

# **Creating compatibility between expansion of Hydropower and Conservation of Biodiversity:**

*A comparative analysis between the stand taken by Portugal and  
Norway*

A MASTERS THESIS FOR ENVIRONMENTAL LAW

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## **PREFACE**

This thesis is about the development and promotion of renewable energy. The spectrum of renewable energy is pretty broad. I have focused on hydro electricity. Though hydro electricity is said to be green but it has also a negative impact on biodiversity. I have chosen Norway and Portugal as case study for my thesis. The main idea is to compare the rules and regulation of renewable energy and biodiversity protection in both of the countries. And the reason behind this is that Norway is one of highest hydroelectricity producer country and contrary to this Portugal is still trying to promote hydroelectricity to meet the EU RES target.

To be very honest, beginning of writing of this thesis I was very sure that I will not be able to complete my writing. But today at the end of this thesis I am feeling happy and proud, and extremely lucky to get the chance to be a part of this unique masters program and become a graduate from these three renowned universities of the world. A warm thanks to my NOMPEL colleagues for their constant support. Specially Achini Disanayaka, Leonel Mensel, and Lora Puzach who has always inspired me not to give up. A vote of gratitude to all my professors from all three universities. I would also like to thank my supervisor Harsh Vardhan Bhati from Uppsala university to have faith in me and helped me in every step through this writing.

Lastly I would like to thank my family specially, to my husband who never stopped believing in me and always motivated me to do this Masters course.

## Contents

1.1: Background	6
1.1.1: <i>EU</i> Carbon-Neutrality Objectives 2050	6
1.1.2 <i>EU</i> Biodiversity Conservation Objectives	7
1.1.3 Scope for compatibility	9
1.2 Research Question	9
1.3 Delimitation and scope:	10
1.4 Structure:	13
Methodology:	14
Chapter Two: EU Legal Regime on Creating Compatibility between Expansion of Hydropower and Conservation of Biodiversity	16
2.1 EU Legal Regime on Expansion of Hydropower	16
2.2 EU Legal Regime on Conservation of Biodiversity	20
2.2.1 Natura 2000 Protected Sites	21
2.2.2 Water Framework Directive	22
2.2.3 The SEA and EIA Directives	23
2.3 Effects of Hydropower on European rivers and Biodiversity	25
2.4 EU Legal Recourse on Compatibility Zone	26
Chapter Three: Derogation Rule: Curse in Disguise?	29
3.1 Derogation Rule with Nature Directive and WFD	29
3.2 Distinguishing between ‘Public Interest’ and ‘Overriding Public Interest’	30
3.2.1 Weighting Benefits of a Project against Foregone Opportunities of Conservation	31
3.3 Protected only in Paper, not in Practice	32
3.4 Infringement Procedure	34
4. Savour Dam of Portugal	36
4.1 Background	37
4.2 Effect of Sabor Dam on Biodiversity	38
4.3 Blatant Abuse of Derogation Rule under the Nature Directives	39
4.4 ‘Insincere’ Infringement Proceedings against Portugal	40
4.4.1 Grounds for Infringement Procedure	40
4.4.2 Political Priority: Placing Biodiversity in the Back Seat	42
4.5 Lack of Adequate Public Involvement in EIA and SEA.	44
5. The stance taken by Norway	47
5.1 Legal Framework of Norway on Renewable Energy and Biodiversity	48

5.1.1 Emphasis on Licensing Process	48
5.1.2 Environment Impact Assessment and Public Involvement	51
5.1.3 Mitigation Measures	53
5.2 Following the (Nor)way towards Compatibility Zone	55
Chapter Six: Conclusion	56
6. Conclusion	56
Works Cited	

## **Abstract**

Expansion of renewable energy is at the very centre of the European Green Deal. In every possible energy mix policy in the EU, it has been found that hydropower is and will continue to remain as an integral part of it. However, on the path of reaching for carbon-neutrality, the EU right now settled with this hydropower as an unavoidable renewable energy source which is not completely green. It's already known effect on the environment, river ecology and protected sites has been a matter of environmental protest from activists. Because combat against climate change is not only confined within the development of renewable energy. Rather conservation of biodiversity and recovery of EU's biodiversity loss throughout the last decades is another crucial pillar of sustainable development and also green deal.

