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The clash between biodiversity protection and renewable energy development in the European Union with reference to the Habitats and the Birds Directives

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Abstract

Two pivotal components of the EU's climate policy are the protection of biodiversity and the promotion of renewable energy sources (RES). However, those two policies might clash, since the implementation of RES projects has the potential to negatively impact biodiversity. Following a doctrinal approach to legal research, this study aims to examine how could RES promotion and biodiversity protection be reconciled, by analyzing their legal interplay under Article 6(3) and (4) of the Habitats Directive (HD). According to the former every project that is likely to have significant effects on a Natura 2000 site, is subject to an assessment and may be authorized only if it is established that it will not affect the integrity of Natura 2000 sites. According to the latter, projects that are proved to adversely affect Natura 2000 sites may still be authorized provided that certain conditions are met.

One of the issues identified is that the appropriate assessment procedure under Article 6(3) HD entails a very high standard of proof regarding the effects on protected sites, which may be unrealistic for certain RES projects, like novel and marine technologies. Moreover, the linkage between Articles 6(3) and (4) HD might result to the paradox of small-scale novel RES projects, with uncertain but probably limited impact on protected sites, not being authorized based on Article 6(3) HD and not being able to satisfy the conditions of Article 6(4) HD either, while large-scale novel RES projects, with uncertain but potentially extensive adverse effects on protected sites, would be authorized based on Article 6(4) HD. Those weaknesses could be averted by prioritizing the authorization of small- over large-scale RES projects characterized by uncertainty as to their effects on protected sites and imposing post-implementation continuous monitoring, data gathering and adaptation in the form of mitigating and compensatory measures.

Keywords: biodiversity, renewable energy, Natura 2000, Nature Directives, appropriate assessment procedure

Preface

Before you lies the dissertation “The clash between biodiversity protection and renewable energy development in the European Union with reference to the Habitats and the Birds Directives”, the basis of which is doctrinal legal research. It has been written to fulfill the graduation requirements of the MSc in Energy Law, Business, Regulation and Policy at the International Hellenic University (IHU). I was engaged in researching and writing this dissertation from February to June 2021.

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Natsouli Aikaterini

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Contents

Abbreviations

BD	Birds Directive
CBD	Convention on Biological Diversity
CCUS	carbon capture, utilization and storage
CJEU	Court of Justice of the European Union
Cop	Conference of the Parties
EAP	Environment Action Programme
EIA	Environmental Impact Assessment
EU	European Union
GW	Gigawatt
HD	Habitats Directive
IEA	International Energy Agency
NBSAPs	National Biodiversity Strategies or Action Plans
NECPs	National Energy and Climate Plans
NMSP	National Maritime Spatial Plans
PCI	Project of Common Interest
pSCI	Proposed Site of Community importance
RED I	Renewable Energy Directive 2009/28/EC on the promotion of the use of energy from renewable sources
RED II	Renewable Energy Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources
RES	Renewable Energy Sources
SAC	Special Area of Conservation
SCI	Site of Community Importance
SPA	Special Protection Area
TEN-E Regulation	Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure
TFEU	Treaty on the Functioning of the European Union

PART I

Introduction

CHAPTER I

The clash between biodiversity protection and renewable energy projects

In 11.12.2019 the Commission presented the European Green Deal, a roadmap of actions that has established the EU as the most ambitious leader in the international environmental arena, with the overarching aim to become the first climate neutral continent by 2050. The European Green Deal covers all sectors of the economy and aims at boosting the efficient use of resources, transitioning to a circular economy, achieving mitigation and adaptation to climate change, cutting pollution and reversing biodiversity loss. Two pivotal components of the European Green Deal are the EU Biodiversity Strategy to 2030 and the European Climate Law.[1]

On the one hand, the main EU legislative tools regulating biodiversity protection are the Birds[2] and Habitats Directives[3], which are jointly referred to as the Nature Directives. The Nature Directives established the Natura 2000 network, a network of protected sites that are considered important for biodiversity, which currently covers 17.9% of EU land and 9.7% of EU seas and pursuant to the EU Biodiversity Strategy to 2030 it is expected to cover at least 30% of EU land and 30% of EU sea in the near future. The Natura 2000 network influences project development in EU, since according to the Nature Directives every project - to be situated either inside or outside the network - that is likely to have significant effects on a protected site, is subject to an assessment and may be authorized only if it is established that it will not affect the integrity of the protected site.

On the other hand, the European Climate Law will enshrine into legislation the EU's commitment to reduce net emissions by 55% until 2030 and become climate neutral by 2050. Since the energy sector is responsible for more than 75% of the EU's greenhouse gas emissions, the focus regarding climate neutrality targets is on "greening" the energy sector, primarily by increasing the share of renewable energy in the EU energy mix.[4] The most important piece of legislation regarding renewable energy is the Renewable Energy Directive (RED II)[5], which sets the target of 32% of

[1] "The European Green Deal: The European Green Deal sets out how to make Europe the first climate-neutral continent by 2050, boosting the economy, improving people's health and quality of life, caring for nature, and leaving no one behind," European Commission, published December 11, 2019, https://ec.europa.eu/commission/presscorner/detail/en/ip_19_6691.

[2] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, OJ L 20.

[3] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206.

[4] "Energy: Renewable energy directive," European Commission, last modified May 20, 2021, https://ec.europa.eu/energy/topics/renewable-energy/renewable-energy-directive/overview_en.

[5] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (Text with EEA relevance.), PE/48/2018/REV/1, OJ L 328.

gross final energy consumption from RES by 2030, with the possibility to increase the target after a legislative proposal from the Commission submitted by 2023. The RED II will be revised in line with the objectives of the European Green Deal and a higher target on the share of RES in EU energy consumption will be set. This higher target is expected to result in a significant increase of the already rising number of RES projects, which translates into increased land and sea use for RES.

The promotion of RES, while being necessary to mitigate climate change, is not characterized by zero impact on ecosystems. The implementation of RES projects often results in habitat loss or degradation, habitat fragmentation, habitat change and increased mortality rates in some species (e.g. due to the collision of birds with wind turbines).[6] Therefore, RES projects have the potential to negatively impact biodiversity, which is also evident by the number of cases before the Court of Justice of the European Union (CJEU) involving a clash between RES projects and biodiversity protection. The expected increase of the Natura 2000 network coverage along with the expected increase of the RES projects implementation will result in even greater conflicts between RES projects and biodiversity protection. In that line, as Advocate General Tanchev has noted, it is of great importance to *"reconcile the […] increasing use of renewable energy sources […] and the protections afforded to habitats and species […] under the Birds and Habitats Directives"*.[7]

[6] For more information on the impact of RES on biodiversity see: Alexandros Gasparatos, Christopher N.H. Doll, Miguel Esteban, Abubakari Ahmed, Tabitha A. Olang, "Renewable energy and biodiversity: Implications for transitioning to a Green Economy," Renewable and Sustainable Energy Reviews, Volume 70 (April 2017) Pages 161-184, ISSN 1364-0321, https://doi.org/10.1016/j.rser.2016.08.030.

[7] Judgement of 25 July 2018, Grace and Sweetman, C-164/17, Opinion of Advocate General Tanchev, EU:C:2018:274, paragraph 6.

CHAPTER II

Purpose and methodology of the study

One of the most important mechanisms to achieve a balance between biodiversity protection and RES promotion, is the appropriate assessment procedure provided by the Habitats Directive and applying to sites protected under the Birds Directive as well. The appropriate assessment procedure is outlined in Article 6(3) and (4) of the Habitats Directive (HD). According to Article 6(3) HD any project that is likely to significantly affect a Natura 2000 site is subject to an appropriate assessment, which analyzes its effects on the site. The project may be authorized only if the appropriate assessment concludes that it will not adversely affect the integrity of the protected site. Article 6(4) HD provides for a derogation, since under this paragraph even projects that are found to have a negative impact on protected sites may be authorized, provided that three conditions are met: there are no alternative solutions, the project serves imperative reasons of overriding public interest and compensatory measures are adopted. In essence the appropriate assessment procedure attempts to strike a balance between biodiversity protection and project development, by allowing project developments in or near the Natura 2000 network only if there are no adverse effects on the integrity of the protected sites or if special circumstances justify the prioritization of project implementation over biodiversity protection.

The scope of this thesis is to analyze the implementation of the appropriate assessment procedure with particular regard to RES projects and examine the legal interplay between biodiversity protection and RES promotion. In that regard this thesis will also attempt to discuss the effectiveness of the appropriate assessment procedure, showcase potential weaknesses of the procedure and contemplate potential improvements that would avert the weaknesses identified.

Regarding the methodology of the dissertation a doctrinal approach to legal research is applied. The research is primarily based on a critical examination of case law on Article 6(3) and (4) HD and environmental legislation -mainly the Natures Directives. The research is secondarily based on the Commission's guidance documents on Article 6(3) and (4) HD, which despite being considered soft law instruments and therefore being not legally binding, provide further understanding of the appropriate assessment procedure and therefore have important explanatory value.

CHAPTER III

The European Union's biodiversity policy and the Natura 2000 network

The present chapter examines the EU policy and legislation regarding biodiversity, with the focus being on the Nature Directives and the Natura 2000 Network.

1. Biodiversity Policy

The EU Biodiversity Strategy to 2020

The most important international instrument for biodiversity protection is the Convention on Biological Diversity (CBD), which entered into force on 29.12.1993.[8] The three main objectives of the CBD are biodiversity conservation, sustainable use of the components of biodiversity and equitable sharing of the benefits of genetic resources utilization. Pursuant to Article 6 of the CBD, the parties have to draw up National Biodiversity Strategies or Action Plans (NBSAPs).[9] The EU is a party to the CBD since 21.03.1994 and adopted its first Biodiversity Strategy pursuant to Article 6 of the CBD in 1998, aiming at preventing and mitigating biodiversity loss.[10] Several years later, in May 2006, the Commission adopted a communication on "Halting Biodiversity Loss by 2010 – and Beyond: Sustaining ecosystem services for human well-being" and put forward the 2006 EU Biodiversity Action Plan.[11] The successor of those instruments was the Biodiversity Strategy to 2020, which was adopted in 2011, aiming at halting biodiversity loss by 2020.[12] The mid-term review of the Biodiversity Strategy to 2020, while noting a slight progress, concluded that the rate of implementation was highly insufficient and efforts needed to be considerably stepped up.[13]

The EU Biodiversity Strategy for 2030

In that line, on 20.05.2020 the Commission published the EU Biodiversity Strategy for 2030, which is the most recent and up to date EU instrument on biodiversity.[14] The EU Biodiversity Strategy for 2030 serves as the EU's contribution to the upcoming international negotiations at the Conference of the Parties (Cop) to the CBD[15] on the global post-2020 biodiversity framework and promotes an ambitious post-2020 global biodiversity strategy.

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[8] The Convention on Biological Diversity of 5 June 1992 (1760 U.N.T.S. 69).

[9] "Environment: The Convention on Biological Diversity," European Commission, accessed April 2, 2021, https://ec.europa.eu/environment/nature/biodiversity/international/cbd/index_en.htm.

[10] European Union: European Commission, Communication from the Commission to the Council and the European Parliament on a European Community biodiversity strategy COM(1998) 42 final, page 3.

[11] European Union: European Commission, Communication from the Commission - Halting the loss of biodiversity by 2010 - and beyond - Sustaining ecosystem services for human well-being, COM(2006) 0216 final.

[12] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee Of The Regions, Our life insurance, our natural capital: an EU biodiversity strategy to 2020, COM(2011) 0244 final.

[13] European Union: European Commission, Report from the Commission to the European Parliament and the Council, The mid-term review of the EU Biodiversity Strategy To 2020, COM(2015) 0478 final.

[14] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM(2020) 380 final.

[15] It was scheduled to take place from 15-28 October 2020, in China, but due to the COVID-19 pandemic the CoP was postponed twice and it is now scheduled to take place from 11-24 October 2021.

The EU Biodiversity Strategy for 2030 stresses the importance of biodiversity conservation for human activities and the interrelation between biodiversity and climate crisis, since the one exacerbates the other. The strategy is also linked to the fight against COVID-19 pandemic and future infectious disease outbreaks, since it is now established that the risk of future disease outbreaks increases as nature is destroyed. Moreover, the strategy is considered pivotal for the EU's economic recovery from the COVID-19 pandemic by providing business and investment opportunities. In the same line the European Green Deal as a whole will guide the EU's economic recovery, make it "greener" and ensure the EU's resilience against future crisis.[16]

The EU Biodiversity Strategy for 2030 sets as a milestone goal to set the EU's biodiversity on a path to recovery by 2030 and to achieve that it addresses the five main drivers of biodiversity loss: changes in land and sea use, overexploitation, pollution, invasive alien species[17] and most importantly climate change. One of the main objectives of the strategy is to establish protected areas for at least 30% of EU land and 30% of EU sea, with at least one third of protected areas strictly protected. Towards that direction an EU Nature Restoration Plan will be drawn up and legally binding restoration targets will be introduced in 2021.[18]

The strategy includes a number of pivotal aspects that are closely related to RES. More specifically, the strategy highlights the importance of RES for climate change mitigation and subsequently biodiversity protection and aims at rendering RES production more sustainable, by prioritizing ocean energy, offshore wind, solar-panel farms and sustainable bioenergy. Additionally, the strategy aims at restoring and protecting marine ecosystems. In that line it calls for full implementation of -among others- the Birds and Habitats Directives and mandates the Member States to deliver National Maritime Spatial Plans (NMSP) by 2021. The NMSP will cover all maritime sectors and activities and therefore they are crucial for the spatial planning of ocean energy and offshore wind.[19]

The 8th Environment Action Programme

Apart from the EU Biodiversity Strategy for 2030, the Commission presented on 14 October 2020 its proposal on the 8th Environment Action Programme (EAP), which

[16] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM(2020) 380 final, pages 1-3.

[17] Invasive Alien Species (IAS) are animals and plants that are introduced accidentally or deliberately into a natural environment where they are not normally found, with serious negative consequences for their new environment. They represent a major threat to native plants and animals in Europe, causing damage worth billions of Euros to the EU economy every year. (source: "Environment: Invasive Alien Species," European Commission, accessed on April 15, 2021, https://ec.europa.eu/environment/nature/invasivealien/index_en.htm).

[18] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM(2020) 380 final, pages 3-10, 12-14.

[19] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM(2020) 380 final, pages 10-12.

upon decision of the European Parliament and of the Council, will guide the EU environmental policy until 2030. The proposal for the 8th EAP is in line with the European Green Deal and biodiversity loss is one of the critical issues that are highlighted along with climate change mitigation and adaptation.[20]

The legal dimension of EU instruments

Regarding the legal dimension of the aforementioned instruments, it should be clarified that the European Green Deal and the EU Biodiversity Strategy for 2030 are Commission's communication, which is an instrument of EU soft law and consequently not legally binding. On the other hand, the EAPs, pursuant to Article 192(3) of the Treaty on the Functioning of the European Union (TFEU), are adopted under the ordinary legislative procedure and therefore are legally binding for the EU institutions.[21] However, the EAPs do not produce direct legal effects for Member States, since they do not incorporate any obligations for Member States, but merely provide the general EU policy environmental framework. It follows from the above considerations that such instruments are merely policy tools and they are not enough to achieve EU's environmental objectives since they lack two critical components: legally binding targets and obligations for Member States and enforceability. They need to be translated into legal measures in order to produce legally binding effects and towards that direction a multitude of EU Directives and Regulations are already and will continue to be under scrutiny, in order to be revised in line with the current EU environmental objectives, while new Directives and Regulations will also be introduced.[22]

2. The Nature Directives

The Birds and Habitats Directives

Nature and biodiversity are protected by several EU laws, which address invasive alien species,[23] wildlife trade,[24] the role of zoos in the conservation of biodiversity,[25] the

[20] European Union: European Commission, Proposal for a Decision of the European Parliament and of the Council on a General Union Environment Action Programme to 2030, COM(2020) 652 final, Article 2.

