

THE NORTH SEA WIND POWER HUB PROJECT: SOME INTERNATIONAL AND EU LAW ASPECTS

Frans Nelissen & Ana Costov¹

Abstract

In order to maximize the use of the energy potential of offshore wind in the North Sea, the North Sea Wind Power Hub project, co-designed jointly by Denmark, Germany and a Dutch consortium, aims to improve the electricity generation and transmission process by connecting offshore wind farms to the mainland through hubs. The latter, according to the consortium's plans, will be situated, *inter alia*, on artificial islands erected in the Doggersbank area of the North Sea. The present chapter will analyze the construction plans in light of some key international and EU legal instruments to assess the project's viability.

1 Introduction

Both of us know Martha as the passionate energy lawyer she is via the Groningen Centre for Energy Law and Sustainability (GCELS) and the Faculty of Law of the University of Groningen; be it as a dear colleague for over 20 years or as a student in her class, enrolled

¹ Prof. Dr. Frans A. Nelissen is a professor of international environmental law at the University of Groningen (f.a.nelissen@rug.nl). Ana Costov is an Account Executive at Energy & Climate practice at FleishmanHillard Europe and holds an LL.M. in Energy and Climate Law from the University of Groningen (ana.costov@fleishmaneuropa.com).

in the Energy and Climate Masters, which she both initiated and co-directed. We highly value her great contribution to Energy Law in general and to the Groningen Centre for Energy Law and Sustainability in particular and for this reason gladly contributed.

Our contribution builds on an earlier presentation given at the conference organized by Martha on the occasion of 10 years of Groningen Centre for Energy Law (today: Groningen Centre of Energy Law and Sustainability), ‘The North Sea as a Source of Sustainable Energy and Law.’² Nevertheless, while drawing inspiration from the said presentation, it relies predominantly on more recent materials, including, importantly, a progress report issued by the NSWPH consortium in May 2021.

One way to achieve the Paris Climate Agreement target of keeping the rise in global average temperature to well below 2°C above pre-industrial levels is by increasing the share of energy produced from renewable sources.³ For wind energy, notably the North Sea region has great potential. Over the past decade, the number of offshore wind projects in the North Sea expanded significantly, with Denmark’s innovative plan to construct an artificial energy island receiving approval earlier this year as the most recent example.⁴ However, to realize the full potential of the North Sea’s offshore wind energy, increased inter-State cooperation is required. One of the solutions proposed is the North Sea Wind Power Hub project (hereinafter, NSWPH)⁵ that constitutes a transnational approach to electricity generation, conversion, and transmission in the North Sea through connecting hubs in a coordinated network and includes plans for the construction of artificial islands, possibly also in the so-called Doggersbank area of the North Sea.⁶ The latter will be the focal point of this contribution. We will discuss some international and EU law aspects of this idea. In particular, relevant international instruments such as the United Nations Convention on the Law of the Sea (hereinafter, UNCLOS) and the Convention for the Protection of the Marine Environment of the North-East Atlantic (hereinafter, OSPAR Convention), as well as a number of EU Directives will be briefly analyzed.

2 The Hague, 8 December 2017, ‘The North Sea Wind Power Hub – Island, some legal aspects’, by Prof. Dr. F.A. Nelissen.

3 UN Framework Convention on Climate Change, Paris Agreement (signed 12 December 2015, entered into force 4 November 2016) UN Doc FCCC/CP/2015/L.9/Rev.1, art 2(1)(a).

4 Danish Energy Agency, ‘Denmark’s Energy Islands’ (ENS) <<https://ens.dk/en/our-responsibilities/wind-power/energy-islands/denmarks-energy-islands>> accessed 8 July 2021. Notably, Denmark’s recent energy island project is a national one and will be conducted independently of the NSWPH project.

5 North Sea Wind Power Hub, ‘Towards the First Hub-and-Spoke Project’ (NSWPH, May 2021) <<https://northseawindpowerhub.eu/knowledge/towards-the-first-hub-and-spoke-project>> (NSWPH) accessed 8 July 2021, 7.

6 *ibid* 8.