However, with a nationally binding target for renewable energy for each member state through RED I, the EU-countries achieved a new drive and incentive for extending their renewable energy programme. Not surprisingly, hydropower as a leading means of renewable energy throughout Europe created unprecedented pressure on the already vulnerable river ecology. The 'hydropower tsunami' all over the EU, bringing out frequent clashes between renewable energy expansion and biodiversity conservation of the concerned area.

EU legal regime on biodiversity conservation affords somewhat sufficient protection against this incessant hydropower expansion regardless of its effect on environment, nature and protected species. However, protection given in paper for biodiversity are very often downright ignored in many cases when conservation remains at odds with development of hydropower. This attitude towards biodiversity conservation is proved by the existence of hydropower in the EU's protected site in alarming quantities. One of the most impressive contributions in generating a 'balanced trade-off' between hydropower and biodiversity is coming out of public participation in the EIA process of a concerned project. Derogation rules provided in the nature directives actually work as a safety net for the environment against controversial hydropower projects if implemented accurately and sincerely.

It is also time to evaluate hydropower and its position in the renewable energy mix in light of its environmental impact. As long as the renewable energy development in the EU is largely dependent on hydropower, nothing could be more important to pursue it with as much precaution and impact mitigation measures as possible. The EU's robust legal regime on

biodiversity often becomes futile at the national level if the government is not committed to the cause. The Sabor Dam incident of Portugal is such proof of shoddy implementation of the biodiversity laws, even abuse of derogation rule. In the thesis, the 'zone of compatibility' has been tried to find out within the existing legal recourse.

## 1.1: Background

### 1.1.1: EU Carbon-Neutrality Objectives 2050

In pursuant to the Paris **Agreement**, EU has invested significant effort and pushed their ambition to become the pioneer and role model in creating a low carbon economy. In March, 2015 EU produced their ‘combating climate change plan’ (i.e intended Nationally Determined Contribution or "INDC") which was in line with the 2030 climate and energy policy framework set by the October 2014 European Council.<sup>1</sup> The EU also presented the European Commission's blueprint for tackling global climate change beyond 2020.<sup>2</sup> Through the framework, the EU has set out an ambitious goal of at least 40% reduction of greenhouse gas (GHG) emission by 2030.<sup>3</sup> To incorporate the vision of establishing a carbon-neutral energy society, *EU Energy Roadmap 2050* has been presented.<sup>4</sup> While this roadmap prescribed various ways towards decarbonization of the energy system<sup>5</sup>, all of these different routes suggest that ‘renewable energy’ would be the leading component of modern clean energy mix in Europe.<sup>6</sup> Therefore, to fulfil the goal of transitioning the total energy system towards greener sides requires a broad expansion of usage of renewable energy.<sup>7</sup> Among many legislative acts adopted by the EU to create a sustainable energy system, *Renewable Energy Directive* is the most crucial one. It requires each member state to meet their individual renewable energy target.

Hydropower remains to be a leading renewable energy source by contributing a 13 percent share of total electricity generated in Europe in 2020, up 4 percent from 2019 — more

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<sup>1</sup>European Council conclusions of 24 October 2014.

<sup>2</sup>the Paris Protocol – A blueprint for tackling global climate change beyond 2020, COM(2015) 81 final

<sup>3</sup>*Ibid.*, p5.

<sup>4</sup> This strategy presents that the EU is committed to reducing the union’s GHG emissions to 80-95 % below 1990 levels by 2050; see COM(2011) 885 final, p. 2.

<sup>5</sup> See COM(2011) 885 final, p. 4 et seq. In all the scenarios the analysis shows that renewable energy will constitute the biggest share of energy supply in 2050.

<sup>6</sup> *Ibid.*, p. 7

<sup>7</sup> Melina Malafry, 'Biodiversity Protection in an Aspiring Carbon-Neutral Society: A Legal Study on the Relationship between Renewable Energy and Biodiversity in a European Union Context' [2016] UUP , 14.

renewable electricity than all other renewable sources combined.<sup>8</sup> “Hydropower plays a key role in the implementation of the Renewable Energy Directive and in contributing to the EU energy targets for 2020-2030.”<sup>9</sup> Till 2019 a total of 19,268 plants in the EU already exist, 5734 are planned to be built, and 122 are already under construction.<sup>10</sup> In Portugal, the number of large run-of-the-river plants increases each year. Hydropower in Norway is growing steadily, especially for small hydropower plants and pumped storage ones.<sup>11</sup> For the sake of this dissertation, the situation regarding development of hydropower only in these two countries (Portugal, Norway) is mentioned and will be further elaborated.