[21] Alicja Sikora, "European Green Deal – legal and financial challenges of the climate change," ERA Forum 21 (2021) Pages 681–697, https://doi.org/10.1007/s12027-020-00637-3.

[22] For more information on the EU legislative work and a detailed list of all upcoming legislative initiatives towards EU's environmental objectives see:
European Union: European Commission, Annex to the Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal, COM(2019) 640 final;
European Union: European Commission, Annex to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030, COM(2020) 380 final;
European Union: European Commission, Communication From The Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Commission, Work Programme 2021 A Union of vitality in a world of fragility, COM(2020) 690 final.

[23] Regulation (EU) No 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species, OJ L 317.

[24] Council Regulation (EEC) No 3254/91 of 4 November 1991 prohibiting the use of leghold traps in the Community and the introduction into the Community of pelts and manufactured goods of certain wild animal species originating in countries which catch them by means of leghold traps or trapping methods which do not meet international humane trapping standards, OJ L 308;

conservation of wild birds, flora, fauna and habitat types. The Birds Directive (BD) and the Habitats Directive are the cornerstone of the EU biodiversity policy. The Birds Directive was adopted in April 1979 and it was the first piece of EU legislation aiming at protecting nature and more specifically all wild bird species in the EU, which are currently more than 460, covering protection, management, control and exploitation of wild bird species.[26] The Habitats Directive, aiming at protecting biodiversity, was adopted in 1992. It protects more than 1000 animals and plant species, apart from wild bird species, and more than 200 habitat types and it also established the EU-wide Natura 2000 network.[27] The Nature Directives do not cover all plant and animal species in the EU, but they focus on a sub-set of around 2000 plant and animal species, which require protection in order to avoid extinction and achieve long term survival. They require Member States to not only prevent the deterioration of habitats and species, but also apply management measures to ensure that habitats and species are maintained at or restored to a favorable conservation status.[28]

On 16.12.2016 the Commission published the "Fitness Check" evaluation of the Nature Directives, which assessed their performance based on effectiveness, efficiency, relevance, coherence and EU added value. Overall, the "Fitness Check" evaluation concluded that the Nature Directives remain highly relevant and are fit for purpose within the EU biodiversity policy, but full achievement of their objectives depends on significant improvements in their effectiveness, efficiency and overall implementation.[29] Based on the findings of the Fitness Check the Commission put forward an Action Plan in 2017, which focused on improving the implementation of the Nature Directives through 15 actions to be carried out until 2019.[30]

The Commission's report on the status and trends of species and habitat types protected by the Nature Directives

Pursuant to Article 12 of the Birds Directive and Article 17 of the Habitats Directive, Member States are required to report to the Commission every 6 years on the conservation status and trends of the protected habitats and species. Pursuant to those articles and based on the most extensive data-gathering ever undertaken on the

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Regulation (EC) No 1007/2009 of the European Parliament and of the Council of 16 September 2009 on trade in seal products (Text with EEA relevance), OJ L 286;
Council Directive 83/129/EEC of 28 March 1983 concerning the importation into Member States of skins of certain seal pups and products derived therefrom, OJ L 91.

[25] Council Directive 1999/22/EC of 29 March 1999 relating to the keeping of wild animals in zoos, OJ L 94.

[26] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, OJ L 20, Article 1.

[27] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206, Article 2.

[28] Conservation status is regarded favorable when habitats and species are prospering and are expected to continue prospering in the future. (see Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206, Article 1 e and i).

[29] European Union: European Commission, Commission Staff Working Document Executive Summary of the Fitness check of the EU Nature Legislation (Birds and Habitats Directives) Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, SWD(2016) 473 final.

[30] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the committee of the Regions, An Action Plan for nature, people and the economy, COM(2017) 198 final.

state of nature in EU, the Commission published on 15.10.2020 a report on the status and trends in 2013-2018 of species and habitat types protected by the Nature Directives.[31]

An interesting point showcased by the report is that the terrestrial protected habitats account for almost one third of the terrestrial area of the EU, which equals to 1.3 million km^2. The marine protected areas cover only 0,4 million km^2. A relevant critical issue is the knowledge gap regarding marine habitats, since the status of 26% of them remains unknown, compared with only 4% for terrestrial habitats.[32] Marine species are characterized by the same knowledge gap identified in marine habitats. The status of 59% of marine species is unknow, compared with only 8% of terrestrial species, which indicates that the resources invested in monitoring marine species are highly insufficient.[33]

Regarding the pressures on habitats and species the most important one is agriculture, followed by the modification of hydrological regimes,[34] urbanization[35] and pollution. However, it should be noted that 48% of the pressures relating to pollution are attributed to agricultural activities. Hydropower installations are the most significant source of energy-related pressures for migratory and freshwater fish, while wind, wave and tidal power also act as pressures for many species. Moreover, birds were found to be very vulnerable to electricity and communication transmission infrastructures. The Commission notes in the report that while the promotion of RES is critical for climate change mitigation, inappropriately designed and located RES projects exert additional pressure on habitats and species.[36]

Overall, the Commission's report indicates that the EU has not yet managed to mitigate the deterioration of the status of habitats and species and therefore the targets set by the EU regarding biodiversity have not been met until today. This conclusion highlights the importance of the EU Biodiversity Strategy for 2030 and the need to step up the efforts and take urgent action towards achieving the goal of the strategy to set the EU's biodiversity on a path to recovery by 2030.

[31] European Union: European Commission, Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee, The state of nature in the European Union, Report on the status and trends in 2013 - 2018 of species and habitat types protected by the Birds and Habitats Directives, COM(2020) 635 final, page 1.

[32] European Union: European Commission, Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee, The state of nature in the European Union, Report on the status and trends in 2013 - 2018 of species and habitat types protected by the Birds and Habitats Directives, COM(2020) 635 final, pages 4-6.

[33] European Union: European Commission, Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee, The state of nature in the European Union, Report on the status and trends in 2013 - 2018 of species and habitat types protected by the Birds and Habitats Directives, COM(2020) 635 final, pages 6-8.

[34] e.g. agricultural drainage activities and hydropower installations.

[35] e.g. sports, tourism and leisure activities.

[36] European Union: European Commission, Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee, The state of nature in the European Union, Report on the status and trends in 2013 - 2018 of species and habitat types protected by the Birds and Habitats Directives, COM(2020) 635 final, pages 11-14.

3. The Natura 2000 network

The foundation stone of the protection scheme for habitats and species under the Nature Directives is the EU-wide Natura 2000 network, which is the largest coordinated network of protected areas in the world. It is established pursuant to Article 3(1) HD and it is made up of special areas of conservation (SACs) designated under the Habitats Directive and special protection areas (SPAs) designated under the Birds Directive. At the end of 2019 the network covered an area of 1.358.125 km^2 and more specifically 17.9% of the EU's terrestrial area and 9.7% of its marine area.[37] Moreover, while the terrestrial part of the Natura 2000 Network is generally complete, the marine part needs to be extended. More specifically, the EU Biodiversity Strategy for 2030 aims at increasing the terrestrial and marine part of the network by at least 4% and 19% respectively, in order to achieve coverage of at least 30% of EU land and 30% of EU sea, with at least one third of protected areas strictly protected.[38]

[37] European Union: European Commission, Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee, The state of nature in the European Union, Report on the status and trends in 2013 - 2018 of species and habitat types protected by the Birds and Habitats Directives, COM(2020) 635 final, page 17.

[38] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM(2020) 380 final, page 4.

CHAPTER IV

The European Union's renewable energy policy

This chapter examines the EU energy policy with a special regard on renewable energy policy. More specifically, the most important pieces of legislation on RES will be examined and the EU's targets regarding climate change mitigation and RES integration will also be discussed.

The EU's energy policy is legally based on Article 194 TFEU, according to which EU's energy policy aims at ensuring the functioning of the energy market; ensuring security of energy supply; promoting energy efficiency, energy saving and the development of renewable forms of energy; and promoting the interconnection of energy networks. It is notable that the promotion of RES is explicitly mentioned in Article 194 TFEU, which showcases the pivotal role of RES in the EU's energy policy.

The main EU legal instruments on RES

As EU strives for global leadership in RES production, several legislative initiatives have been adopted over the years to promote RES. The first critical legislative initiative was the adoption of Directive 2001/77/EC,[39] which established two key objectives: reaching 12% of gross final energy consumption from RES by 2010 and reaching 22,1% of electricity production from RES.[40] Subsequently, the Renewable Energy Directive 2009/28/EC (RED I) was adopted, which aimed at reaching 20% of gross final energy consumption from RES and a 10% share of energy from RES specifically in transport by 2020.[41]

In 2018 the Renewable Energy Directive (EU) 2018/2001 (RED II) was adopted, setting the target of 32% of gross final energy consumption from RES by 2030, with the possibility to increase the target after a legislative proposal from the Commission submitted by 2023. The RED II did not set binding targets for individual Member States, but established that the national targets set for 2020 should represent the minimum contribution of Member States for 2030 as well. Additionally, Member States were required to present the measures they would adopt to achieve their targets through integrated national energy and climate plans (NECPs).[42]

The European Green Deal set the base for even more ambitious targets regarding RES. It set a target of zero net emissions by 2050 and in that regard, in September 2020 the Commission proposed increasing the target of greenhouse gas emissions cut by 2030 and aim at a minimum of 55% cut. These targets will be enshrined into law

[39] Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market, OJ L 283.

[40] Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market, OJ L 283, Article 3.

[41] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance), OJ L 140, (RED I), Article 3 paragraphs 1 and 4.

[42] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (Text with EEA relevance.), PE/48/2018/REV/1, OJ L 328, Article 3(1).

through the European Climate Law, which was proposed by the Commission in March 2020[43] and provisionally agreed upon by the European Parliament and Council in April 2021.[44] The file is now expected to be formally adopted. The increased integration of RES, along with increased energy efficiency, plays a key role in achieving that target, since the energy sector amounts for around 75% of current greenhouse gas emissions.[45] Subsequently, the RED II is expected to be revised in the upcoming months and a higher target on the share of RES in EU energy consumption will be set.

Hydrogen

According to Article 2(1) of the RED II the term renewable energy covers *"energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas".* As the term "namely" suggests the forms of RES mentioned in the RED II are not exhaustive. Instead, the RED II allows for the inclusion of other forms of RES under its scope as well. A new form of renewable energy, which is expected to form an integral part of the effort to achieve climate neutrality by 2050, is hydrogen. Nowadays hydrogen is mainly produced through natural gas and therefore it is not considered renewable. However, it can also be produced from renewable energy through electrolysis. In that case it is considered renewable and it is expected to play a vital role in decarbonizing sectors, where electrification is not feasible or cost efficient, like transport and energy intensive industrial processes.[46] The Commission adopted a strategy on hydrogen on July 2020 and simultaneously the European Clean Hydrogen Alliance was launched aiming at the deployment of hydrogen technologies by 2030.[47]

The TEN-E Regulation

Another important piece of legislation is the Regulation on trans-European energy infrastructure (TEN-E Regulation), which promotes the interconnection of EU's energy networks, with a special regard on RES integration, through projects of common interest (PCI).[48] It is important to note that pursuant to Article 7 of the TEN-E Regulation, PCIs are considered as projects of overriding public interest under Article 6(4) HD provided that the other requirements set by Article 6(4) HD are also met. As it will elaborated in detail in the following chapter, Article 6(4) HD allows the implementation of projects despite their adverse effects on Natura 2000 sites, provided that there are no alternative solutions, there are imperative reasons of

[43] European Union: European Commission, Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law), COM/2020/80 final.

[44] European Union: European Commission, Press Release, "Commission welcomes provisional agreement on the European Climate Law", Brussels, 21 April 2021.

[45] International Energy Agency, Net Zero by 2050, A Roadmap for the Global Energy Sector (Paris, May 2021) page 13.

[46] "Energy: Hydrogen," European Commission, last modified 7 June, 2021, https://ec.europa.eu/energy/topics/energy-system-integration/hydrogen_en.

[47] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A hydrogen strategy for a climate-neutral Europe, COM(2020) 301 final.

[48] Regulation (EU) No 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009 Text with EEA relevance, OJ L 115, Recital 1, 7, 8 and 17 and Article 1.

overriding public interest and compensatory measures are adopted. Consequently, the TEN-E Regulation provides that PCIs inherently meet the second condition provided that the other two conditions are also met, thus facilitating the implementation of PCIs. The TEN-E Regulation will also be revised in line with the European Green Deal.

Further EU instruments on RES

Another critical step towards the promotion of RES and the achievement of climate neutrality by 2050 is the EU Strategy for Energy System Integration, presented by the Commission on July 2020. This strategy sets out the framework for the green energy transition, aiming at an energy system that operates as a whole and not in silos, which is the current model. This integration will be achieved through the increase of energy efficiency; the promotion of RES and the consequent electrification of end-use sectors; the promotion of clean fuels -including hydrogen- for sectors where electrifications is not feasible or cost-efficient; and the promotion of digitalization in energy systems.[49]

Moreover, on November 2020 the Commission published the EU strategy on offshore renewable energy, which encompasses energy technologies in different stages of maturity, with offshore bottom-fixed wind turbines being the only large commercial-scale technology available. Other technologies like floating wind, tidal, wave and floating solar energy, which are either at the stage of development or research, are also covered by the strategy. The current installed offshore wind capacity is 12 GW and the Commission aims at reaching at least 60 GW by 2030 and 300 GW by 2050.[50] The strategy explicitly notes that the development of offshore renewable energy should be compatible with biodiversity protection,[51] since the expansion of the marine Natura 2000 network and the increase of offshore renewable energy projects, will inevitably result in competition for marine space and conflicts. On May 2021 the Commission also adopted a new approach for a sustainable blue economy in the EU, with two of its core elements being the development of offshore renewable energy and biodiversity conservation.[52]

The IEA report

In May 2021 the International Energy Agency (IEA) issued a report -*Net Zero by 2050: A roadmap for the global energy system*- on how will the global energy sector achieve net-zero emissions by 2050, emphasizing that there is a gap between countries' rhetoric on net-zero emissions targets and relevant legislation and actions. The report calls for scaling up RES and promoting electrification across sectors, with 90% of

[49] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Powering a climate-neutral economy: An EU Strategy for Energy System Integration, COM(2020) 299 final.

[50] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, An EU Strategy to harness the potential of offshore renewable energy for a climate neutral future, COM(2020) 741 final, pages 1-4.

[51] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, An EU Strategy to harness the potential of offshore renewable energy for a climate neutral future, COM(2020) 741 final, pages 2 and 8.