2 NSWPH: A Short Overview of the Project

The NSWPH is a proposed network of energy wind farms, which is currently being developed by a Consortium consisting of Dutch-German electricity tso TenneT, Dutch gas grid operator Gasunie, the Port of Rotterdam and the Danish tso Energinet. Offshore wind farms situated in the North Sea will be interconnected between each other and also connected to hubs, which are possibly situated on artificial sand islands.⁷ From there, the electricity generated will be transmitted to the mainland via undersea cables (spokes) linking the North Sea countries.⁸ Power-to-X technology will enable conversion of the electricity produced by the wind farms offshore into other renewable energy carriers, such as hydrogen, synthetic fuels and chemicals.⁹

The great potential of the NSWPH project towards facilitating energy transition has been recognized at EU level. In 2019 the NSWPH project was included in the European Commission's list of Projects of Common Interest (hereinafter, PCI).¹⁰ While the exact locations have not yet been established, the Doggersbank has been indicated as a potential area for the construction of a larger artificial sand island energy hub.¹¹ Located in the EEZ of the Netherlands, Germany, Denmark and the United Kingdom, the Doggersbank is the shallowest part of the North Sea¹², implying lower construction costs, while its strong winds will ensure high-energy yield.¹³

The following sections will briefly analyze the possibility of constructing artificial islands in the Doggersbank area under relevant international and EU legal instruments.

7 *ibid* 18; other types of hub foundations include a gravity-based structure, a caisson island, and a jacket foundation, all of which were deemed suitable for the purposes of the project. The exact foundation will largely depend on the location selected.

8 *ibid* 4.

9 *ibid* 19.

10 *ibid* 10.

11 News Direct, 'Dutch company plans to build world's largest offshore windfarm' (7 February 2018) <https://www.youtube.com/watch?v=_nxcMA_L8o4> accessed 29 August 2021. The area is referred to as Doggersbank in the Netherlands, Doggerbank in Germany and Dogger Bank in the UK. This chapter uses the term Doggersbank in reference to the whole of the area.

12 See Lucette Mascini, 'Increasingly larger wind turbines are conquering the North Sea' (*Innovation Origins*, 14 October 2020) <<https://innovationorigins.com/en/increasingly-larger-wind-turbines-are-conquering-the-north-sea/>> accessed 8 July 2021.

13 TenneT, 'North Sea Wind Power Hub' (19 November 2020) <https://www.youtube.com/watch?v=n3zHr_wXnAI> accessed 29 August 2021.

3 NSWPH under UNCLOS

UNCLOS 1982 is the primary international convention governing the rights and obligations of States at sea. As ‘the legal order of the Oceans’ it is also of importance for the construction of energy hubs in the EEZ of coastal States bordering the North Sea.¹⁴

3.1 Artificial Islands under UNCLOS

UNCLOS defines an island as a ‘naturally formed area of land, surrounded by water, which is above water at high tide.’¹⁵ Therefore, areas of land formed as a result of human intervention, such as, for instance, an artificial sand island foundation for an energy hub within the means of the NSWPH project, will not be considered an island under UNCLOS. Instead, they will most likely fall under the scope of Article 60 dealing with artificial islands, installations and structures within the so-called Exclusive Economic Zone (EEZ).¹⁶ However, UNCLOS does not define artificial islands. In the literature a common denominator is the absence of ‘naturally’; if read in conjunction with the definition of an ‘island’ under UNCLOS, an artificial island may be defined as ‘an area of land that is above water at high tide that is not naturally formed’.¹⁷ As such, artificial islands are seen as areas of land that share the same characteristics as natural islands with the exception of being artificially created. Therefore, sand islands that are planned to serve as foundations for energy hubs in the North Sea will likely qualify as artificial islands.

14 Jonathan I. Charney, ‘The Marine Environment and the 1982 United Nations Convention on the Law of the Sea’ *The International Lawyer*, Winter 1994, Vol. 28, No. 4 (Winter 1994), pp. 879-901.

15 United Nations Convention on the Law of the Sea (concluded 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3 (UNCLOS), art 121.

16 *ibid* art 60. See for definition of the EEZ art 55. The reason for not dealing with the territorial see here is that the Doggersbank area falls outside the territorial waters of the surrounding coastal states.

17 Alex G Oude Elferink, ‘Artificial Islands, Installations and Structures’ *The Max Planck Encyclopedia of Public International Law* (September 2013) <<https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e247?rskey=c6mRO6&result=1&prd=EPIL>> accessed 8 July 2021. See also Daniel Andreeff, ‘Legal Implications of China’s Land Reclamation Projects on the Spratley Islands’ (2015) 47 *New York University Journal of International Law and Politics* 855, 881-882 and AMJ Heijmans, ‘Artificial Islands and the Law of Nations’ (1974) 21 *Netherlands International Law Review* 139, 140.