### 1.1.2 EU Biodiversity Conservation Objectives

While the EU envisions promoting large-scale development of renewable energy keeping the purpose of sustainable development in mind, they can not forget about their obligation to conserve biodiversity. Rather to create a win-win situation a pave to be created which simultaneously reduces GHG emission and protects biodiversity.

In 1992 the United Nation Convention on Biological Diversity(CBD) came into force to which the EU is a party. In 2002 EU pledged a somewhat ambitious target to halt biodiversity loss in the EU by 2010.<sup>12</sup> However, the EU failed to meet their target.<sup>13</sup> The *2030 Biodiversity Strategy* was presented by the European Commission which is the central policy document for the future of Europe, within the framework of the *EU Green Deal*, on the 20th of May 2020. The 2030 biodiversity prescribes and frames EU nature objectives for the upcoming 10

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<sup>8</sup> IEA (2021), Renewable Power, IEA, Paris <<https://www.iea.org/reports/renewable-power>>

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<sup>9</sup> European Commission, Guidance on the Requirements for Hydropower in relation to EU Nature Legislation, 2018

<sup>10</sup> Ulrich Schwarz, Hydropower pressure on European River: The Story in Number (1st, commissioned by WWF, RiverWatch, EuroNatur, GEOTA, 2019) p 9.

<sup>11</sup>Ibid, p 4.

<sup>12</sup> Presidency Conclusions, European Council meeting in Gothenburg [2001] SN 200/1/01REV1

<sup>13</sup> Commission Regulation (EU) No 548/2010 of 22 June 2010 determining the extent to which the import licence applications submitted in June 2010 for certain milk products under certain tariff quotas opened by Regulation (EC) No 2535/2001 can be accepted, COM/2010/548 final



years. The two main objectives of the Biodiversity Strategy is to “improve and widen our network of Protected Areas and develop an ambitious EU Nature Restoration Plan.”<sup>14</sup>

*Bird Directive* and *Habitat Directive* are two cornerstones of EU nature law. As to the *Habitat Directive*, ‘Measures taken pursuant to this Directive shall be designed to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest.’<sup>15</sup> The core habitats of species listed in Annex 1 & 2 under the *Habitat Directive* and annex 1 of *Bird Directive* are designated as sites of Community importance (SCIs) which are also included in the Natura 2000 network.<sup>16</sup> EU Natura 2000 Network covers around 27500 sites and 4% of the Natura surface area consisting of lake and river ecosystems.<sup>17</sup>

*Water Framework Directive* (WFD) is one of the most ambitious pieces of EU environmental legislation. Member states of the EU are required to ensure all of their rivers are healthy and of good status within 2027 under the *Water Framework Directive*.<sup>18</sup> Moreover, under ‘the non-derogation rule’ of the directive no member states can implement any development project which will negatively affect the freshwater ecosystem.<sup>19</sup> WFD and *Habitat Directive* are keenly interlinked as the suitable habitat of underwater species significantly depends on the condition of the water.

The EU somewhat bravely announced their target to halt the loss of biodiversity within 2020 stating, “Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.”<sup>20</sup> However, evidence of letting the renewable energy

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<sup>14</sup>Communication (EU) ‘EU Biodiversity Strategy 2030’, COM/2020/380 final, p 4.

<sup>15</sup>Art 2, Council Directive 92/43/EEC.

<sup>16</sup> European Commission, Guidance on The Requirements for Hydropower in relation to Natura 2000, 2018, p 7

<sup>17</sup>EEA, 2010. The European environment — state and outlook 2010: synthesis. European Environment Agency, Copenhagen.

<sup>18</sup> Ulrich Schwarz, Hydropower pressure on European River: The Story in Number (1st, commissioned by WWF, RiverWatch, EuroNatur, GEOTA, 2019) p 11.

<sup>19</sup> Art 4, Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L 327.