[52] European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a new approach for a sustainable blue economy in the EU Transforming the EU's Blue Economy for a Sustainable Future, COM(2021) 240 final, pages 3 and 6-7.

electricity coming from RES and 70% of RES coming from wind and solar. Solar capacity is foreseen to increase 20-fold and wind power 11-fold until 2050. Moreover, the report calls for intensified innovation efforts by 2050, with an emphasis on battery storage, hydrogen and carbon capture, utilization and storage (CCUS). It foresees the equipment of ten heavy industrial plants with CCUS and the deployment of three new hydrogen-based industrial plants every month from 2030 onwards. Additionally, the report calls for the expansion of transmission and distribution grids, the deployment of around 20 battery gigafactories each year for the next ten years and a seven-fold growth of the market size of critical minerals like copper and cobalt by 2030, which translates into increased mining projects.[53] The 2020 World Energy Outlook[54] and the Global Energy Review 2021[55] have similar predictions.

The promotion of RES plays a pivotal role in mitigating climate change, but at the same time poses certain risks for biodiversity, since it may result in habitat loss or degradation, habitat fragmentation, habitat change and increased mortality rates in some species. The growing number of RES projects coupled with the expected increase of the Natura 2000 network coverage in line with the targets set by the European Green Deal will result in significant conflicts between biodiversity protection and RES promotion. Unequivocally prohibiting the implementation of RES projects in or near the Natura 2000 sites is considered disproportionately strict and would significantly hinder the achievement of EU's climate goals, while at the same time unequivocally allowing the development of RES projects in or near protected sites would put an unreasonably enormous burden on biodiversity. What is needed is a balance between biodiversity protection and RES promotion on EU level, so that the one does not disproportionately hinder the other.

One of the most important mechanisms to achieve that, is the appropriate assessment procedure provided by the Habitats Directive, applying to sites protected under the Birds Directive as well. Therefore, the balanced application of the appropriate assessment procedure is key in striking a balance between biodiversity protection and RES promotion.

[53] International Energy Agency, Net Zero by 2050, A Roadmap for the Global Energy Sector (Paris, May 2021) pages 13-25.

[54] "World Energy Outlook 2020: Report extract, Overview," International Energy Agency, accessed April 2, 2021, https://www.iea.org/reports/world-energy-outlook-2020?mode=overview.

[55] "Global Energy Review 2021: Overview," International Energy Agency, accessed April 2, 2021, https://www.iea.org/reports/global-energy-review-2021?mode=overview.

PART II

The appropriate assessment procedure under the Habitats Directive

The present part examines the interpretation and application of Article 6(3) HD, which is considered one of the most significant provisions of the Habitats Directive and this is also reflected in the abundance of relative CJEU rulings. According to this article plans and projects that are not directly connected with or necessary to the management of protected sites and are likely to significantly affect those sites, either individually or in combination with other plans or projects, are subject to an appropriate assessment. The appropriate assessment procedure clarifies the effects of the projects on the protected sites and their conservation objectives. In that line projects that are found to adversely affect the integrity of the protected sites may not be authorized, unless the conditions of Article 6(4) HD are met, which are discussed in Part III. This part will more specifically examine what triggers the appropriate assessment procedure, which developments are subject to the procedure, what the procedure involves and under which conditions may a project be authorized.

According to Article 7 HD, obligations arising under Article 6(2), (3) and (4) HD also apply to the SPAs designated pursuant to the Birds Directive. Consequently, the appropriate assessment procedure discussed in the present chapter covers SACs under the Habitats Directive and SPAs under the Birds Directive. It should be noted that, since Member States exercise sovereign rights in their exclusive economic zone, the obligations arising under the Nature Directives are also applicable in that area.[56]

[56] Judgment of 20 October 2005, Commission v United Kingdom, C-6/04, EU:C:2005:626, paragraph 117.

CHAPTER I
Definition of plans or projects

First and foremost, it is important to identify which activities constitute plans or projects according to Article 6(3) HD. The Habitats Directive clearly states that plans or projects directly connected with or necessary to the management of the site do not fall under the scope of Article 6(3) HD, but does not provide a definition of the plans or projects that do fall under its scope.

1. Definition of plans or projects on the basis of their nature

The CJEU in its case law has established the concept of plans or projects, but has not formed a clear definition. According to settled case law an activity that constitutes a project pursuant to the Directive 2011/92/EU (EIA Directive),[57] also falls under the category of plans or projects pursuant to the Habitats Directive.[58] According to Article 1(2) of the EIA Directive *"project means the execution of construction works or of other installations or schemes, and other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources".* However, according to case law the concepts of the two directives are not interchangeable as such and the definition provided by the EIA Directive is more restrictive.[59] Therefore, it is essential to further analyze the concept of plans or projects under the Habitats Directive.

Firstly, it should be noted, that while under the EIA Directive the concept project includes only activities that physically affect the natural surroundings, this is not the case under the Habitats Directive. Moreover, the definition of plans or projects under the Habitats Directive includes a consideration of the potential effects of an activity on a protected site. The CJEU has noted at the case Coöperatie Mobilisation that in order to determine whether a development may be classified as a project *"it is important to examine whether such activities are likely to have a significant effect on a protected site".*[60] Furthermore, the Court ruled that the activities under consideration may either be compatible with the conservation objectives of the protected sites or have a significant effect on those sites.[61]

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[57] Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (Text with EEA relevance), OJ L 26.

[58] E.g. Judgment of 7 September 2004, Waddenvereniging and Vogelsbeschermingvereniging, C-127/02, EU:C:2004:482, paragraph 24;
Judgment of 14 January 2010, Stadt Papenburg, C-226/08, EU:C:2010:10, paragraph 38;
Judgment of 7 November 2018, Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu, Joined Cases C-293/17 and C-294/17, EU:C:2018:882, paragraph 66;
See also Judgment of 7 November 2018, Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu, Joined Cases C-293/17 and C-294/17, Opinion of Advocate General Kokott, EU:C:2018:622, paragraphs 114–115.

[59] Judgment of 7 November 2018, Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu, Joined Cases C-293/17 and C-294/17, EU:C:2018:882, paragraphs 64–66.

[60] Judgment of 7 November 2018, Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu, Joined Cases C-293/17 and C-294/17, EU:C:2018:882, paragraph 67.
See also Judgment of 29 July 2019, Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen, C-411/17, EU:C:2019:622, paragraphs 137–139.

[61] Judgment of 7 November 2018, Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu, Joined Cases C-293/17 and C-294/17, EU:C:2018:882, paragraphs 70–73.

The CJEU further argued, that activities which do not constitute a physical intervention in the site -and therefore do not constitute a project within the meaning of Article 1(2)(a) of the EIA Directive- may also be classified as projects under the Habitats Directive. This means that for instance activities that emit sound which is likely to significantly affect a site, without constituting physical intervention, may be classified as projects.[62] It would seem that the Court attempted to define the notion of projects under the Habitats Directive and promote the independence of the concept among the two Directives.

In another case, Inter-Environnement Wallonie, the Court dealt with the issue of whether the extension of the period of industrial production of electricity in two nuclear power stations constitutes a project under the Habitats Directive. The Court ruled that the implementation of such an activity *"requires and would therefore inevitably be accompanied by substantial investment and major upgrading work"*. Therefore, the extension of the period of industrial production of electricity in the two nuclear power stations *"cannot be artificially dissociated from the work to which they are inextricably linked"* and *"it must therefore be held that such measures and the upgrading work inextricably linked thereto together constitute a single project"* within the meaning of Article 1(2)(a) of the EIA Directive.[63] Subsequently, Advocate General Kokott, following a reasoning similar to that in the case Coöperatie Mobilisation, argued that the relevant activity would constitute a project under the Habitats Directive even if it would not constitute a project under the EIA Directive, noting that the definition of projects under the EIA Directive does not definitively delimit the concept of project under Article 6(3) HD and the crucial factor is whether the activity concerned is likely to have a significant effect on a protected site.[64] Conversely, the CJEU ruled that the activity under consideration constitutes a project under the Habitats Directive due to the mere fact that it also constitutes a project under the EIA Directive.[65] In contrast to its reasoning at the case Coöperatie Mobilisation, the Court did not push to define the concept independently under the Habitats Directive without relying on the EIA Directive, by examining whether the activity would be defined as a project under the Habitats Directive even if it would not constitute a project under the EIA Directive.

It should also be noted that activities aiming to restore, upgrade, maintain or modernize existing projects, may also be classified as plans or projects under Article 6(3) HD, insofar they may have a significant effect on protected sites. The CJEU dealt with this issue in the case Commission v Ireland, where it ruled that it is common ground that maintenance works constitute a project under Article 6(3) HD.[66]

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[62] Judgment of 7 November 2018, Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu, Joined Cases C-293/17 and C-294/17, EU:C:2018:882, paragraphs 70–73.

[63] Judgment of 29 July 2019, Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen, C-411/17, EU:C:2019:622, paragraphs 61-71.

[64] Judgment of 29 July 2019, Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen, C-411/17, Opinion of Advocate General Kokott, EU:C:2018:972, paragraphs 170–174.

[65] Judgment of 29 July 2019, Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen, C-411/17, EU:C:2019:622, paragraphs 71 and 122-125.

[66] Judgment of 13 December 2007, Commission v Ireland, C-418/04, EU:C:2007:780, paragraphs 252-263 European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 65.

Interestingly, the Court at the case Commission v Belgium, ruled that Member States cannot restrictively define projects and exempt them from the appropriate assessment under article 6(3) HD, for instance on the basis that they are small-scale projects, insofar that *"even a small-scale project can have significant effects on the environment if it is in a location where the environmental factors, such as fauna and flora, soil, water, climate or cultural heritage, are sensitive to the slightest alteration".* Therefore, the Court ruled that Member States *"cannot assume that categories of plans or projects defined by reference to spheres of activity and special installations will, by definition, have a low impact on humans and on the environment".* The Court noted that pursuant to Article 6(3) HD the only ground for the exemption of a project from the appropriate assessment is the absence of significant effects on the site based on objective information.[67]

Similarly, the CJEU at the case Commission v France, ruled that *"works or developments provided for in Natura 2000 contracts can be categorized as plans or projects"* under Article 6(3) HD, since such contracts may set conservation or restoration targets for a site, but the developments under those contracts may nevertheless, not be directly connected with or necessary for the management of the site. In that line the Court argued that contracts that *"comply with the conservation objectives of sites cannot be regarded as sufficient, in the light of Article 6(3) HD, to allow the works and developments provided for in those contracts to be systematically exempt from the assessment of their implications for the sites".*[68]

2. Definition of plans or projects on the basis of their location

In the Inter-Environnement Wallonie case the Court also dealt with the issue of developments that geographically fall outside of the protected sites. Such developments may be classified as projects under Article 6(3) HD and be subjected to the appropriate assessment, insofar they may have a significant effect on protected sites. This is justified by the fact that it is very likely that projects outside of protected sites could still adversely affect the sites, when for instance a project is located upstream of a site and the site is affected as a result of water flow disruption, changes in sediment transport, pollution or barriers to species movement and migration.[69] At the Commission v Germany case despite the fact that the migratory fish were killed outside the area of the protected site, their reproduction was affected, therefore establishing a likely effect on the protected site.[70]

It is obvious that the decoupling of the probability of effects on protected sites and species from the distance between projects and protected sites provides a wide protection to the habitats and species protected and ensures the effective realization of the targets set by the Nature Directives. A typical example of RES developments that would be considered projects under Article 6(3) HD and be subjected to the appropriate assessment despite falling geographically outside the Natura 2000

[67] Judgment of 26 May 2011, Commission v Belgium, C-538/09, EU:C:2011:349, paragraphs 51-64.
[68] Judgment of 4 March 2010, Commission v France, C-241/08, EU:C:2010:114, paragraphs 44-56.
[69] Judgment of 29 July 2019, Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen, C-411/17, EU:C:2019:622, paragraphs 135-138;
see also Judgment of 10 January 2006, Commission v Germany, C-98/03, EU:C:2006:3, paragraphs 32 and 51.
[70] Judgment of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301, paragraphs 29-32.

network, are wind power plants placed in migratory routes of birds migrating to protected sites.

CHAPTER II
The screening stage

After having established that an activity constitutes a project under the Habitats Directive, the procedure set out in Article 6(3) HD is sequential and each step determines whether a further step is necessary. The steps are the following: the screening stage, the appropriate assessment and the authorization of the project.

According to the CJEU the procedure of the Article 6(3) HD is divided into two stages. The first stage, which is described in the first sentence of the article, constitutes *"the appropriate assessment of the implications for a protected site of a plan or project when there is a likelihood that the plan or project will have a significant effect on that site"*. The second stage, which is described in the second sentence of the article, *"allows such a plan or project to be authorised on condition that it will not adversely affect the integrity of the site concerned, subject to the provisions of Article 6(4)"*.[71]

In essence the first stage actually includes two stages: the screening stage and the appropriate assessment, with the former determining whether the latter must be carried out. More specifically, the screening stage includes determining whether a development constitutes a plan or project, whether it is directly connected with or necessary to the management of the site and subsequently whether it is likely to have a significant effect on a protected site, for instance by giving rise to loss of habitat type or species or by deteriorating such habitats and disturbing or decreasing the number of protected species.[72] If all questions are answered in the affirmative an appropriate assessment must be carried out. It should be noted that the notion of the screening stage is not explicitly mentioned in Article 6(3) HD, but it has been established by the Commission in its official guidance and has been explicitly used by the CJEU as a term only in one case.[73]

Regarding the essence of the screening stage the CJEU at the Waddenzee case held that the mere probability or risk that a project will have significant effects on a site triggers the appropriate assessment procedure and *"in the light […] of the precautionary principle, […] such a risk exists if it cannot be excluded on the basis of objective information that the plan or project will have significant effects on the site concerned"*.[74] Furthermore, the aforementioned significant effects on the site must be evaluated against the site's conservation objectives, as explicitly mentioned in Article 6(3) HD, and the characteristics and specific environmental conditions of the site concerned. Therefore, it is noteworthy, that if a project has an effect on the site, *"but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned"* and thus an appropriate assessment is not a prerequisite for the authorization of such a project. Conversely, if a project is likely to undermine the conservation objectives of a protected site, it must necessarily

[71] Judgment of 11 April 2013, Sweetman and Others, C-258/11, EU:C:2013:220, paragraphs 29 and 31.

[72] European Union: European Commission, Commission notice "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC", C(2018) 7621 final, page 35.

[73] European Union: European Commission, Commission notice "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC", C(2018) 7621 final, page 35;
Judgment of 12 April 2018, People Over Wind and Sweetman, C-323/17, EU:C:2018:244, paragraphs 27, 31, 36, 37 and 40.

[74] Judgment of 7 September 2004, Waddenvereniging and Vogelsbeschermingvereniging, C-127/02, EU:C:2004:482, paragraphs 41 and 43–44.

be considered likely to have a significant effect on the site.[75] The reasons on which the final decision on whether an appropriate assessment must be carried out is based should be recorded and the information supporting the final decision should be sufficient.[76]

Regarding the link between the probability of significant effects on the site and its conservation objectives, it should be noted that the Habitats Directive does not provide for an obligation of determining such conservation objectives or their scope. However, having explicit and measurable conservation objectives would facilitate the effective application of Article 6(3) HD. In that direction the Commission has issued a note, in order provide guidance to assist member states in setting conservation objectives for Natura 2000 sites.[77]

[75] Judgment of 7 September 2004, Waddenvereniging and Vogelsbeschermingvereniging, C-127/02, EU:C:2004:482, paragraphs 46–48;
See also Judgment of 7 November 2018, Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu, Joined Cases C-293/17 and C-294/17, EU:C:2018:882, paragraph 70;
European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) pages 66-68.

