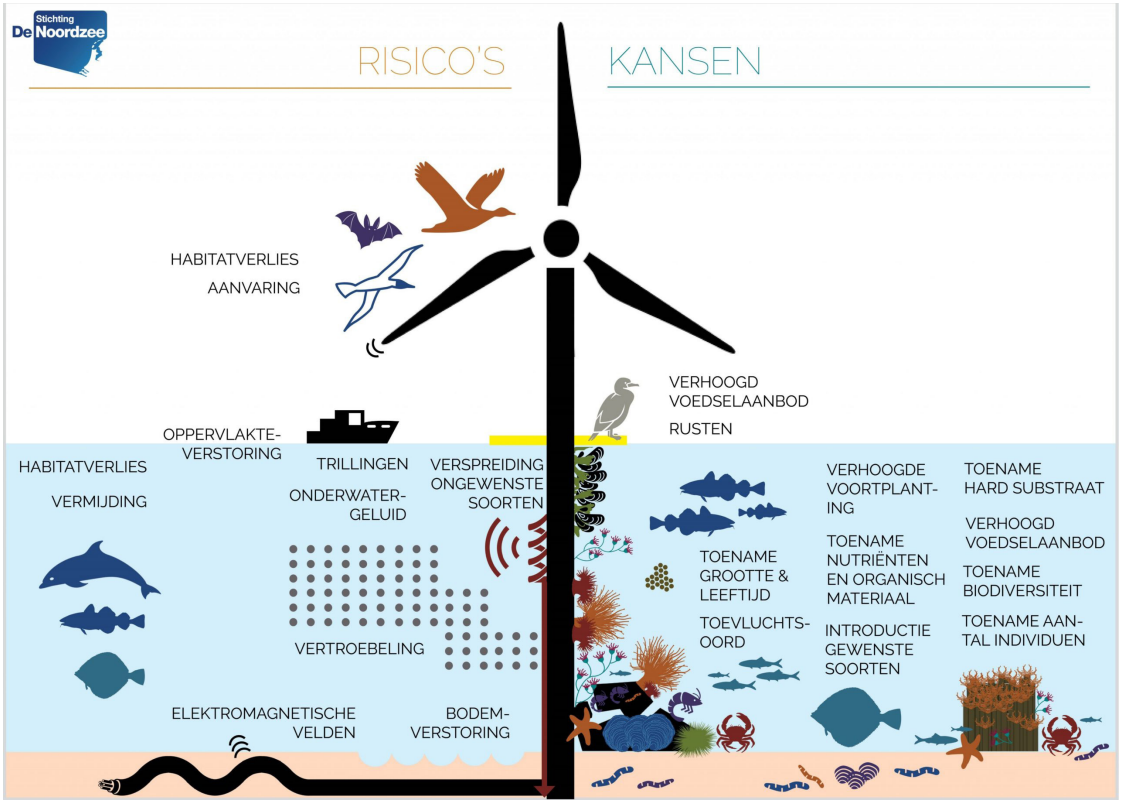
We jointly agree that nature conservation is a top priority in the design, construction, operation and decommissioning of the wind farms in the new offshore wind zones, which are largely located in the Natura 2000 area. In addition, we endorse the importance of halting the loss of biodiversity and of protecting and strengthening biodiversity or other natural habitats as much as possible in the further development of offshore wind energy. To this end, we jointly support that (1) in the current revision of the Marine Environment Act, space for North Sea nature can be effectively achieved in accordance with European regulations, and that (2) a marine reserve is demarcated in the Natura 2000 areas[1], which makes up at least 10% of the BPNS, in which nature conservation is the main goal and all extracting human activities are excluded. Based in part on the findings of more than 10 years of scientific research on existing wind farms (WinMon.BE 2020), we are convinced that further development of offshore wind energy can go hand in hand with the protection of the marine environment and marine biodiversity, provided that one starts from the biodiversity or other natural habitats to be protected.

Nature at the wind farms in the BNS

Offshore wind farms are a necessary prerequisite for achieving the climate goals. The existing wind farms in the BNS occupy an area of 238 km^2 for an installed capacity of 2.262 GW or 2262 MW of renewable energy.