3.2 Rights and Obligations of Coastal States with Regard to Artificial Islands

With regard to the rights of coastal States in the EEZ, Article 56 confirms ‘sovereign rights’ over a number of economic activities, including energy production from wind.¹⁸ Moreover, States have jurisdiction to ‘establish and use artificial islands, installations and structures’ in their EEZ.¹⁹ Coastal States also enjoy an exclusive right to construct, authorize and regulate the construction, operation and use of artificial islands as well as installations and structures for the purposes of conducting said economic activities.²⁰ Therefore, under UNCLOS, the State in the EEZ of which the construction will take place, will have exclusive sovereign rights over the infrastructure and its operation.

Regarding States’ obligations in the EEZ, Article 56 provides that the coastal State shall act in a manner compatible with the provisions of UNCLOS.²¹ This includes Part XII of the Convention dealing with protection and preservation of the marine environment. Given that construction of a large-scale project such as NSWPH is likely to have a significant impact on the marine environment, States, among others, would be obliged to conduct an environmental impact assessment.²²

Overall, the realization of the NSWPH project is possible under UNCLOS. However, there are environmental obligations, for instance, the obligation to conduct an EIA before the commencement of the construction.

4 NSWPH under the OSPAR Convention

The OSPAR Convention of 1992 guides inter-State cooperation on environmental protection in the North-East Atlantic against adverse impacts of human activities.²³ All of the North Sea countries are also Parties to the Convention. Recommendation 2003/3 encourages coastal State Parties to establish a network of Marine Protected Areas (hereinafter, MPAs) in order to conserve and protect species, habitats, ecosystems or ecologi-

18 Ibid (n 14), art 56(1)(a).

19 Ibid art 56(1)(b)(i).

20 Ibid art 60(1)(a).

21 Ibid art 56(2).

22 Ibid art 206.

23 Convention for the protection of the marine environment of the North-East Atlantic (concluded 22 September 1992, entered into force 25 March 1998) 2354 UNTS 67 (OSPAR Convention), Preamble and article 2(1).

cal processes of the marine environment.²⁴ Paragraph 3 of the Recommendation requires State Parties to report areas and develop a management plan for each area in accordance with the Guidelines document.²⁵ Germany, the Netherlands and the UK reported on the parts of the Doggersbank situated in their respective EEZs as MPAs under the OSPAR Convention.

According to the management guidelines, human activities, including, *inter alia*, construction of artificial islands and offshore wind farms need to be regulated under management plans supported by national legislation.²⁶ However, 'where Natura 2000 sites are also reported as OSPAR MPAs, Contracting Parties should be under no obligations to take any further action' as management plans for Natura 2000 sites are deemed to offer sufficient environmental protection.²⁷ As all three States nominated the Doggersbank as a Natura 2000 site, further addressed under Section 5, nothing under the OSPAR Convention precludes the construction of artificial islands, where a permit is obtained under the Habitats Directive.

5 NSWPH under EU law

According to the case law of the European Court of Justice, the general rule regarding the applicability of EU legislation to maritime areas is that EU law follows national jurisdiction.²⁸ Thus, EU legislation applies to the EEZ of Member States.²⁹ The present section will explore the prospect of realizing the NSWPH project in the Doggersbank area in light of three EU secondary legal instruments, namely, the Habitats Directive, the Strategic Environmental Assessment Directive (hereinafter, SEA Directive), and the Maritime Spa-

24 OSPAR Recommendation 2003/3 on a Network of Marine Protected Areas (2003) <www.ospar.org/convention/agreements?q=2003&t=32283&a=&s=#agreements-search> accessed 8 July 2021.

25 *ibid* paras 3(1) and 3(3). See also Guidelines for the Management of Marine Protected Areas in the OSPAR Maritime Area (2003) Agreement 2003/18 <www.ospar.org/convention/agreements?q=2003&t=32281&a=&s=#agreements-search> accessed 8 July 2021.

26 Guidelines (n 23), Table 1.

27 *ibid*, Appendix I.

28 Case C-37/00 *Herbert Weber v Universal Ogden Services Ltd* [2002] ECLI:EU:C:2002:122, paras 32 and 34; Case C-6/04 *Commission v United Kingdom (Habitats)* [2005] ECLI:EU:C:2005:626, paras 115, 117. See also Ceciel Nieuwenhout, 'Regulating Offshore Electricity Infrastructure in the North Sea: Towards a New Legal Framework' (PhD thesis, University of Groningen 2020), 55.