[76] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 68.

[77] European Union: European Commission, Commission note on setting conservation objectives for Natura 2000 sites (November 2012) pages 2-3.

CHAPTER III
The appropriate assessment

If the screening stage established that a plan or project is likely to have a significant effect on a protected site, conducting an appropriate assessment is a prerequisite for the authorization of the plan or project. The competent authorities may grant a permit for the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned.

The CJEU has established in its caselaw that *"an assessment made under Article 6(3) of the Habitats Directive cannot be regarded as appropriate if it contains gaps and lacks complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the SPA concerned".*[78] More specifically, the appropriate assessment must take into consideration all habitat types and species of a protected site and all matters relevant to them and result in *"complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects"* of a plan or project on a protected site. In that respect, the CJEU in its case Commission v Italy ruled that assessments containing gaps, like not taking into account all the wild birds present in a protected site, recommending additional environmental assessments and providing findings preliminary in nature, could not be considered appropriate assessments under Article 6(3) HD.[79]

1. The precautionary principle and scientific uncertainty within the appropriate assessment

Scientific uncertainty in EU environmental law goes hand in hand with the precautionary principle, since the mere existence of scientific uncertainty is what triggers the precautionary principle.[80] The CJEU in the landmark case Waddenzee, has noted that the precautionary principle is one of the foundations of the high level of protection pursued by Community policy on the environment.[81] As regards scientific uncertainty and the precautionary principle under Article 6 HD, it is established that the conclusions of the appropriate assessment on the effect of a plan or project, either individually or in combination with other projects, on the protected site must be based on the best scientific knowledge in the field.[82] Conversely, *"it cannot be held that an*

[78] Judgment of 20 September 2007, Commission v Italy, C-304/05, EU:C:2007:532, paragraph 69; Judgment of 24 November 2011, Commission v Spain, Case C-404/09 EU:C:2011:768, paragraph 100;
Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraph 50;
Judgment of 17 April 2018, Commission v Poland (Białowieża Forest), C-441/17, EU:C:2018:255, paragraph 114.

[79] Judgment of 20 September 2007, Commission v Italy, C-304/05, EU:C:2007:532, paragraphs 61-70;
See also European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) pages 69-70.

[80] Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), page 70.

[81] Judgment of 7 September 2004, Waddenvereniging and Vogelsbeschermingvereniging, C-127/02, EU:C:2004:482, paragraph 44.

[82] Judgment of 7 September 2004, Waddenvereniging and Vogelsbeschermingvereniging, C-127/02, EU:C:2004:482, para.54;
Judgment of 20 September 2007, Commission v Italy, C-304/05, EU:C:2007:532, paragraph 69;
Judgment of 24 November 2011, Commission v Spain, Case C-404/09 EU:C:2011:768, paragraph 99.

assessment is appropriate where information and reliable and updated data […] are lacking".[83] The CJEU has interpreted the precautionary principle under Article 6 HD in a way that a project may be authorized provided that in the light of the best scientific knowledge in the field, it is ascertained beyond all reasonable scientific doubt that it will not adversely affect the integrity of that site.[84]

However, removing all reasonable scientific doubt regarding causal relationships in nature is not always possible, since scientific uncertainty is inherent to all ecological risks.[85] A sound understanding of scientific uncertainty is essential, in order to properly apply the precautionary principle that is the base of the CJEU's stance on the issue and not to set unrealistic expectations for certainty that would cause tension to the burden of proof in the appropriate assessment and the relevant adjudicative procedures. This is especially the case regarding novel and offshore renewable energy technologies, where the available data to provide evidence of all possible effects on protected sites is limited. This is even more so regarding novel ocean renewable energy technologies. While the data available for terrestrial ecosystems are abundant and therefore causal relationships are well documented and understood by the scientific community, marine ecosystems are neither adequately documented nor understood, due to their fluctuations and inherent difficulties of monitoring and data collection, making impact assessments on marine ecosystems intrinsically complicated.[86]

The Irish Court of Appeal has adopted a different interpretation of the concept "best scientific knowledge" by ruling that it is the knowledge that is reasonably available.[87] Of course, this interpretation adopts a lower evidentiary threshold in comparison to the CJEU as regards the proof of absence of adverse effects, since it offers some leeway for projects for which the available data is limited (e.g., novel renewable energy technologies). However, it should be noted that the Irish Court of Appeal did not refer a question to the CJEU relating to the interpretation of the concept of "best scientific knowledge"[88] and therefore the question that remains is whether the CJEU would agree with such an interpretation.

An important issue to consider would also be a project that was authorized, because according to available data it was found not to adversely affect the integrity of a protected site, but consequently further data suggested otherwise. Of course, Article 6(2) HD would still apply, mandating the adoption of measures to avoid the deterioration of habitats and species, which of course could not go as far as

[83] Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, EU:C:2012:560, paragraph 115.

[84] Judgment of 7 September 2004, Waddenvereniging and Vogelsbeschermingvereniging, C-127/02, EU:C:2004:482, paragraph 61.

[85] Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), page 66.

[86] Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), pages 64-66;
For practical examples of scientific uncertainty in environmental assessments of offshore wind farms see Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), pages 88-97 and for practical examples of scientific uncertainty in the ocean renewable energy sector pages 97-100.

[87] Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), pages 174-175.

[88] Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), pages 174-175.

decommissioning the project. Other measures, both mitigating and compensatory, could be adopted, which suggests that an adaptive management framework would be a workable solution in such circumstances.

2. The timing of the appropriate assessment

Furthermore, the CJEU has established that the appropriate assessment itself and the collection of the relevant data must take place before the authorization and realization of a plan or project, noting that *"it is at the time of adoption of the decision authorizing implementation of the project that there must be no reasonable scientific doubt remaining as to the absence of adverse effects on the integrity of the site in question".*[89] Interestingly however, the CJEU has ruled that a competent authority may authorize a plan or project, while leaving *"the developer free to determine later certain parameters relating to the construction phase […]",*[90] as long as the competent authority has ascertained that the authorization sets *"conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site"*. Of course, this requires having evaluated those parameters and their effects on the protected site within the appropriate assessment.[91]

3. The method for conducting the appropriate assessment

As the CJEU has also noted, Article 6(3) HD does not outline a method for conducting the appropriate assessment[92] or a list of issues to be evaluated and analyzed. The Commission has shed some light on the minimum content requirements of the appropriate assessment through its guidance documents. More specifically, the appropriate assessment should in particular describe in detail the project, clarifying its size, scale and objectives; recite the conservation objectives of the protected site in question; mention all the potential effects on the protected site; assess the interplay between the characteristics of the project and the ecological characteristics of the habitat types and species for which the site was designated, in order to identify the effects of the project on the site and their magnitude; describe ways to avoid or mitigate -if possible- the effects identified; provide a trajectory of implementation and monitoring of the mitigating measures; and cite all sources of information.

Moreover, the data collection must be robust and long lasting, in order to take into consideration the fluctuation of ecological conditions through seasons and years. The subsequent identification and evaluation of adverse effects involves analyzing which protected habitats and types are affected and what is the type, extent, duration, intensity and timing of the impact. Furthermore, the evaluation of the effects on the site should take into account all aspects of the project (e.g., not only the wind turbines, but also the new access roads). Simultaneously, it should be taken into consideration that the effects on the site may arise in any of the phases of the project development,

[89] Judgment of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301, paragraph 42; Judgment of 26 October 2006, Commission v Portugal, C-239/04, EU:C:2006:665, paragraph 24; Judgment of 29 January 2004, Commission v Austria, C-209/02, EU:C:2004:61, paragraph 26; Judgment of 11 April 2013, Sweetman and Others, C-258/11, EU:C:2013:220, paragraph 28; Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraph 43.

[90] In that case those parameters related to the location of the construction compound and haul routes.

[91] Judgment of 7 November 2018, Holohan and Others, C‑461/17, EU:C:2018:883, paragraphs 41-47.

[92] Judgment of 20 September 2007, Commission v Italy, C-304/05, EU:C:2007:532, paragraph 57.

from initial construction to operation and management and on to re-powering or decommissioning.[93]

The evaluation of the adverse effects includes determining their significance. According to the Commission's guidance documents this is done based on several parameters. Firstly, quantitative parameters should be taken into consideration, for instance the extent of the habitat loss. It should be noted that the quantitative parameters will be evaluated on a case-by-case basis, since a very small habitat loss could be deemed significant for a certain site (e.g., for priority species and habitat types), while for other sites the same habitat loss could be taken as being not significant. Secondly, qualitative parameters should be taken into account independently of quantitative parameters. A typical example of an issue qualitative in nature is a site being the only one in a country with a target feature, albeit in abundance. Thirdly, an important point of consideration when assessing the significance of the identified effects is the importance of the site for species' biology (e.g., as a breeding site or migration route).

The wording of Article 6(3) HD, while noting that the competent authorities may authorize a plan or project only after having ascertained that it will not adversely affect the integrity of the site, does not clarify who should carry out the appropriate assessment procedure. According to the Commission's guidance documents and the CJEU case law the appropriate assessment is carried out by the project proponent, who therefore has to ensure that the appropriate assessment provides complete, precise and definitive findings and conclusions and has the burden of proving that the plan or project will not adversely affect the integrity of the site. However, the competent authorities are the ones liable for assessing the data provided and ascertaining that the appropriate assessment is in fact complete and precise and that its conclusions on the effects on the site are correct.[94]

4. Assessing the cumulative effects of projects within the appropriate assessment

According to Article 6(3) HD the assessment of a plan or project must take into consideration the potential cumulative effects on the protected site of the project under assessment and other projects. According to the Commission's guidance documents the assessment of cumulative effects is an integral part of the overall appropriate assessment and should not be viewed as a secondary issue.[95]

The consideration of cumulative effects includes projects that were authorized or commissioned even before the date of transposition of the Habitats Directive.[96] This means that even though an appropriate assessment was not carried out for a project

[93] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) pages 70-74.

[94] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 70;
See also Judgment of 7 November 2018, Holohan and Others, C‑461/17, EU:C:2018:883, paragraphs 43-45.

[95] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) pages 75-76.

[96] Judgment of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301, paragraphs 60-62;
Judgment of 7 September 2004, Waddenvereniging and Vogelsbeschermingvereniging, C-127/02, EU:C:2004:482, paragraphs 52-54.

preceding the adoption of the Habitats Directive, it must still be taken into account within the appropriate assessment of other projects. Therefore, it could be argued that projects that were not subjected to an appropriate assessment, because at the screening stage it was established that they were not likely to have a significant effect on a protected site, should similarly be taken into consideration within the screening stage and the appropriate assessment procedure of other projects. If this was not the case, there would be the risk of the "death by a thousand cuts" phenomenon. This is also suggested by the CJEU's case law on the EIA Directive, which - as already mentioned above- has oftentimes being utilized to facilitate the interpretation of the Habitats Directive.[97] In that line the CJEU has established in its case law on the EIA Directive that *"the purpose of the EIA Directive cannot be circumvented by the splitting of projects and the failure to take account of the cumulative effect of several projects must not mean in practice that they all escape the obligation to carry out an assessment when, taken together, they are likely to have significant effects on the environment within the meaning of Article 2(1) of the EIA Directive"*.[98]

However, it should be noted that if the application for authorization for the installation and operation of a project has no prospect of succeeding due to legal issues, such a project should not be taken into account when assessing the cumulative effects of projects.[99] Moreover, according to the Commission's guidance documents, the consideration of a project should not create the presumption that other similar projects that might be proposed in the future will be viewed favorably. On the contrary, the approval of projects in or near a protected site may lower the ecological threshold for future projects.[100]

It should be noted that the evaluation of cumulative effects constitutes a challenge for project proponents, especially when it comes to novel renewable energy technologies, where assessing the effects of projects even individually is challenging in itself, as already mentioned above.

[97] See above on using EIA for the interpretation of the term plans or projects.

[98] Judgment of 21 September 1999, Commission v Ireland, C-392/96, EU:C:1999:431, paragraphs 76, 82; Judgment of 25 July 2008, Ecologistas en Acción-CODA, C-142/07, EU:C:2008:445, paragraph 44; Judgment of 10 December 2009, Umweltanwalt von Kärnten, C-205/08, EU:C:2009:767, paragraph 53.

[99] Judgment of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301, paragraphs 4-67.

[100] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 75.

CHAPTER IV
Mitigating measures within the appropriate assessment

Within the appropriate assessment procedure pursuant to Article 6(3) HD certain measures, the so called "mitigating measures", can be taken into consideration. Mitigating measures are considered those that minimize the effects of a plan or project on a protected site. Notwithstanding that the term "mitigating measures" is not mentioned in the Habitats Directive or the Birds Directive, it has been used as a notion by national courts and the CJEU has established through its case law the scope of mitigating measures. The purpose of this chapter is to discuss CJEU's case law on what kind of measures constitute mitigating measures, how they differ from the compensatory measures mentioned in Article 6(4) HD and whether they can be taken into account within the appropriate assessment under Article 6(3) HD.

1. The use of the term "mitigating measures"

In the case People Over Wind and Sweetman the parties of the case referred to the measures as both "mitigating" and "protective", but the Court underlined that the Habitats Directive contains no reference to any concept of mitigating measures and referred to them as *"measures that are intended to avoid or reduce the harmful effects of the envisaged project on the site concerned".*[101]

It should be noted that the CJEU has established in its case law three categories of measures, namely conservation measures, preventive measures and compensatory measures, provided for in Article 6(1), (2) and (4) HD respectively.[102] At the same time the Court has reiterated time and again that the Habitats Directive does not contain any reference to "mitigating measures".[103] However, the concept is continually used by referring courts and also by the Commission in its guidance documents.[104] The CJEU referred to the concept of "protective measures" in the cases Briels and Others and Orleans and Others, but in more recent cases it seems to have abandoned this term, since it is used only twice.[105] The Court mostly refers to them using the phrase measures that are "intended to *avoid or reduce any direct adverse effects that may be caused by the project"* or similar phrases,[106] without consistently establishing another term.

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[101] Judgment of 12 April 2018, People Over Wind and Sweetman, C-323/17, EU:C:2018:244, paragraph 26.

[102] Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraph 33;
Judgment of 12 April 2018, People Over Wind and Sweetman, C-323/17, EU:C:2018:244, paragraph 25.

[103] Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraph 25.

[104] See e.g. European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018);
European Union: European Commission, Commission notice Guidance document on wind energy developments and EU nature legislation, C(2020) 7730 final;
European Union: European Commission, Commission notice "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC", C(2018) 7621 final.

[105] Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraphs 26 and 47.

[106] Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraph 47;
Judgment of 12 April 2018, People Over Wind and Sweetman, C-323/17, EU:C:2018:244, paragraph 26;
Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraph 54.