In the Marine Spatial Plan II, in effect since March 20, 2020, an additional zone of 284 km^2 in the BNS has been delineated, as a result of which, the total wind energy capacity will increase to approximately 4.4 GW which can handle approximately 20% of the estimated Belgian electricity demand. The future offshore wind farms are largely located in the Habitats Directive area (Flemish Banks, Natura 2000 area), which benefit from special protection for nature.

Wind farms offer opportunities and risks for nature development and protection. This ratio of opportunities and risks is shown in Figure 1. Based on the environmental monitoring (WinMon.BE 2020) at existing wind farms, it was established that the effects are diverse and often specifically linked to whether or not fishing in wind farms[2] is excluded, and to locations, foundation types or even individual wind turbines. Wind farms can represent opportunities for nature by enhancing positive effects, such as the reef effect that attracts fish and increases biodiversity. This knowledge can be used to take measures to further promote biodiversity or other natural values within newly developed wind farms.



Figuur 1: Kansen en risico's van windparken voor natuurontwikkeling en -bescherming (Bron: Vrooman, J., Schild, G., Rodriguez, A.G., van Hest, F., 2018. Windparken op de Noordzee: kansen en risico's voor de natuur. Stichting De Noordzee, Utrecht)

1 - Marine reserves will preferably be demarcated outside the wind zones.
2 - Due to the dense location of the wind turbines in the area and the associated safety risks.

Strict environmental conditions have already been imposed on the existing wind farms, based on federal legislation for the protection of the marine environment, in order to avoid or mitigate the environmental risks as much as possible, especially during the construction phase.

General principles for nature protection and development in wind farms in the BNS

This declaration of intent focuses on the opportunities for nature in wind farms, outdoors, near and in Natura 2000 areas. We distinguish between opportunities for nature conservation and opportunities for nature development in the various phases of design, construction, operation and decommissioning.

Nature protection or nature conservation = active and/or passive restoration of biodiversity with the aim of restoring a balanced ecosystem.
Nature development or nature creation = new, additional nature (or to let it be developed).
For both purposes, it may be necessary to create suitable (living) conditions and/or to (re) introduce specific species.

More than 10 years of scientific research into wind farms (WinMon.BE 2020) shows that wind farms can contribute to nature development, but also that current wind farms do not automatically contribute to nature protection. Some positive contributions to biodiversity in and around the wind farms have already been observed, and the observed negative effects will be further mitigated as much as possible in order to contribute to further protecting nature in and around the wind farms.

When further developing wind farms in the BNS, the aim is to achieve the conservation objectives in Natura 2000 areas and a good environmental status in the BNS. This means that the habitat types that have historically existed are the substantive guideline for both active and passive restoration. With nature-inclusive design, construction, operation and decommissioning, the wind farms in the Natura 2000 area can contribute to the active and/or passive restoration of habitat types and can thus help to improve the natural state of the BPNS. To this end, nature protection should be included as a principle in the legislative and executive framework for wind farms.

For substantive recommendations on mitigation of the negative effects of wind farms in Natura 2000, we refer, among others, to the new studies carried out by the RBINS OD Nature, the results of which will be published in the course of 2022 and the existing WinMon reports (see here).

Nature-inclusive design of wind farms in the North Sea

The nature-inclusive design of wind farms takes place within a holistic vision of the marine ecosystem. Some crucial elements are:

1. *The placement of the wind turbines*
   To avoid the possible negative effects of the wind turbines on the habitats and biodiverse zones that need to be protected, a "nature-friendly layout" of the wind farms is required. The hydrodynamic effects of wind farms that arise (locally and on a wider scale) around the implantation sites must be taken into account. For example, it is important to keep the footprint of the wind farms as small as possible in the vicinity of vulnerable habitats.
2. *The design and choice of materials for the foundations and for the wind turbines*
   The WinMon reports show that certain types of foundations offer more opportunities for biodiversity or other nature value development than others. Foundations that offer the most opportunities are preferable to other foundation types. In addition, priority should be given to materials from and suitable for the circular economy.