29 Jaap Waverijn and Ceciel Nieuwenhout, 'Swimming in ECJ Case Law: The Rocky Journey to EU Law Applicability in the Continental Shelf and Exclusive Economic Zone' (2019) 56 *Common Market Law Review* 1623, 1632; see also *Habitats* (n 26).

tial Planning Directive.³⁰ This choice of legislation is due to their applicability to the type of large-scale energy projects that the NSWPH represents, which means that its non-compliance with the rules and obligations laid down in the said legal instruments could jeopardize the success of the operation.

As such, the SEA process is similar to an Environmental Impact Assessment (hereinafter, EIA), which will also need to be undertaken under the EIA Directive. The difference lies with the fact that while the EIA Directive requires an assessment of the impacts of individual projects, the SEA Directive covers large-scale plans and programmes.³¹ With regard to the NSWPH implementation, the Directive will come into play at a later stage and, given the transnational nature of the project, will likely require inter-State consultation alongside the national one.³² Given this, the authors have decided to omit the EIA Directive from the scope of this chapter.

Another relevant instrument is the Marine Strategy Framework Directive, which aims to achieve a Good Environment Status (GES) in marine waters in the European Union, including the North Sea.³³ However, as the States' obligations under the Directive would coincide with the SEA and Habitats Directives, the former instrument is not addressed in detail.

5.1 Habitats Directive

The main objective of the Habitats Directive is to contribute towards 'ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora in the European territory of the Member States.'³⁴ This is done primarily through Member States designating 'Special Areas of Conservation' (hereinafter, SACs), for which management plans must be designed.³⁵ Importantly, where a project is determined to affect

30 While the Natura 2000 sites are designated under both the Habitats Directive and the Birds Directive, none of the countries designated the Doggersbank as a Special Area of Protection under the Birds Directive; hence, the focus will be placed on the Habitats Directive alone.

31 European Commission, 'Nature Protection and Environmental Impact Assessment' <https://ec.europa.eu/environment/legal/law/2/module_3_25.htm> accessed 30 December 2021. See also Nieuwenhout (n 27) 70.

32 SEA Directive (n 38) art 7.

33 Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) [2008] OJ L 164/19, arts 1(1) and 4(1).

34 Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora [1992] OJ L 206/7, art 2(1).

35 *ibid* arts 4(1) and 6(1).

the site negatively, it may nevertheless be executed where the following criteria are met: Firstly, there is no alternative solution to the project. Secondly, the project is to be carried out for imperative reasons of overriding public interest. Thirdly, Member States implementing the project shall take compensatory measures to ensure the overall coherence of Natura 2000 protection.³⁶

Both the Dutch Doggersbank and the German Doggerbank areas have been designated under the Habitats Directive as a sandbank slightly covered by sea water all the time, with several species placed under protection.³⁷ Because of this implementation of a large-scale project such as the NSWPH, which is likely to negatively impact the habitat and the protected species, the NSWPH requires an extensive assessment by national authorities. Regarding the first condition under the Habitats Directive, it is uncertain whether less environmentally harmful alternatives in the North Sea exist. So far, the Doggersbank has been mentioned as the sole site under consideration, primarily due to its favorable location in the shallowest part of the North Sea. With respect to the second condition, according to the Guidance document to the Habitats Directive issued by the Commission, the ‘imperative reasons of overriding public interest’ may include activities of economic nature having beneficial consequences of primary importance for the environment, which could be applicable to the NSWPH project, certainly in light of its PCI status indicating the recognition of its imperative importance for reaching the climate goals.³⁸

Finally, the ‘compensatory measures’ constitute ‘the last resort’ where a project having a negative impact on the habitat must nevertheless be carried out; their aim is to offset such impact.³⁹

Given the critical role that the NSWPH is predicted to play in reaching the Paris objectives and the fact that alternative locations with the same advantages as the Doggersbank area are not easy to find, it is likely that the Consortium will be allowed to proceed with the project. Moreover, it will not constitute the first human activity in the Doggersbank capable of negatively affecting the habitat. There are currently nine oil and gas drilling

³⁶ *ibid* art 6(4).

³⁷ European Environmental Agency, ‘Doggersbank’ <<https://eunis.eea.europa.eu/sites/NL2008001>> accessed 30 December 2021; European Environmental Agency, ‘Doggerbank’ <<https://eunis.eea.europa.eu/sites/DE1003301>> accessed 30 December 2021. Notably, Denmark has not designated its part of the area as a SAC under the Habitats Directive.