2. The differentiation between mitigating and compensatory measures

The CJEU commented on mitigating measures for the first time in the cases Briels and Others and Orleans and Others. Both cases dealt with the issue of taking into consideration future benefits of a project on a protected site within the appropriate assessment, so that such benefits mitigate the adverse effects that the project has on the protected site.[107]

The first case related to a motorway project, including inter alia the widening of that motorway, which was authorized despite the fact that it was concluded to have adverse effects on a protected site hosting a non-priority habitat type on the basis that a larger habitat area of higher quality would be created in another part of the same site.[108] The second case related to the development of a large part of the port, which was authorized despite the fact that it was concluded to have adverse effects on a protected site, on the basis that the project provided for the creation of a habitat of the same type in the future.[109]

The CJEU ruled in both cases that the measures introduced by the competent authorities as mitigating measures were in essence compensatory measures, since they did not aim *"either at avoiding or reducing the significant adverse effects"* on the site, but they rather compensated for those adverse effects. Therefore, such measures cannot be taken into account at the procedural stage provided for in Article 6(3) HD. The Court also noted that such measures aiming at compensating for the habitat loss through the creation of a new habitat, cannot be taken into consideration in the appropriate assessment procedure for the additional reason, that they are *"highly difficult to forecast with any degree of certainty and, in any event, will be visible only several years into the future".*[110] Moreover the Court held that *"the effectiveness of the protective measures provided for in Article 6 of the Habitats Directive is intended to avoid a situation where competent national authorities allow so-called 'mitigating' measures – which are in reality compensatory measures – in order to circumvent the specific procedures provided for in Article 6(3) and authorize projects which adversely affect the integrity of the site concerned".*[111] The CJEU further noted that such measures can be characterized as "compensatory measures" and be taken into consideration under Article 6(4) HD, as discussed in the Part III.[112] Thus if compensatory measures were rightfully taken into consideration at the appropriate assessment procedure provided for in Article 6(3) HD the purpose of both paragraphs 3 and 4 of Article 6 HD would be partly defeated.

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[107] Judgment of 15 May 2014, Briels and Others, C-521/12, EU:C:2014:330, paragraphs 17 and 18;
Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraphs 28 and 30.

[108] Judgment of 15 May 2014, Briels and Others, C-521/12, EU:C:2014:330, paragraphs 9-13.

[109] Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraphs 11-21.

[110] Judgment of 15 May 2014, Briels and Others, C-521/12, EU:C:2014:330, paragraphs 31-32 and 39;
Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraphs 48-52, 56 and 59.

[111] Judgment of 15 May 2014, Briels and Others, C-521/12, EU:C:2014:330, paragraph 33;
See also Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraph 58.

[112] Judgment of 15 May 2014, Briels and Others, C-521/12, EU:C:2014:330, paragraph 39;
Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraph 64.

3. Taking mitigating measures into account in the appropriate assessment

Through the cases Briels and Others and Orleans and Others the CJEU expressed the possibility to take into account mitigating measures at the appropriate assessment procedure, but the Court referred to them as *"protective measures […] aimed at avoiding or reducing any direct adverse effects for the site".*[113] However, the Court did not further clarify the nature of the mitigating/protective measures that can be taken into consideration.

The CJEU clarified this issue in the cases Commission v Germany and Grace and Sweetman. The Court set out the requirements for taking into consideration mitigating (or protective) measures in the appropriate assessment procedure. More specifically the Court held that such measures may be taken into consideration within the appropriate assessment if they aim at avoiding or reducing any direct adverse effects on the site, be effective and *"guarantee beyond all reasonable doubt* […]" that the project in question would not adversely affect the integrity of the site.[114]

In the Commission v Germany case, one of the measures in question was a fish ladder intended to compensate for fish killed during the operation of the cooling mechanism of a coal-fired power plant by enabling other fish to reach the protected breeding site faster.[115] The Court held that this measure could not be taken into consideration in the appropriate assessment because it *"could not guarantee beyond all reasonable doubt, […] that that plant would not adversely affect the integrity of the site",* since the impact assessment carried out did not contain definitive data regarding the effectiveness of the fish ladder, but rather stated that its effectiveness would be confirmed after several years of monitoring.[116] Interestingly, the German authorities did not describe the fish ladder as a mitigating or protective measure that would prevent fish from being killed, but rather as a compensatory measure *"intended to compensate for fish killed during the operation of the cooling mechanism".*[117] Indeed, according to the CJEU's previous case law mentioned above, such a measure would be expected to be classified as a compensatory and not as a mitigating measure.[118] However, in the Commission v Germany case, it seems that the Court could consider the fish ladder as mitigating (or protective) measure, as long as there was enough data to support the effectiveness of the measure and guarantee that the power plant would not adversely affect the integrity of the site.

In another recent case, Grace and Sweetman, the competent national authorities authorized the construction of a wind farm in an SPA hosting the natural habitat of a species of bird identified in Annex I of the Birds Directive. Pursuant to Article 4(1) of the Birds Directive *"the species mentioned in Annex I shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution".* The construction of the wind farm would

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[113] Judgment of 15 May 2014, Briels and Others, C-521/12, EU:C:2014:330, paragraph 28;
Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraph 54.

[114] Judgment of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301, paragraphs 34-38;
Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraph 51.

[115] Judgment of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301, paragraphs 7.

[116] Judgment of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301, paragraphs 37-38.

[117] Judgment of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301, paragraph 7.

[118] See above sub chapter "The differentiation between mitigating and compensatory measures," page 42.

result in both permanent and temporary loss of habitat in the protected site. The project was authorized based on a management plan that included restoration of habitat, forest management and confinement of construction works to times outside the main breeding season.[119] Those measures were considered as mitigating measures by the competent authorities, which took them into consideration in the appropriate assessment and thus concluded that the integrity of the site would not be adversely affected, since the total suitable habitat area in the protected site would not be decreased.[120] The important aspect of that case was that the area suitable for the protection and conservation of the protected species naturally fluctuates over time and the wind farm construction would render some parts of the site unsuitable for the protected species, while at the same time the management plan would ensure that the total suitable habitat area in the protected site would not be reduced and might also be enhanced. Under those circumstances the CJEU was asked whether the said measures could be taken into account in the appropriate assessment under Article 6(3) HD or whether they could be only considered, if need be, under Article 6(4) HD.[121]

The Court pointed out that *"as a general rule, any positive effects of the future creation of a new habitat, which is aimed at compensating for the loss of area and quality of that habitat type in a protected area, are highly difficult to forecast with any degree of certainty or will be visible only in the future".* Therefore, it seems that measures aiming at habitat creation or restoration are compensatory by nature. Consequently, the measures provided by the management plan would result in future benefits which, at the time the appropriate assessment was carried out, were only potential, as the measures were not yet been implemented.[122] Taking into account the aforementioned considerations the CJEU concluded that the measures foreseen in the management plan may not be taken into account for the purpose of the appropriate assessment under Article 6(3) HD, but could be considered, if necessary, under Article 6(4) HD.[123]

Attempting to critically assess the aforementioned rulings of the CJEU, it could be noted that the Court does not confine its reasoning in the distinction between mitigating and compensatory measures based on whether a measure aims at reducing or compensating for the adverse effects on a protected site. The CJEU rather goes a step forward and underlines the importance of the precautionary principle in the aforementioned distinction, by emphasizing that the ability to conclude beyond all reasonable scientific doubt the absence of adverse effects on the integrity of a protected site plays a key role when determining whether a measure can be taken into consideration in the appropriate assessment. Therefore, it seems that the CJEU could allow taking into consideration in the appropriate assessment a measure aiming at compensating for the adverse effects on a protected site, as long as it would be ascertained beyond all reasonable scientific doubt that the integrity of the site would not be adversely affected. This is mostly apparent in the Commission v Germany case, where the Court seemed eager to consider the fish ladder as a mitigating (or

[119] Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraphs 10-14 and 44.
[120] Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraphs 14, 18 and 21.
[121] Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraphs 28 and 37.
[122] Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraphs 49, 52-53.
[123] Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraph 57.

protective) measure, as long as there was enough data to support the effectiveness of the measure and guarantee that the power plant would not adversely affect the integrity of the site. The same eagerness seems to implicitly permeate the other two similar CJEU cases mentioned above as well. On the one hand, this approach by the CJEU implies that project developers are granted considerable leeway regarding the implementation of mitigating measures that could render a project feasible under the Habitats Directive, since they could deliver a positive appropriate assessment, based on the implementation of measures compensatory in nature, which however ascertain beyond all reasonable scientific doubt that the integrity of a site would not be adversely affected. On the other hand, the notion of "beyond all reasonable scientific doubt" is so strict, that the possibility of proving that a measure ascertains that a project will not adversely affect the integrity of a site is limited. This idea is reinforced by the fact that, despite the aforementioned approach of the CJEU, there are no rulings that actually characterize measures compensatory in nature as mitigating or protective and allow taking them into consideration in the appropriate assessment procedure.

4. Taking mitigating measures into account in the screening stage

In another case, People Over Wind and Sweetman, the CJEU dealt with the issue of whether it is possible to take mitigating measures into consideration in the screening stage preceding the appropriate assessment procedure.[124] The CJEU held that the fact that measures intended to avoid or reduce the harmful effects of a plan or project on a site are taken into consideration in the screening stage, presupposes that the plan or project is likely to have a significant effect on the site and that, consequently, an appropriate assessment must be carried out pursuant to Article 6(3) HD. The CJEU noted that this conclusion is also supported by the fact that the measures aiming at avoiding or reducing any significant effects on a site must be analyzed not at the screening stage, but at the stage of the appropriate assessment.[125]

5. The approach of the European Commission

In its guidance documents the Commission is consistently using the term "mitigating measures" and is noting that mitigating measures are directly linked to the effects of a plan or project and form part of such a project or are introduced by the competent authorities as a prerequisite for authorizing the project. In line with the precautionary principle mitigating measures are designed to avoid likely negative effects or reduce them to a level where it is ascertained beyond all reasonable scientific doubt that the integrity of the site is not adversely affected. On the other hand, according to the Commission compensatory measures, are the ones aiming at compensating for the damage caused by a plan or project and can only be considered under Article 6(4) HD.[126] The European Commission has therefore adopted a similar approach to the differentiation between mitigating and compensatory measures to the one CJEU has

[124] Judgment of 12 April 2018, People Over Wind and Sweetman, C-323/17, EU:C:2018:244, paragraph 22.

[125] Judgment of 12 April 2018, People Over Wind and Sweetman, C-323/17, EU:C:2018:244, paragraphs 35–36.

[126] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 34.

adopted, but has emphasized more the criterion of whether the measure is part of a plan or project itself, which has merely been mentioned by the CJEU but not further analyzed.[127]

However, in its opinions pursuant to Article 6(4) HD the Commission has not always differentiated between mitigating and compensatory measures in line with the approach in its guidance documents. For instance, the Commission in its opinions has characterized collection and relocation of species,[128] moving deposited sand in one side of a port to the other[129] and recultivation of newly constructed river banks[130] as "mitigation measures". However, based on the Commission's guidance documents the aforementioned "mitigation measures" should be characterized as compensatory measures, since they do not form part of a project and are not directly linked to its effects. Interestingly, inconsistency is also found in the Commission's opinions. While recultivation of newly constructed river banks was characterized by the Commission as a mitigating measure, as mentioned above, in another opinion the renaturalization of a riverbed, which is a similar measure, was classified as a compensatory measure.[131] The Commission's classification against its approach in its guidance documents is linked only to the classification of measures compensatory in nature as mitigating and not vice-versa. In other opinions however the Commission, in line with its approach in its guidance documents, characterized as mitigating measures the voluntary reduction of the coal extraction volume, which took place in the conception phase of the project,[132]

[127] See also European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 78;
Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593, paragraph 47;
Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑387/15 and C‑388/15, EU:C:2016:583, paragraph 54.

[128] European Union: European Commission, Commission Opinion of 25 January 2011 on request of Hungary pursuant to Art. 6 (4) Sub Par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the modification of the development plan of the Győr town (Hungary), C(2011) 351, pages 5-6.

[129] European Union: European Commission, Opinion of the Commission pursuant to Article 6.4 § 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the "Request by the Kingdom of Spain in relation to the construction project of the new port of Granadilla (Tenerife)", page 5.

[130] European Union: European Commission, Commission Opinion of 5.4.2013 delivered upon request of Germany pursuant to Art. 6(4) sub par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive'), concerning the deepening and widening of the ship fairway of the river Main at the sections Wipfeld, Garstadt and Schweinfurt (Bavaria/Germany), C(2013) 1871 final, page 4.

[131] European Union: European Commission, Commission Opinion of 6.12.2011 delivered upon request of Germany pursuant to Art. 6(4) sub par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the deepening and widening of the ship fairway Unter- and Außenelbe (river Elbe) to the port of Hamburg (Germany), C(2011) 9090 final, page 6.

[132] European Union: European Commission, Opinion of the Commission of 24/04/2003 Delivered upon request of Germany according to Art. 6 (4) Sub Par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of the natural habitats as well as the wild animals and plants1, concerning the approval of an operational master plan ("Rahmenbetriebsplan") of the Prosper Haniel Colliery operated by Deutsche Steinkohle AG (DSK), for the period 2001-2019, Brussels, 24/04/2003, page 4.

the postponement of construction works during reproduction phase of species, the building of protection walls[133] and using low-noise construction machinery.[134]

[133] European Union: European Commission, Commission Opinion of 29.5.2012 delivered upon request of Germany pursuant to Art. 6(4) sub par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the construction of the B 252/B 62, bypass of the municipalities Münchhausen, Wetter and Lahntal (Germany/Hesse), C(2012) 3392 final, page 4;
See also European Union: European Commission, Commission Opinion of 6.12.2011 delivered upon request of Germany pursuant to Art. 6(4) sub par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the deepening and widening of the ship fairway Unter- and Außenelbe (river Elbe) to the port of Hamburg (Germany), C(2011) 9090 final, page 6.

[134] European Union: European Commission, Commission Opinion of 5.4.2013 delivered upon request of Germany pursuant to Art. 6(4) sub par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive'), concerning the deepening and widening of the ship fairway of the river Main at the sections Wipfeld, Garstadt and Schweinfurt (Bavaria/Germany), C(2013) 1871 final, page 4.

CHAPTER V
Authorization of a plan or project

According to Article 6(3) HD, following the completion of the appropriate assessment the competent authorities may authorize a plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned. Therefore, if *"doubt remains as to the absence of adverse effects on the integrity of the site linked to the plan or project being considered, the competent authority will have to refuse authorization".*[135]

The concept of "the integrity of the protected site"

As mentioned above and as the mere wording of Article 6(3) HD suggests, within the screening stage the effects of projects are evaluated in light of the conservation objectives of the protected sites. The conclusions of the appropriate assessment are assessed against the prerequisite of the plan or project not adversely affecting the integrity of the protected site. The question raised is how those two bases of evaluation, the conservation objectives and the effect on the integrity of the protected sites, are interpreted and inter-related.