<sup>20</sup>See COM(2011) 244 final, p. 2. The EU strategy has its roots in the Convention on Biological Diversity (CBD), which adopted a global Strategic Plan for biodiversity (2011-2010),

projects including hydropower plants slide despite its assessed deteriorating effect on biodiversity will not get the EU anywhere near the target soon.

### **1.1.3 Scope for compatibility**

EU policy makers take the strategy to put climate change and biodiversity conservation policy as complementary. However, in practice, the strong legislation laid for conservation of biodiversity faced weak enforcement. Therefore, in the face of dynamic expansion of renewable energy, biodiversity conservation took a back seat regarding priority. For example, In October 2003, construction activities at a large terrestrial wind farm in Derrybrien, Ireland, appear to have been the trigger for a landslide which caused an “ecological disaster”, when the mass of peat which was dislodged polluted the Owendalulleagh river, causing the death of around 50,000 fish and lasting damage to the fish spawning beds.<sup>21</sup>

“We cannot halt biodiversity loss without addressing climate change,....but it is equally impossible to tackle climate change without addressing biodiversity loss. It is therefore essential that climate change policy is fully complementary with biodiversity policy”<sup>22</sup>. Though the policy often argues this evidence suggests that renewable energy projects often took place being at odds with biodiversity conservation by taking advantage of the ‘derogation rule’ given in environmental legislation, i.e. *Habitat Directives, Water Framework directives*. In some instances, a state doesn’t even seek protection under ‘the derogation rule’, rather outright ignores their obligation under biodiversity conservation legislations and directives. As a case study regarding this matter, In chapter 4, the controversial Savor Dam hydropower project of Portugal will be studied and discussed.

## **1.2 Research Question**

The research focuses on the legal shortcomings due to lack of enforcement of legislations regarding nature and environment, in the area of creating compatibility between expansion of  

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adopted at the COP 10, in Nagoya 2010.

<sup>21</sup>Case C-215/06 *Commission of the European Communities v. Ireland* [2008] E.C.R. I-4911, para 84

<sup>22</sup> European Commission Conclusions, 27–28 April 2009, ‘Biodiversity Protection– Beyond 2010: Priorities and options for future EU Policy’, Athens Conference arranged by European Commission.

renewable energy and conservation of biodiversity. As hydropower is one of the most prominent renewable energy sources in the EU member countries<sup>23</sup>, the discussion of this thesis will revolve around it. The main research question is "Whether EU member states took effective legislative and executed measures to create compatibility between expansion of hydropower and Conservation of biodiversity."

Under the frame of the primary research question this thesis will explore the complementary aspect of EU legislations in relation to development of renewable energy (in this thesis hydropower) and conservation of biodiversity. However, understanding the scope and use of the derogation rule given in the nature and environment legislation, is crucial for effective discussion on this topic. In the face of urgency for hydropower expansion and protection under derogation rules, EU Biodiversity legislations often become 'strong law, weak enforcement.' Taking advantage of this situation and ignoring obligations to protect the water quality and protected sites, it is not hard as the evidence suggests.<sup>24</sup> Therefore, to answer the primary research question, the following sub-questions are framed-

- a. Whether the EU renewable energy and biodiversity conservation legislations are complimentary with each other?
- b. How much protection the derogation rules to the nature laws are providing to continue renewable energy projects which have adverse impact on the environment?
- c. Whether member states (in this thesis Portugal) meet their obligation under nature and environment directives?
- d. Is there any possibility of finding legal compatibility between expansion of hydropower and conservation of biodiversity?

To answer the fourth sub-question, Norway has been taken as a case study whereas to answer the third Portugal has been taken. The reason behind picking this pair to make comparative analysis is detailed in the 'delimitation and scope'(1.3) section.

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<sup>23</sup>Hydropower contributed 35% of the EU's green energy mix in 2019 ensuring its strong presence in the renewable energy market.

<sup>24</sup> Andrew L.R Jacson, "Renewable energy vs.biodiversity: Policy conflicts and the future of nature conservation" (2011) 21 GEC 1195.

### 1.3 Delimitation and scope:

The thesis inquires into primarily two issues. Firstly, what is the reason behind EU member countries putting conservation of biodiversity in the bottom of their priority list while biodiversity conservation was supposed to be complimentary with the expansion of hydropower. Secondly, why pick Portugal and Norway to make a comparative analysis regarding their stands taken to create compatibility between conservation of biodiversity and development of renewable hydropower.