³⁸ Commission, ‘Guidance document on Article 6(4) of the ‘Habitats Directive’ 92/43/EEC’ (January 2007) <https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf> accessed 8 July 2021, 7.

³⁹ *ibid*, 11.

platforms installed in the area connected to the shore via cables and pipelines.⁴⁰ This suggests that a more environmentally friendly oriented project such as the NSWPH will likely receive an approval as well.

5.2 SEA Directive

The SEA Directive obliges Member States to carry out an assessment of plans and programmes, which are likely to have significant effects on the environment.⁴¹ As a rule, all programmes that require an assessment under the Habitats Directive will also have to comply with the SEA Directive.⁴² Accordingly, Member States have to submit a report underlining the potential effects that the programme will have on the environment; they also need to identify, describe and evaluate reasonable alternatives.⁴³ Furthermore, the report must be made available to the national authorities and the general public before the adoption of the plan or programme, and open for consultation.⁴⁴ The information included in the report, along with the results of the consultation procedure, shall be taken into account during the preparation of the project (and before its adoption).⁴⁵ Ultimately, even after the adoption of the programme, Member States remain obliged to monitor the implementation in order to identify the unanticipated negative impacts at an early stage and take appropriate action.⁴⁶

5.3 Maritime Spatial Planning Directive

The Maritime Spatial Planning Directive aims at promoting sustainable growth of maritime economies, sustainable development of marine areas and sustainable use of marine

40 'Doggersbank Activiteiten' (Rijkswaterstaat) <www.rwsnatura2000.nl/gebieden/eez/eez_gebied/sinformatie/doggersbank/db_activiteiten/default.aspx> accessed 8 July 2021.

41 Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment [2001] OJ L 197/30 (SEA Directive), art 1.

42 *ibid* art 3(2)(b).

43 *ibid* art 5(1).

44 *ibid* art 6.

45 *ibid* art 8.

46 *ibid* art 10(1).

resources.⁴⁷ It is relevant with regard to energy production offshore, the sustainable development of which is listed as one of the main objectives of the Directive.⁴⁸ In particular, Article 8 requires Member States to design maritime spatial plans and identify ‘the spatial and temporal distribution of relevant existing and future activities and uses’.⁴⁹ These activities include energy production from renewable sources and construction of related infrastructure.⁵⁰ Moreover, the Directive obliges bordering Member States, such as the North Sea countries, to cooperate to ensure the coherence and coordination of the spatial plans.⁵¹ Additionally, Member States must designate relevant national authorities to oversee the implementation of the Directive.⁵²

The relevance of the Directive to the NSWPH project is amplified given the large-scale nature of the project and its long-term character. Hence, it is essential to ensure that it is adopted in line with the Maritime Spatial Plan for the North Sea region and is in coordination with existing activities. While shipping and fisheries activities are relatively limited in the Doggersbank area, the oil and gas extraction projects remain ongoing.⁵³ Therefore, elaborate spatial planning is required, especially with regard to the construction of relevant infrastructure, but also cables and pipelines.

Overall, nothing under EU law seems to preclude the realization of the NSWPH project, albeit a number of management programmes and plans will have to be taken into account during the development stage. Most importantly, the project will need to satisfy the criteria laid down under the Habitats Directive. However, the operation of oil and gas extraction platforms in the Doggersbank area indicate that the Consortium is likely to receive the green light. Finally, EIAs and SEA will need to be conducted in order to ensure that the construction will not have a significant adverse impact on the marine environment of the North Sea.

6 Conclusion

The NSWPH project in the Doggersbank area of the North Sea is a perfect example of the subject matters surrounding energy transition Martha devoted her professional life to,

47 Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning [2014] OJ L 257/135, art 1(1).

48 *ibid* art 5(1).

49 *ibid* art 8(1) and (2).

50 *ibid* art 8(1) and (2).

51 *ibid* art 11(1).

52 *ibid* art 13(1).

53 Rijkswaterstaat (n 37).

and which brought her into the forefront of the International and Dutch Energy Law arena.

Ending our contribution, we recall that States will need to take precautionary measures and cooperate in order to ensure protection of the marine habitat in the Doggersbank area. The conclusion of our brief analysis of relevant international instruments would be that there is nothing to explicitly preclude the construction, as long as the mentioned environmental requirements are complied with.

While we examined some of the legal aspects that are already identifiable, a more detailed analysis will only be possible at a later stage; once more information regarding the project becomes available. Nevertheless, if realized, the NSWPH project is expected to make a valuable contribution to achieving the goals of the Paris Climate Agreement.