The CJEU dealt with this issue at the case Sweetman and Others, where the competent authorities authorized a road scheme crossing a Site of Community importance (SCI)[136]. The road scheme involved the permanent loss of approximately 1,47 out of 85 hectares of limestone pavement in the SCI. The surface of 85 hectares itself formed part of a total of 270 hectares of such limestone pavement in the entire SCI.[137] This limestone pavement constituted a priority habitat specially protected by the Habitats Directive, since it is non-renewable, meaning that once destroyed, it cannot be replaced.[138] The Court held that *"in order for the integrity of a site as a natural habitat not to be adversely affected […] the site needs to be preserved at a favourable conservation status",* which entails that the term "integrity" is interpreted as referring to the consideration of the site as a whole and to the continued soundness of the constitutive characteristics of the site concerned.[139] In other words, the ecological characteristics of the site, whose conservation was the objective that justified the designation of the site concerned as an SCI, define the concept of the ecological integrity.[140] Furthermore, the Court clarified that a project may be

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[135] Judgment of 7 September 2004, Waddenvereniging and Vogelsbeschermingvereniging, C-127/02, EU:C:2004:482, paragraphs 56-57;
For more details on the interpretation of the term of scientific uncertainty see above sub-chapter "The precautionary principle and scientific uncertainty within the appropriate assessment," page 35.

[136] SCIs are related to the site designation procedure under the Habitats Directive. Initially under Article 4 HD Member States are required to submit a list of proposed Sites of Community importance (pSCIs) to the Commission, which then adopts the final list of SCIs in agreement with the Member States. Once a site has been adopted as an SCI, the Member States are required to designate the site as a SAC within six years.

[137] Judgment of 11 April 2013, Sweetman and Others, C-258/11, EU:C:2013:220, paragraph 12.

[138] Judgment of 11 April 2013, Sweetman and Others, C-258/11, EU:C:2013:220, paragraphs 26 and 42;
Judgment of 11 April 2013, Sweetman and Others, C-258/11, Opinion of Advocate General Sharpston, EU:C:2012:743, paragraph 56.

[139] Judgment of 11 April 2013, Sweetman and Others, C-258/11, EU:C:2013:220, paragraphs 32 and 39;
Judgment of 11 April 2013, Sweetman and Others, C-258/11, Opinion of Advocate General Sharpston, EU:C:2012:743, paragraphs 43, 54 and 56.

[140] Judgment of 11 April 2013, Sweetman and Others, C-258/11, EU:C:2013:220, paragraph 46;

authorized only if it is ascertained that it will not prevent *"the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site in the list of SCIs".* Typical examples of such lasting adverse effects are the disappearance or the partial and irreparable destruction of a priority natural habitat type.[141] Other parameters that should be take into account are whether the plan or project causes changes to important ecological functions, site fragmentation and loss or reduction of crucial site features on which the status of the target feature depends (e.g., regular annual flooding).[142] It should also be noted that the consideration of the "lasting preservation" of the constitutive characteristics of the site, implies that the assessment of a project's effects must foresee far into the future. This interpretation is also derived by the Birds Directive, which explicitly notes that *"conservation is aimed at the long-term protection and management of natural resources".*[143]

It goes without saying, that if the conservation objective of a protected site is more ambitious than just preventing deterioration of the habitat types and species, e.g. restoring a species population, then the possible effects of a plan or project must be evaluated on the basis of those more ambitious objectives.[144] Moreover, the wording of Article 6(3) HD ("integrity of the site") implies that the focus is on the specific site in question, meaning that damaging a site cannot be justified by the fact that the conservation status of the protected habitat types and species remains favorable across the EU.[145]

Summarizing the aforementioned consideration, the notion of the integrity of the site could be interpreted as the long-term preservation of the protected habitats and species the site was designated for and the general coherence of the Natura 2000 network.

Critique on the concept of "the integrity of the protected site"

Le Lievre argues that the understanding of the concept "ecological integrity" established by the CJEU, could have far-reaching implications in terms of burden of proof required from developers to inform an appropriate assessment. Therefore, Le Lievre argues that Court should have given some leeway for a de minimis exception, which would enable the authorization of projects that despite having a localized effect on the ecological characteristics of a protected site, they would not compromise the ecological integrity of the site as a whole and the capacity to meet its conservation objectives.[146] Conversely, Advocate General Sharpston noted in her opinion in the case Sweetman and Others, that an interpretation similar to the one suggested by Le Lievre

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Judgment of 11 April 2013, Sweetman and Others, C-258/11, Opinion of Advocate General Sharpston, EU:C:2012:743, paragraph 56.

[141] Judgment of 11 April 2013, Sweetman and Others, C-258/11, EU:C:2013:220, paragraphs 40, 43 and 48.

[142] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 77.

[143] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, OJ L 20, Recital 7.

[144] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) pages 70-71.

[145] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 77.

[146] Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), pages 141-142.

would be incompatible with the general scheme under Article 6 HD and would *"fail to prevent […] the 'death by a thousand cuts' phenomenon, that is to say, cumulative habitat loss as a result of multiple, or at least a number of, lower level projects being allowed to proceed on the same site".*[147]

[147] Judgment of 11 April 2013, Sweetman and Others, C-258/11, Opinion of Advocate General Sharpston, EU:C:2012:743, paragraph 67.

PART III
The derogation clause

Article 6(4) HD provides for exceptions to the rule laid down in Article 6(3) HD, by enabling competent national authorities to authorize a plan or project in spite of having concluded that it adversely affects the integrity of the protected site.

The derogation laid down in Article 6(4) HD is not an automatic process, but must be pursued by the project proponent.[148] The first subparagraph of Article 6(4) HD lays down three conditions that have to be met in order for a plan or project to be carried out in spite of adversely affecting the protected site. These conditions are the absence of less damaging alternative solutions, the existence of imperative reasons of overriding public interest and the adoption of compensatory measures to ensure that the overall coherence of the Natura 2000 network is protected. Moreover, Member States are required to inform the Commission of the compensatory measures adopted. The order in which those conditions are assessed is important, since each step determines whether the next step will be examined.[149]

The second subparagraph sets stricter conditions for the derogation if the protected site hosts priority habitats or species. In this case the ground for derogation can be related only to human health, public safety and beneficial consequences of primary importance for the environment. Other imperative reasons of overriding public interest may be taken into consideration only after an opinion from the Commission. The Commission's opinions are not legally binding and therefore Member States could act against those opinions.[150] However, in case of non-compliance there is always the risk of an infringement procedure by the Commission.

The CJEU has held that Article 6(4) HD should be interpreted strictly and only after the completion of the appropriate assessment pursuant to Article 6(3) HD. The completion of the appropriate assessment is considered essential, since any imperative reasons of overriding public interest, alternative solutions and compensatory measures must be evaluated against the damage caused to the site by the project, which is clarified by the appropriate assessment.[151] Conversely, the three conditions laid down by Article 6(4) HD do not constitute issues that the competent national authorities are required to take into consideration for the purposes of the appropriate assessment procedure under Article 6(3) HD.[152]

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[148] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 79.

[149] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 79.

[150] Ludwig Krämer, "The European Commission's Opinions underArticle 6(4) of the Habitats Directive," Journal of Environmental Law 21:1 (7 January 2009), doi:10.1093/jel/eqn028, page 61.

[151] Judgment of 20 September 2007, Commission v Italy, C-304/05, EU:C:2007:532, paragraphs 82-83;
See also Judgment of 26 October 2006, Commission v Portugal, C-239/04, EU:C:2006:665, paragraphs 35-36;
Judgment of 11 April 2013, Sweetman and Others, C-258/11, EU:C:2013:220, paragraph 35;
Judgment of 24 November 2011, Commission v Spain, Case C-404/09 EU:C:2011:768, paragraph 109.

[152] Judgment of 14 April 2005, Commission v Netherlands, Case C-441/03, EU:C:2005:233, paragraphs 15, 16, 20-28.

CHAPTER I

Absence of alternative solutions

The first condition to be met under Article 6(4) HD in order for the derogation to apply is the absence of alternative solutions. The proposed project should be the least damaging alternative regarding the integrity of the protected site and in that line the competent national authorities have to assess all feasible alternative projects, while also considering the zero-action option. The competent authorities should take into account the relative performance on the site's conservation objectives and the economic cost of the alternatives. However, the Commission and the CJEU have underlined that the economic cost cannot be the sole decisive element in the choice among alternatives, since the economic cost *"is not of equal importance to the objective of conserving natural habitats and wild fauna and flora"*. Alternative solutions could include alternative locations or routes, alternative scale or design of the plan or project and alternative processes and approaches.[153] Therefore, it should be noted that while economic considerations may constitute an imperative reason of overriding public interest, they cannot be decisive when analyzing alternative solutions. If feasible alternative solutions are found, they should be subjected to a new screening stage and -if deemed likely to have a significant effect on the protected site- an appropriate assessment under Article 6(3) HD.[154]

The one negative opinion that was issued by the Commission pursuant to the second subparagraph of Article 6(4) HD was related to the consideration of alternative solutions. The Commission noted that the assessment of alternative solutions was not thorough and that it could not be accepted that no alternatives exist, thus ruling that the project in question should not be implemented.[155] However, in all the other opinions the Commission has held that the consideration of alternatives by the competent national authorities was thorough and that the proposed projects were indeed the least damaging solutions.[156] Similarly to the one negative opinion issued by

[153] European Union: European Commission, Commission notice "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC", C(2018) 7621 final, page 58;
Judgment of 14 January 2016, Grüne Liga Sachsen and Others, C-399/14, EU:C:2016:10, paragraph 77;
European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 79.

[154] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 80.

[155] For more info see European Union: European Commission, Opinion of the European Commission of 24/04/2003 delivered upon request of Germany according to Art. 6(4) Sub Par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of the natural habitats as well as the wild animals and plants, concerning the creation of a new industrial and commercial area "Siegerland" within the former military training area Trupbach near Siegen/Freudenberg (North Rhine-Westfalia), Brussels, 24/04/2003.

[156] Indicatively see European Union: European Commission, Opinion of the Commission pursuant to Article 6.4 § 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the "Request by the Kingdom of Spain in relation to the construction project of the new port of Granadilla (Tenerife)", COM(2006) XXX;
European Union: European Commission, Commission Opinion of 2005 delivered upon request of Germany on the planning approval procedure launched under aviation law for the expansion of the Karlsuhe/Baden-Baden Airport, pursuant to Article 6(4) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of the natural habitats and of wild fauna and flora, C(2005).

the Commission, the CJEU in the Commission v Portugal case, held that the competent national authorities did not adequately demonstrate the absence of alternative solutions, because they did not assess alternative solutions in a wider geographical area, although based on the information provided by the Commission, it could not be unequivocally ruled out that such solutions could be viable.[157]

Regarding renewable energy projects it should be noted that they are closely related to the conditions of certain geographical areas. For example, wind projects depend on wind speed, with offshore wind projects also depending on water depth and distance to shore, thus making specific geographical areas ideal and others not suitable. This could make a strong argument in favor of renewable energy projects being situated at a specific location and against other alternatives. On the other hand, it could be argued that such considerations are related to economic cost, which as mentioned above cannot be the determining factor in the choice among alternatives. Therefore, it seems that the argument against alternatives should be reinforced. Moreover, the Commission has noted in its opinions that the competent national authorities should assess alternatives beyond the boundaries of local municipalities. This implies that when assessing alternatives to renewable energy projects a very wide geographical area should be examined.

[157] See also Judgment of 26 October 2006, Commission v Portugal, C-239/04, EU:C:2006:665, paragraphs 37-39.

CHAPTER II

Imperative reasons of overriding public interest

Defining an interest as "overriding"

The second condition to be met under Article 6(4) HD in order for the derogation to apply is the presence of imperative reasons of overriding public interest, which can also be founded on social or economic interests. The CJEU has established that an interest capable of justifying the application of Article 6(4) HD must be simultaneously "public" and "overriding", meaning that its significance must be comparable to the significance of the objective of the Habitats Directive to protect habitats and species.[158] Furthermore, the interest under consideration must be weighed up against the damage caused to the protected site, which will be determined based on the site's conservation objectives, meaning that it must outweigh the adverse effects on the project on the protected site.[159] Therefore, the implementation of the project should be more important than safeguarding the protected site. Moreover, the overriding public interest should be long-lasting, since short-term interests yield short-term benefits, which could not be regarded as more important than the long-term conservation objectives of the Habitats Directive.[160]

Defining an interest as "public"

According to the CJEU defining an interest as "public" is not straightforward, since even the development of projects of a private character could constitute an overriding public interest.[161] However, in the Solvay case the Court held that the construction of infrastructure designed to accommodate a management center of a private company did not constitute an imperative reason of overriding public interest, since its nature and social and economic context did not justify such interests.[162] It should be noted that in the Solvay case, the CJEU did not provide further justification as to the reason why the nature and social and economic context of the private management center did not present an overriding public interest, thus making it unclear under which circumstances could a private project be authorized under Article 6(4) HD.

A typical example of private activities being carried out pursuant to Article 6(4) HD is the approval of an operational master plan of the Prosper Haniel Colliery in Germany, which provided for the extension of the underground coal mining activities of the colliery into areas that had not yet been exploited, causing adverse effects to two proposed Sites of Community importance (pSCIs).[163] The German authorities argued that the closure of the mine would result in the loss of 10.400 jobs, while at the same time the said coal mine ensured security of energy supply and maintaining the leading position of EU mining and coal energy technologies. The Commission in its

[158] Judgment of 16 February 2012, Solvay and Others, C-182/10, EU:C:2012:82, paragraph 75.

[159] Judgment of 20 September 2007, Commission v Italy, C-304/05, EU:C:2007:532, paragraph 83.

[160] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 80;

Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, Opinion of Advocate General Kokott, EU:C:2011:651, paragraphs 227.

[161] Judgment of 16 February 2012, Solvay and Others, C-182/10, EU:C:2012:82, paragraphs 76-77.

[162] Judgment of 16 February 2012, Solvay and Others, C-182/10, EU:C:2012:82, paragraphs 77-79.

[163] PSCIs are related to the site designation procedure under the Habitats Directive. For more information see footnote 140.

opinion pursuant to Article 6(4).2 HD held that the loss of jobs was inevitable, since employment in the German coal industry is in any case projected to decline in the future and therefore closing the mine would free resources, including subsidies, that could be invested in actions to offset the localized short-term economic and social adverse effects. Moreover, the Commission held that the contribution of the extension of the mine under consideration in the security of energy of supply is negligible and does not ensure a leading position for the EU mining and coal energy technologies. Interestingly, the Commission noted that whether such a leading position constitutes an imperative reason of overriding public interest is under question. Despite the fact that the Commission confuted all the arguments presented by the German authorities, it eventually accepted *"the fears expressed by the competent authorities"* that the closure of the mine could result in social and economic effects of great importance in the short-term and held that the project was justified by imperative reasons of overriding public interests.[164]

The aforementioned Commission's opinion did not further elaborate the reasons why despite confuting the German authorities' arguments, the project development was nevertheless considered to satisfy the conditions of Article 6(4) HD. Therefore, it could be characterized as lacking complete and precise reasoning and subsequently conflicting. It is interesting to note that this opinion was issued in 2003 and therefore it is questionable whether the Commission would adopt a similar approach today, given the EU's commitments regarding climate and green energy policy.