To answer the first question, It has been seen that, the legislative approaches towards conservation of Biodiversity and expansion and expansion of renewable energy are quite different. While the first one revolves around conservation, protection, taking precaution and maintaining sustainability; On the other hand energy transition towards renewable energy deals with production, supply, consumption and economic growth.<sup>25</sup> In the face of growing energy demand and EU's legally binding renewable energy target for each member state, it creates pressure on the government and policies of a state to put the renewable energy project in their urgent to-do list. Moreover, The environmental legislations and policies (i.e *Water Framework Directive*) provide derogation rules for exceptional circumstances where projects having adverse effects over biodiversity can be carried on provided that the environmental impact of the project is properly assessed by EIA.<sup>26</sup> The *Habitat Directive* also has this kind of derogatory rule.<sup>27</sup> These two factors combined are generating a breeding ground of

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<sup>25</sup>Tomain, P. Joseph, "The Democratization of Energy" (2015) Vol. 48 No. 4 Vanderbilt Journal Transnational Law, 1125-1145, at 1132.

<sup>26</sup> Article 4(7) of the Water Framework Directive (2000/60/EC) provides details of the derogatory regime from the general obligation to prevent deterioration from high status to good status of a body of surface water is the result of new sustainable human development activities and to achieve good groundwater status, good ecological status or, where relevant, good ecological potential or to prevent deterioration in the status of a body of surface water or groundwater. As the first step of the process to grant the exception, an applicability assessment is required. Its purpose is to assess how a proposed project is expected to affect the environmental objectives of the affected water bodies. If the project may cause deterioration / compromising the achievement of good status/potential, then it can only be authorised in case the conditions as outlined under Article 4(7) (a) to (d) are fulfilled.

<sup>27</sup> Article 6.3 of Habitat Directive (Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora) concerns the assessment procedure for any plan or

renewable energy projects indifferent to the adverse impact on the environment or biodiversity. For example, at present there are 3557 existing hydropower projects in the EU which are continuing to be run on the protected areas and sites.<sup>28</sup>

Regarding the second issue, Norway is the country which fulfils the largest share of its electricity demand using hydroelectricity. Already all rivers are exploited. That includes even the rivers which are in the more densely settled southern part of the country.<sup>29</sup> However, not being an EU member country, Norway incorporated the *Water Framework Directive* voluntarily as part of their statutory legislations in 2009.<sup>30</sup> If they fulfil their obligation under this directive while being a high hydropower dependent country, that would be an interesting ground to explore to understand the possibility of compatibility between conservation of biodiversity and development of renewable energy. On the other hand, BaixoSabor Dam, a hydropower project of Portugal, is already considered a classic example of conflict between conservation of biodiversity and expansion of renewable energy.<sup>31</sup> Even though Portugal, as an EU member, has obligations under all EU directives, that didn't stop them from going along with such a controversial project. The role of the EU as a silent spectator regarding the matter is observed in the thesis. Overall, to find the compatibility zone, if any, between expansion of hydropower and preservation of biodiversity, two contrasting situations are needed. The stands taken by Norway and Portugal regarding this matter thus become the case studies in this thesis.

The economic, social and political aspect of biodiversity conservation and renewable energy policy individually is not under the purview of the thesis. Some political situation that emerges when these two clashes shall be discussed here. While focusing on Portugal, the

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project that could affect one or more Natura 2000 site. In essence, the assessment procedure requires that any plan or project that is likely to have a significant effect on a Natura 2000 site undergoes an appropriate assessment (AA) to study these effects in detail, in view of the site's conservation objectives.

<sup>28</sup> Ulrich Schwarz, *Hydropower pressure on European River: The Story in Number* (1st, commissioned by WWF, RiverWatch, EuroNatur, GEOTA, 2019) p 9.

<sup>29</sup> *Ibid*, p 25

<sup>30</sup> Norway is connected to the European Union as an EFTA country, and voluntarily participates in implementing the WFD. Therefore, WFD has been incorporated into Norwegian legislation.