3. *Protecting habitats and migratory routes of marine fauna*
   Based on insights from the environmental monitoring of offshore wind farms since 2008, offshore wind turbines or other installations at sea should be designed in such a way that birds, fish, marine mammals, and bats experience as little negative impact as possible during the construction, operation and decommissioning of the offshore wind farms. Migration routes and foraging, breeding and/or wintering areas for marine fauna should remain accessible. It is important that the collision of sea birds with wind turbines is prevented as much as possible.

4. *Noise protection*
   During the design, construction, operation and decommissioning of wind farms, the best available techniques must be used to avoid or mitigate noise pollution, including for marine mammals. The cumulative effect of noise from different maritime activities should not have a significant adverse effect on the species present. Knowledge about the impact of cumulative impulse noise, both from biological insights as well as technical improvements, needs to be further developed.

5. *Laying cables*
   Research into the effects of electromagnetic radiation on sharks, rays and bottom-dwelling invertebrates such as the North Sea crab, is still in its infancy, but will be further developed with regard to the construction of the new wind farms. The most recent scientific insights must be used to avoid or mitigate the effects of electromagnetic radiation in and around wind farms to a level acceptable for the various species.

The recent publication of Mrs. I. Prusina PhD, Mrs. A. Hermans MSc, O. G. Bos PhD, Nature-Inclusive Design: a catalogue for offshore wind infrastructure, 2020 with concrete examples of how the nature-inclusive design of wind farms can serve as inspiration for future wind farms.

Over the past ten years, the Belgian monitoring program WinMon has been carried out for the offshore wind farms in the Belgian part of the North Sea. The reports evaluate the magnitude of the expected effects of offshore wind farms on the marine ecosystem and try to uncover the processes behind these effects. Future research should continue in order to focus on understanding these effects so that we can further optimise the monitoring programs. A continuation of the current working method of WinMon, also in the new wind farms to be developed, will lead to optimal support for the policy and management of the further development of wind energy in both the Belgian part of the North Sea and in the entire North Sea, whereby biodiversity or other natural values are protected and enhanced as much as possible.

Circularity and continuity of wind energy in the North Sea

According to the legislation and the environmental permits, the wind farms must be decommissioned at the end of their lifespans (20 to max. 30 years). However, as the demolition of oil and gas platforms is not necessarily always the best option from an environmental or nature point of view, the complete decommissioning of the current wind farms could be at the expense of the restored or newly developed natural values in the concession zone.

To achieve both the European marine biodiversity and climate objectives, it is important to strive for continuity in both protecting and enhancing biodiversity or other natural values, and in the production of climate-friendly renewable energy. The zones for wind energy would be best ‘re-used’ for the production of renewable energy after the respective concession or permit terms of the various wind farms expire. For the design of future wind farms in the Natura 2000 zone, this means that conservation and continuity of the restored and developed biodiversity or other natural values in the wind farms is pursued when these future wind farms are redesigned. If adjustments and/or removal of installations nevertheless have to be made, the biodiversity or other natural values are preserved and strict environmental conditions apply to avoid or mitigate the environmental risks as much as possible.

It is recommended that, under the leadership of the competent authorities, a dialogue be started with all parties involved, including nature and environmental associations, marine scientists and the offshore wind sector, with the aim of focusing on combining protection and strengthening biodiversity or other natural values and renewable energy production, within a circular approach. It is important to build up knowledge about this in the short term so that future-proof foundations can now be designed.

Areas of concern for nature protection and development in wind farms in the BNS

Nature development in wind farms *outside* Natura 2000 areas

In wind farms outside Natura 2000 areas, maximum efforts are made for nature-inclusive design of wind farms, also in the context of circularity and continuity. For nature development in the existing wind farms, we are looking at the next "development phase". In 2039, the maximum lifespan of the first-built wind turbines will be reached, and it should be considered whether the site will be completely stripped and restored to its original state (which is now required by law) or not.