Irrigation, water supply and conversion of ecosystem types

Another interesting case is the Nomarchiaki Aftodioikisi Aitoloakarnanias and Others case, which concerned a project for the partial diversion of a river in an SPA site, intended to serve principally irrigation needs and electricity production and secondarily water supply to cities. Moreover, the project would convert a natural fluvial ecosystem into a man-made fluvial and lacustrine ecosystem.[165] The CJEU dealt with the issue of whether irrigation and water supply could constitute imperative reasons of overriding public interest under Article 6(4) HD.[166] The Court held that irrigation and water supply may indeed constitute imperative reasons of overriding public interest. However, if the site under consideration hosts priority habitats or species water supply may in principle justify the implementation of the project, since it is considered an interest linked to human health. Irrigation on the other hand may in some circumstances, given it is linked to beneficial consequences of primary importance for the environment, justify the authorization of a project, since it cannot, in principle, be considered as an interest relating to human health or public safety.[167] Advocate General Kokott approached the issue similarly, while also noting that

[164] European Union: European Commission, Opinion of the Commission of 24/04/2003 Delivered upon request of Germany according to Art. 6 (4) Sub Par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of the natural habitats as well as the wild animals and plants1, concerning the approval of an operational master plan ("Rahmenbetriebsplan") of the Prosper Haniel Colliery operated by Deutsche Steinkohle AG (DSK), for the period 2001-2019, Brussels, 24/04/2003, pages 3, 5-7.

[165] Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, EU:C:2012:560, paragraphs 30, 41 and 14.

[166] Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, EU:C:2012:560, paragraph 118.

[167] Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, EU:C:2012:560, paragraphs 121-128.

irrigation and water supply constitute imperative reasons of overriding public interest pursuant to the Water Framework Directive.[168]

However, neither the CJEU nor Advocate General Kokott assessed whether electricity production may constitute an overriding public interest under Article 6(4) HD. The Advocate General took a stance on the issue under the Water Framework Directive, noting that electricity production is a legitimate public interest, albeit less important than water supply due to its economic nature.[169] It should be noted that, as mentioned above, the Advocate General based the characterization of irrigation and water supply as overriding public interests under Article 6(4) HD on the Water Framework Directive. Similarly, it could be argued that since electricity production constitutes a legitimate public interest under the Water Framework Directive, it also constitutes an overriding public interest under Article 6(4) HD.

Interestingly the CJEU also dealt with the question of whether the Habitats Directive permits the conversion of a natural fluvial ecosystem into a mainly man-made fluvial and lacustrine ecosystem. The Court held that such a conversion, which adversely affects the integrity of a protected site, may be justified under Article 6(4) HD. The Court also emphasized the importance of sustainable development, noting that the Habitats Directive makes a contribution towards that direction by promoting biodiversity, while at the same time taking into consideration economic, social, cultural and regional requirements. In that line the Court held the protection of biodiversity may *"require the maintenance, or indeed the encouragement, of human activities"* and subsequently the first subparagraph of Article 6(4) HD and especially the prerequisite of the adoption of compensatory measures should be interpreted in line with the objective of sustainable development. The Court concluded that in light of the above and given that the conditions of Article 6(4) are met, the Habitats Directive allows for the conversion of a natural fluvial ecosystem into a mainly man-made fluvial and lacustrine ecosystem.[170]

Given the above interpretation of Article 6(4) HD by the CJEU, it is interesting to note that the competent authorities have an extremely wide discretionary power regarding authorizing a project that has an impact on protected sites pursuant to Article 6(4) HD, since the presence of overriding public interests allows not only for adverse effects on the protected sites, but even for conversion of ecosystem types.

Security of electricity supply

At a recent case, Inter-Environnement Wallonie, the CJEU dealt with the issue of whether security of electricity supply constitutes an imperative reason of overriding public interest. The case was related to the postponement of the date of deactivation and of the end of the industrial production of electricity of nuclear power stations, which entailed investments and security upgrades for the nuclear power stations.[171] The Court highlighted that pursuant to Article 194(1)(b) TFEU security of energy supply is among the core objectives of EU energy policy. Therefore, the Court held that

[168] Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, Opinion of Advocate General Kokott, EU:C:2011:651, paragraphs 83-85, 221-228.

[169] Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, Opinion of Advocate General Kokott, EU:C:2011:651, paragraphs 83–91.

[170] Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, EU:C:2012:560, paragraphs 134-139.

[171] Judgment of 29 July 2019, Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen, C-411/17, EU:C:2019:622, paragraphs 2, 44-57.

ensuring security of electricity supply is unequivocally an imperative reason of overriding and public interest under Article 6(4).1 HD. However, the Court noted that pursuant to Article 6(4).2 HD, if a protected site hosts priority habitats or species, a mere need to ensure security of electricity supply is not enough to proceed with a project, but the need to nullify a genuine and serious threat of rupture of electricity supply is a prerequisite.[172]

The Inter-Environnement Wallonie case is very interesting, since it gives rise to considerations relating to renewable energy projects constituting imperative reasons of overriding public interest. More specifically, it should be noted that pursuant to Article 194(1)(c) TFEU the development of renewable forms of energy also constitutes a core objective of the EU energy policy, while the said Article also explicitly mentions *"the need to preserve and improve the environment".* Given the above reasoning of the CJEU in the case Inter-Environnement Wallonie, it could be argued that there is a strong foundation for renewable energy projects to be regarded as imperative reasons of overriding public interest within the meaning of Article 6(4).1 HD. However, for the purposes of protected sites that host priority habitats or species under Article 6(4).2 it would be significantly more complex to establish that renewable energy projects constitute overriding public interests. When it comes to security of electricity supply the volatility of renewable energy coupled with the currently immature renewable energy storage technology does not enable the nullification of a genuine and serious threat of rupture of electricity supply through the implementation of renewable energy projects.

[172] Judgment of 29 July 2019, Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen, C-411/17, EU:C:2019:622, paragraphs 155-159.

CHAPTER III

Priority habitats and species

Pursuant to Article 6(4).2 HD if a project affects a protected site that hosts priority habitats or species the grounds for authorizing the project are restricted to imperative reasons of overriding public interest relating to human health or public safety, to beneficial consequences of primary importance for the environment or, pursuant to an opinion from the Commission, to other imperative reasons of overriding public interest. It is evident from the mere wording of Article 6(4).2 HD that the discretionary power of competent authorities to authorize projects is significantly smaller when sites that host priority habitats or species are affected.

This was clearly illustrated in the case Inter-Environnement Wallonie mentioned above, where the Court held that the objective of security of electricity supply is unequivocally an imperative reason of overriding and public interest under Article 6(4).1, but if priority habitats or species are affected it may constitute such an interest only if there is a need to nullify a genuine and serious threat of rupture of electricity supply.[173]

It should be clarified, that as Advocate General Kokott noted in the case Nomarchiaki Aftodioikisi Aitoloakarnanias, the more stringent conditions set out in Article 6(4).2 HD apply only if the priority habitats or species of the protected site are actually adversely affected by the project. This means that the conditions of Article 6(4).1 HD will not apply, if the project despite adversely affecting a protected site that hosts priority habitats or species, affects other elements of the protected site apart from the priority elements.[174]

As the wording of Article 6(4).2 HD suggests, if a protected site hosts priority habitats or species and the imperative reason of overriding public interest put forward by the competent authorities is not related to human health, public safety or beneficial consequences of primary importance for the environment, the project may be authorized only pursuant to an opinion from the Commission. To date the Commission has issued twenty-one opinions pursuant to Article 6(4).2 HD and only in one of them did the Commission conclude that the prerequisites of Article 6(4).2 HD were not met.[175]

[173] See footnote 171.

[174] Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, Opinion of Advocate General Kokott, EU:C:2011:651, paragraph 226.

[175] European Union: European Commission, Opinion of the European Commission of 24/04/2003 delivered upon request of Germany according to Art. 6(4) Sub Par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of the natural habitats as well as the wild animals and plants, concerning the creation of a new industrial and commercial area “Siegerland” within the former military training area Trupbach near Siegen/Freudenberg (North Rhine-Westfalia), Brussels, 24/04/2003.

CHAPTER IV

Compensatory measures

The third and final condition to be met under Article 6(4) HD in order for the derogation to apply is the implementation of compensatory measures, that ensure the protection of the overall coherence of the protected site and the notification of the Commission regarding the compensatory measures adopted. As noted above the absence of alternative solutions and the existence of imperative reasons of overriding public interest must have already been established, in order to consider compensatory measures. It should be noted that according to the wording of Article 6(4) HD the competent authorities should take "all" compensatory measures that are necessary, which suggests the extensive application of a number of measures.

The compensatory measures should be functional before the onset of the work on the project, in order to counterbalance the adverse effects of the project on habitats and species by offering alternative locations in the compensation area. If this is not plausible additional compensatory measures should be applied, in order for the interim losses occurred until the implementation of the compensatory measures to be buffered. The competent authorities should inform the Commission of the compensatory measures as soon as they have been adopted in the planning process, in order for the Commission to have adequate time to assess the correct application of the Habitats Directive.[176]

The distinction between mitigating and compensatory measures has already been analyzed.[177] It should be further noted that according to the Commission's guidance documents the compensatory measures should contribute to the conservation of habitats and species that are adversely affected within the protected area concerned or within the same range, migration route or wintering area. Moreover, compensatory measures should provide functions similar to those which constituted the basis of the site designation and simultaneously be additional to the typical obligations under the Habitats Directive, meaning that they cannot substitute existing obligations, such as the adoption of management plans.[178]

Typical examples of compensatory measures include creation of new habitats comparable to the ones that are lost or degraded and habitat restoration that goes beyond the site's conservation objectives. Both measures can be applied either within the affected site or in another part of the Natura 2000 network, which has also been emphasized by the CJEU.[179] In the latter case the new site should subsequently be included in the Natura 2000 network. The addition to the Natura 2000 network of a

[176] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 82.

[177] See above sub chapter "The differentiation between mitigating and compensatory measures," page 42.

See also Judgment of 15 May 2014, Briels and Others, C-521/12, Opinion of Advocate General Sharpston, EU:C:2014:113, paragraphs 46.

[178] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) pages 81-82.

[179] Judgment of 15 May 2014, Briels and Others, C-521/12, EU:C:2014:330, paragraph 38;

Judgment of 15 May 2014, Briels and Others, C-521/12, Opinion of Advocate General Sharpston, EU:C:2014:113, paragraph 46.

new site could also be considered a compensatory measure, as long as the new site is comparable to the affected site in terms of quality and condition. The habitats and species adversely affected should be compensated for in comparable proportions. However, taking into consideration the risk and scientific uncertainty that is inherently involved in the recreation or restoration of habitats and species, the Commission strongly advises the application of ratios well above 1:1, in order to ensure that the measures applied will provide the essential degree of compensation.[180]

Furthermore, it should be taken into account that certain habitats and species are vulnerable and require a long time to regain their ecological function, while others could be even of a non-renewable nature or impossible to artificially simulate or create, such as limestone pavement. In such cases the compensation for the adverse effects may simply be impossible.[181]

The CJEU has characterized as compensatory measures the creation of new habitat;[182] a fish ladder intended to compensate for fish killed during the operation of the cooling mechanism of a coal-fired power plant by enabling other fish to reach the protected breeding site faster;[183] the restoration of habitat, forest management and confinement of construction works to times outside the breeding season of protected species.[184]

[180] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 82.
[181] European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018) page 82.
[182] See footnote 109
[183] See footnote 114 and 115
[184] See footnote 118 and 122

PART IV
Discussion - The effectiveness of the appropriate assessment procedure regarding balancing biodiversity protection and RES promotion, identification of weaknesses and recommendations

The appropriate assessment procedure laid down in Article 6 HD attempts to balance biodiversity protection and -among others- RES promotion, by setting requirements for project developments. The provisions of this article will grow to be of higher importance as the Natura 2000 network is expanded and RES projects are increasingly deployed pursuant to the EU's climate policy.

The appropriate assessment procedure has received critique for the rigid application of the precautionary principle and the very high standard of proof, regarding ascertaining beyond all reasonable scientific doubt that a project will not adversely affect the integrity of protected sites in order for it to be authorized. The rationale behind the critique is that science cannot always deliver what is demanded by law, thus rendering this high standard of proof unrealistic in certain cases. This is especially true regarding RES projects in marine environments, where the available data and scientific understanding is limited compared to terrestrial environments. This even more so regarding novel RES projects in marine environments. This unrealistic standard of proof is expected to lead to increased conflicts in the future, since offshore RES projects, including wind energy, but also wave and tidal energy which are considered novel technologies, are expected to play a pivotal role in the EU's climate policy. Moreover, it entails the risk of hindering the deployment of innovative RES projects. A typical example is the withdrawal of a foreshore application for a single tidal energy turbine in Ireland, since the additional surveys that were required were beyond the timeline of the funding available to deploy and test the turbine.[185] On the other hand, the extensive relaxation of the precautionary principle would not be effective either, since it would promote potentially harmful RES projects. The CJEU has not yet had the opportunity to apply the precautionary principle within Article 6(3) and (4) HD in cases involving novel RES projects and thus the actual legal interplay between novel RES technologies and biodiversity protection remains to be seen.

The above considerations showcase that scientific uncertainty is one of the major issues to be addressed when it comes to balancing RES promotion and biodiversity protection and therefore a strong science-policy nexus is of utmost importance. In that line, the burden of addressing scientific uncertainty should not be placed on project developers alone, but rather on governments, the industry and academia in tandem. A step towards the right direction could be the undertaking of extensive surveys on Member-State level, that assess which are the best geographical locations for the development of RES projects in terms of biodiversity protection.[186] Such strategic planning systems would facilitate both RES projects investments, by alleviating the burden of proof linked to the appropriate assessment procedure, and biodiversity protection, by promoting scientific knowledge.

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[185] Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), page 153.

[186] See for example Vassiliki Kati, Christina Kassara, Zoi Vrontisi, Aristides Moustakas, The biodiversity-wind energy-land use nexus in a global biodiversity hotspot, Science of The Total Environment, Volume 768, 2021, 144471, ISSN 0048-9697, https://doi.org/10.1016/j.scitotenv.2020.144471.

Another critical point is the linkage between Articles 6(3) and (4) HD. Taking into consideration the EU's climate policy, large scale RES projects are highly likely to be linked to overriding public interests and therefore have the potential to be authorized based on the derogation clause of Article 6(4) HD. Coupled with the high evidentiary threshold of Article 6(3) HD, this could lead to the paradox of small-scale novel RES projects, with uncertain but probably limited impact on protected sites, not being authorized based on Article 6(3) HD and not being able to satisfy the conditions of Article 6(4) HD either, while large-scale novel RES projects, with uncertain but potentially extensive adverse effects on protected sites, would be authorized based on Article 6(4) HD.[187] However, authorizing small-scale novel RES projects coupled with mitigation and compensatory measures and sufficient data gathering and monitoring, would be a more sustainable option, since it would allow for the on-site testing of novel technologies without risking extensive damage on biodiversity.

In a similar vein, it is important to note that the Nature Directives do not explicitly require post-implementation monitoring, data gathering and decision-making adaptation. However, Article 6(2) HD provides for the adoption of measures to avoid the deterioration and disturbance of habitats and species. This overarching obligation could become more effective, if post-implementation continuous monitoring, data gathering, adaptation in the form of mitigating and compensatory measures and re-evaluation of permitting conditions were required for all RES projects authorized based on both Article 6(3) and (4) HD.[188] Simultaneously, thresholds of acceptable adverse effects could be set (e.g. maximum acceptable collision numbers, displacement range etc.). Such thresholds would facilitate the early identification of adverse impacts or lack thereof, before extensive or even irreversible damage is caused, and inform the adoption of new measures or relaxation of existing measures respectively.[189] Those thresholds essentially compensate for scientific uncertainty regarding a project's adverse effects on protected sites by ensuring that a pre-defined level of protection will be met.