Nature development and conservation in wind farms *near* Natura 2000 areas

In wind farms near Natura 2000 zones, nature protection and development are focused on protecting the biodiversity of other natural habitats in the Natura 2000 areas, but it is not the main objective. Nevertheless, biodiversity and other natural habitat protection goals are taken into account when installing both the wind turbines and the cables.

Nature conservation in wind farms *in* Natura 2000 areas

Nature conservation is the focus in the Natura 2000 areas. Wind farms are only considered in Natura 2000 areas exceptionally and under strict conditions, including the mandatory appropriate assessment, as stipulated in the Habitats Directive. Wind farms must be built in such a way that they do not jeopardise the protection of the balance of the existing biodiversity. The restoration of biotopes is paramount. Priority is therefore given to the restoration of ecologically valuable habitats, i.e. gravel beds and sandbanks. Shellfish bank restoration in this area only takes place in function of nature restoration and therefore not regarding food supply. When installing wind turbines and cables it is important that a balance must be found between the optimal placement relative to sufficient energetic yield and the preservation of both the areas with the (remnants of the) natural gravel beds and in addition to the general protection of the marine environment.

Multiple use of space?

With regard to **multiple use of space in wind farms** outside, near and in Natura 2000 areas, we only mention in Table 1 the additional activities that are permitted in the new wind zones according to the marine spatial plan II (2020-2026). The meaning of the icons is shown in Table 2.

If we take aquaculture as an example, it means the following:

- In the wind farms outside the Natura 2000 area, it makes sense to use the space used by the wind farms multiple times, according to the principles of the North Sea Vision 2050, but without burdening the carrying capacity of the marine ecosystem. Extractive aquaculture is also always based on native species that do not require added nutritional and/or medicinal products and avoids increasing eutrophication of the marine environment (according to the objectives of the Marine Strategy Framework Directive). Aquaculture in wind farms must not be at the expense of the food supply of other (wild) marine fauna and flora.

- Multiple use of space is possible in a wind farm adjacent to a Natura 2000 area, subject to a favourable suitability assessment. For example, extractive aquaculture in the water column could be possible in combination with shellfish bank recovery on the bottom.
- In (the parts of) wind farms that are located within the boundaries of a Natura 2000 area, no further multiple use of space is possible in addition to the wind farms, unless the Natura 2000 site is in a good state of conservation. The appropriate assessment then provides a definitive answer. After all, the main function of the Natura 2000 area is nature protection.

Table 1: Multiple use of space in wind farms outside, near and in Natura 2000 areas. Only the additional activities that are permitted in the new wind zones according to the marine spatial plan II (2020-2026) are shown. The meaning of the icons is shown in Table 2.

	Wind farms outside Natura 2000	Wind farms near Natura 2000	Wind farms in Natura 2000
Nature protection or conservation (e.g. restoration of natural habitats such as gravel beds, sandbanks and shellfish beds)	✓	✓	✓
Soil integrity zones cfr. MRP II (depending on fishing restrictions)	✓	✓	✓
Nature-inclusive design	✓	✓	~
Nature development or nature creation (e.g. introduction of artificial hard substrates or reefs)	✓	~	✗
Aquaculture	✓	~	✗
Passive fishing	✓	~	✗
Other forms of energy (solar energy, wave energy, tidal energy…)	✓	~	✗
Cables and pipelines (for purposes other than offshore wind farms) Measuring poles	✓	~	✗
Measuring posts	✓	~	✗

Table 2: The meaning of the icons shown in Table 1.

✓	Multifunctional use in or near Natura 2000 may be difficult to reconcile with the 'nature protection' objective.
~	Multifunctional use near or in Natura 2000 not desirable because of the 'nature protection' objective. Appropriate assessment provides the answer.
✗	Multifunctional use near or in Natura 2000 not desirable because of the 'nature protection' objective. Appropriate assessment provides the answer.

Letter of intent from Belgian Offshore Platform (BOP) and Bond Beter Leefmilieu, Greenpeace Belgium, Natuurpunt vzw and WWF-Belgium (jointly as 4Sea), on nature in offshore wind farms.

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