The coupling of the approaches mentioned in the previous two paragraphs would both facilitate the implementation of RES projects -and especially the deployment of novel RES technologies and RES projects in the marine environment- and at the same time guarantee long-term compatibility of RES projects with the conservation objectives of Natura 2000 sites. Additionally, it would promote scientific understanding and ensure that the best scientific knowledge available guides all stages of project development. Of course, such an approach raises issues of increased monitoring costs and legal certainty for project developers, which probably preclude the option of terminating licenses for projects that are proved to deteriorate or disturb habitats or species post-implementation. However, legal certainty does not in any way preclude the continuous monitoring and a continuous adaptation in the form of mitigating and compensatory measures. It should be noted that such an approach could also raise

[187] See also Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), page 255.

[188] Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), page 338.

[189] For more information on thresholds of acceptable adverse effects see Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), pages 313-316.

issues regarding the exploitation of this approach by competent authorities and project developers in order to cover up gaps in the pre-implementation phase and subsequently authorize projects that are proven to be harmful, which would jeopardize the protection provided by the Nature Directives. This risk could be averted through sufficient procedural safeguards and transparent and enforceable commitments regarding monitoring, thresholds of acceptable adverse effects and mitigating or compensatory measures.[190] Moreover, a staged licensing process could be implemented, where RES projects with uncertain effects on protected sites start as small-scale projects or in a confined spatial area and further expand only if according to the continuous monitoring the set thresholds of acceptable adverse effects are not reached. It goes without saying that this approach could not be a panacea for all RES projects characterized by scientific uncertainty as to their effects on protected sites. In cases of significant scientific uncertainty about effects on sensitive or highly endangered habitats and species, a low threshold of risk tolerance should be set, which could go as far as the zero-action option.[191]

Moreover, it should be noted that Article 6(4).1 HD offers considerable leeway to Member States for authorizing projects that adversely affect protected sites, without the prerequisite of the opinion of the Commission, as in the case of Article 6(4).2 HD. The Member States only have to notify the Commission regarding the compensatory measures that have been adopted. However, the Commission only publishes its opinions pursuant to Article 6(4).2 HD, thus giving rise to transparency issues relating to the control of effective application of the derogation clause in the case of Article 6(4).1 HD. In that line, the publication of information regarding Member States' notifications pursuant to Article 6(4).1 HD would be desirable.

[190] For more info on that see Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), pages 365-366;
See also a similar approach by the Commission regarding the implementation of the Nature Directives in coastal zones and estuaries in the case of projects authorized based on Article 6(4) HD at European Union: European Commission, Guidance Document The implementation of the Birds and Habitats Directives in estuaries and coastal zones (2011) page 33.

[191] Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019), pages 368 and 373.

PART V

Bibliography

Legislation

Council Directive 1999/22/EC of 29 March 1999 relating to the keeping of wild animals in zoos, OJ L 94.

Council Directive 83/129/EEC of 28 March 1983 concerning the importation into Member States of skins of certain seal pups and products derived therefrom, OJ L 91.

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206.

Council Regulation (EEC) No 3254/91 of 4 November 1991 prohibiting the use of leghold traps in the Community and the introduction into the Community of pelts and manufactured goods of certain wild animal species originating in countries which catch them by means of leghold traps or trapping methods which do not meet international humane trapping standards, OJ L 308.

Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (Text with EEA relevance.), PE/48/2018/REV/1, OJ L 328.

Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market, OJ L 283.

Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, OJ L 20.

Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance), OJ L 140, (RED I).

Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (Text with EEA relevance), OJ L 26.

Regulation (EC) No 1007/2009 of the European Parliament and of the Council of 16 September 2009 on trade in seal products (Text with EEA relevance), OJ L 286.

Regulation (EU) No 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species, OJ L 317.

Regulation (EU) No 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009 Text with EEA relevance, OJ L 115.

The Convention on Biological Diversity of 5 June 1992 (1760 U.N.T.S. 69).

European Commission Documents

European Union: European Commission, Annex to the Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal, COM(2019) 640 final.

European Union: European Commission, Annex to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030, COM(2020) 380 final.

European Union: European Commission, Commission note on setting conservation objectives for Natura 2000 sites (November 2012).

European Union: European Commission, Commission notice "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC", C(2018) 7621 final.

European Union: European Commission, Commission notice Guidance document on wind energy developments and EU nature legislation, C(2020) 7730 final.

European Union: European Commission, Commission Opinion of 2005 delivered upon request of Germany on the planning approval procedure launched under aviation law for the expansion of the Karlsuhe/Baden-Baden Airport, pursuant to Article 6(4) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of the natural habitats and of wild fauna and flora, C(2005).

European Union: European Commission, Commission Opinion of 25 January 2011 on request of Hungary pursuant to Art. 6 (4) Sub Par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the modification of the development plan of the Győr town (Hungary), C(2011) 351.

European Union: European Commission, Commission Opinion of 29.5.2012 delivered upon request of Germany pursuant to Art. 6(4) sub par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the construction of the B 252/B 62, bypass of the municipalities Münchhausen, Wetter and Lahntal (Germany/Hesse), C(2012) 3392 final.

European Union: European Commission, Commission Opinion of 5.4.2013 delivered upon request of Germany pursuant to Art. 6(4) sub par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive'), concerning the deepening and widening of the ship fairway of the river Main at the sections Wipfeld, Garstadt and Schweinfurt (Bavaria/Germany), C(2013) 1871 final.

European Union: European Commission, Commission Opinion of 6.12.2011 delivered upon request of Germany pursuant to Art. 6(4) sub par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the deepening and widening of the ship fairway Unter- and Außenelbe (river Elbe) to the port of Hamburg (Germany), C(2011) 9090 final.

European Union: European Commission, Commission Staff Working Document Executive Summary of the Fitness check of the EU Nature Legislation (Birds and Habitats Directives) Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, SWD(2016) 473 final.

European Union: European Commission, Communication from the Commission to the Council and the European Parliament on a European Community biodiversity strategy COM(1998) 42 final.

European Union: European Commission, Communication from the Commission - Halting the loss of biodiversity by 2010 - and beyond - Sustaining ecosystem services for human well-being, COM(2006) 0216 final.

European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee Of The Regions, Our life insurance, our natural capital: an EU biodiversity strategy to 2020, COM(2011) 0244 final.

European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM(2020) 380 final.

European Union: European Commission, Communication From The Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Commission, Work Programme 2021 A Union of vitality in a world of fragility, COM(2020) 690 final.

European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the committee of the Regions, An Action Plan for nature, people and the economy, COM(2017) 198 final.

European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A hydrogen strategy for a climate-neutral Europe, COM(2020) 301 final.

European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Powering a climate-neutral economy: An EU Strategy for Energy System Integration, COM(2020) 299 final.

European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, An EU Strategy to harness the potential of offshore renewable energy for a climate neutral future, COM(2020) 741 final.

European Union: European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a new approach for a sustainable blue economy in the EU Transforming the EU's Blue Economy for a Sustainable Future, COM(2021) 240 final.

European Union: European Commission, Guidance Document The implementation of the Birds and Habitats Directives in estuaries and coastal zones (2011).

European Union: European Commission, Guidance on the requirements for hydropower in relation to Natura 2000 (2018).

European Union: European Commission, Opinion of the Commission of 24/04/2003 Delivered upon request of Germany according to Art. 6 (4) Sub Par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of the natural habitats as well as the wild animals and plants1, concerning the approval of an operational master plan (“Rahmenbetriebsplan”) of the Prosper Haniel Colliery operated by Deutsche Steinkohle AG (DSK), for the period 2001-2019, Brussels, 24/04/2003.

European Union: European Commission, Opinion of the Commission pursuant to Article 6.4 § 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, concerning the "Request by the Kingdom of Spain in relation to the construction project of the new port of Granadilla (Tenerife)".

European Union: European Commission, Opinion of the European Commission of 24/04/2003 delivered upon request of Germany according to Art. 6(4) Sub Par. 2 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of the natural habitats as well as the wild animals and plants, concerning the creation of a new industrial and commercial area "Siegerland" within the former military training area Trupbach near Siegen/Freudenberg (North Rhine-Westfalia), Brussels, 24/04/2003.

European Union: European Commission, Press Release, "Commission welcomes provisional agreement on the European Climate Law", Brussels, 21 April 2021.

European Union: European Commission, Proposal for a Decision of the European Parliament and of the Council on a General Union Environment Action Programme to 2030, COM(2020) 652 final.

European Union: European Commission, Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law), COM/2020/80 final.

European Union: European Commission, Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee, The state of nature in the European Union, Report on the status and trends in 2013 - 2018 of species and habitat types protected by the Birds and Habitats Directives, COM(2020) 635 final.

European Union: European Commission, Report from the Commission to the European Parliament and the Council, The mid-term review of the EU Biodiversity Strategy To 2020, COM(2015) 0478 final.

CJEU case law

Judgement of 25 July 2018, Grace and Sweetman, C-164/17, EU:C:2018:593.

Judgement of 25 July 2018, Grace and Sweetman, C-164/17, Opinion of Advocate General Tanchev, EU:C:2018:274.

Judgment of 10 December 2009, Umweltanwalt von Kärnten, C-205/08, EU:C:2009:767.

Judgment of 10 January 2006, Commission v Germany, C-98/03, EU:C:2006:3.

Judgment of 11 April 2013, Sweetman and Others, C-258/11, EU:C:2013:220.

Judgment of 11 April 2013, Sweetman and Others, C-258/11, Opinion of Advocate General Sharpston, EU:C:2012:743.

Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, Opinion of Advocate General Kokott, EU:C:2011:651.

Judgment of 11 September 2012, Nomarchiaki Aftodioikisi Aitoloakarnanias and Others, C-43/10, EU:C:2012:560.

Judgment of 12 April 2018, People Over Wind and Sweetman, C-323/17, EU:C:2018:244.

Judgment of 13 December 2007, Commission v Ireland, C-418/04, EU:C:2007:780.

Judgment of 14 April 2005, Commission v Netherlands, Case C-441/03, EU:C:2005:233.

Judgment of 14 January 2010, Stadt Papenburg, C-226/08, EU:C:2010:10.

Judgment of 14 January 2016, Grüne Liga Sachsen and Others, C-399/14, EU:C:2016:10.

Judgment of 15 May 2014, Briels and Others, C-521/12, EU:C:2014:330.

Judgment of 15 May 2014, Briels and Others, C-521/12, Opinion of Advocate General Sharpston, EU:C:2014:113.

Judgment of 16 February 2012, Solvay and Others, C-182/10, EU:C:2012:82.

Judgment of 17 April 2018, Commission v Poland (Białowieża Forest), C-441/17, EU:C:2018:255.

Judgment of 20 October 2005, Commission v United Kingdom, C-6/04, EU:C:2005:626.

Judgment of 20 September 2007, Commission v Italy, C-304/05, EU:C:2007:532.

Judgment of 21 July 2016, Orleans and Others, Joined Cases C‑ 387/15 and C‑ 388/15, EU:C:2016:583.

Judgment of 21 September 1999, Commission v Ireland, C-392/96, EU:C:1999:431.

Judgment of 24 November 2011, Commission v Spain, Case C-404/09 EU:C:2011:768.

Judgment of 25 July 2008, Ecologistas en Acción-CODA, C-142/07, EU:C:2008:445.

Judgment of 26 April 2017, Commission v Germany, C-142/16, EU:C:2017:301.

Judgment of 26 May 2011, Commission v Belgium, C-538/09, EU:C:2011:349.

Judgment of 26 October 2006, Commission v Portugal, C-239/04, EU:C:2006:665.

Judgment of 29 January 2004, Commission v Austria, C-209/02, EU:C:2004:61.

Judgment of 29 July 2019, Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen, C-411/17, Opinion of Advocate General Kokott, EU:C:2018:972.

Judgment of 29 July 2019, Inter-Environnement Wallonie and Bond Beter Leefmilieu Vlaanderen, C-411/17, EU:C:2019:622.

Judgment of 4 March 2010, Commission v France, C-241/08, EU:C:2010:114.

Judgment of 7 November 2018, Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu, Joined Cases C-293/17 and C-294/17, Opinion of Advocate General Kokott, EU:C:2018:622.

Judgment of 7 November 2018, Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu, Joined Cases C-293/17 and C-294/17, EU:C:2018:882.

Judgment of 7 November 2018, Holohan and Others, C‑ 461/17, EU:C:2018:883.

Judgment of 7 September 2004, Waddenvereniging and Vogelsbeschermingvereniging, C-127/02, EU:C:2004:482.

Other sources

"Energy: Hydrogen," European Commission, last modified 7 June, 2021, https://ec.europa.eu/energy/topics/energy-system-integration/hydrogen_en.

"Energy: Renewable energy directive," European Commission, last modified May 20, 2021, https://ec.europa.eu/energy/topics/renewable-energy/renewable-energy-directive/overview_en.

"Environment: Invasive Alien Species," European Commission, accessed on April 15, 2021, https://ec.europa.eu/environment/nature/invasivealien/index_en.htm).

"Environment: The Convention on Biological Diversity," European Commission, accessed April 2, 2021, https://ec.europa.eu/environment/nature/biodiversity/international/cbd/index_en.htm.

"Global Energy Review 2021: Overview," International Energy Agency, accessed April 2, 2021, https://www.iea.org/reports/global-energy-review-2021?mode=overview.

"The European Green Deal: The European Green Deal sets out how to make Europe the first climate-neutral continent by 2050, boosting the economy, improving people's health and quality of life, caring for nature, and leaving no one behind," European Commission, published December 11, 2019, https://ec.europa.eu/commission/presscorner/detail/en/ip_19_6691.

"World Energy Outlook 2020: Report extract, Overview," International Energy Agency, accessed April 2, 2021, https://www.iea.org/reports/world-energy-outlook-2020?mode=overview.

Alexandros Gasparatos, Christopher N.H. Doll, Miguel Esteban, Abubakari Ahmed, Tabitha A. Olang, "Renewable energy and biodiversity: Implications for transitioning to a Green Economy," Renewable and Sustainable Energy Reviews, Volume 70 (April 2017) Pages 161-184, ISSN 1364-0321, https://doi.org/10.1016/j.rser.2016.08.030.

Alicja Sikora, "European Green Deal – legal and financial challenges of the climate change," ERA Forum 21 (2021) Pages 681–697, https://doi.org/10.1007/s12027-020-00637-3.

Celia Le Lievre, "Sustainably reconciling offshore renewable energy developments with Natura 2000 sites: an adaptive management framework" (PhD Diss., University College Cork 2019).

International Energy Agency, Net Zero by 2050, A Roadmap for the Global Energy Sector (Paris, May 2021).

Ludwig Krämer, "The European Commission's Opinions underArticle 6(4) of the Habitats Directive," Journal of Environmental Law 21:1 (7 January 2009), doi:10.1093/jel/eqn028.

Vassiliki Kati, Christina Kassara, Zoi Vrontisi, Aristides Moustakas, The biodiversity-wind energy-land use nexus in a global biodiversity hotspot, Science of The Total Environment, Volume 768, 2021, 144471, ISSN 0048-9697, https://doi.org/10.1016/j.scitotenv.2020.144471.