<sup>31</sup> Andrew L.R Jacson, *Renewable energy vs.biodiversity: Policy conflicts and the future of nature conservation* (2011) 21 GEC 1195

sabor dam incident as a case study was more emphasised than the state's national legislations. The reason behind this, to understand the philosophy behind an approved individual project having a significant effect on the environment as a case study where EC themselves got involved, however not gracefully. Through this case the lack of commitment of EC towards biodiversity has been identified. In the case of Norway, rather than depending much on case study to find out EC's role, since there is not any, the national legislation of the country has been discussed. The scope of the thesis shall not be extended to figuring out the long awaited 'compatibility zone' all together, but analysing if there is a chance of complementarity between the legal recourse on the hydropower expansion policy and biodiversity conservation.

#### **1.4 Structure:**

The thesis is divided into six chapters.

Introduction chapter will give a short description of my paper. For example it will describe the current situation of climate change and energy transition, overall targets of emission of EU, Natura 2000, Habitat Directive, Water Framework Directives and their objectives. furthermore it will also include how the development of hydropower having an adverse effect over biodiversity.

Chapter 2 will further analyse the existing legislations and policy instruments to describe the EU perspective on developing hydropower [achieving carbon neutrality by 2050 and meeting Paris Agreement Goal of limiting the world temperature below 2 degree] and the reason behind the extensive support of its projects. Then this chapter will further show the link and conflicts between development of hydropower and biodiversity protection. While doing so, the existing legal regime of the EU will be used as the fundamental resort.

Chapter 3 will focus on the derogation rules under Habitat Directive, Bird Directives, Water Framework Directive. On one hand, the EU has a target to control and mitigate biodiversity loss by 2020. On the other hand, the EU is promoting Renewable energy on a larger scale to reduce CO2 emissions. And these renewable projects are clashing with the biodiversity [natura 2000] objectives. Where it is undoubtedly true that renewable energy projects are one

of the main solutions to reduce the CO2 emission and mitigate climate change effects, it could always be easily justifiable to approve these projects under derogation rules [imperative reasons for overriding public interest]. There are cases where the projects have been approved after knowing that these projects will have an adverse effect to the Natura 2000 site and even where the alternatives were available.

Chapter 4 will be focused on, known as 'Plant Disaster', the Savor dam case of Portugal will be presented in this chapter as an example of overriding public interest for imperative reasons. From a legal perspective this chapter will discuss the reasons behind approving these projects and what EIA report mentioned, why the environmentalists were against these controversial projects. This chapter will also analyse the criteria under which the EU at last withdraw their case against Portugal.

Chapter 5 will be based on the discussion of previous chapters. In the light of the discussion of conflicts between expansion of hydropower and biodiversity conservation and in the presence of derogation rule, in this chapter I would try to find an example which can show some possibility of creating compatibility. For this I would take the stand taken by Norway regarding this matter as case study given their history of significant reliance on hydropower. This will help to understand whether balancing is actually possible in reality.

In Chapter 6 recommendation would be provided in this chapter along with the conclusion.

### **Methodology:**

In this thesis the method which would be followed is legal doctrinal analysis to answer the research questions and sub-questions. Throughout the thesis this method intends to focus on and contextualise the EU legal regime of energy transition and biodiversity conservation. In addition, another key component of the thesis will be providing a comparative legal examination through the analysis of the implementation mechanism of an EU member country (Portugal) and a Nordic country (Norway) of their obligation to conserve and protect biodiversity. The research will engage journals, articles, EU legal instruments and documents, and also case law, as well as national legislations and cases of Portugal and Norway, where applicable, to achieve a keen understanding on the legal compatibility zone between hydropower projects and conservation of biodiversity.

This thesis will adopt an internal approach to the legal problems regardless of its nature either about content or implementation. This means, I would use an internal perspective of law to analyse the concept of expansion of hydropower and conservation of biodiversity being complementary with each other. The same approach will be used to observe the obligation of Portugal and Norway regarding maintaining the compatibility and to what extent it is fulfilled. The role of EU and EIA following any breach of the biodiversity conservation obligation by a member state is also observed through the same lens of the law. While analysing EU instruments in Portugal and Norway, I rely on their national legislations which have been enacted for the purpose of incorporating the relevant EU legal instruments.

Finally, It is important to mention that to understand the environmental impact of hydropower projects on biodiversity, nature science became sometimes relevant in this thesis. The nature science revolving around the problem gives us the background of the legal complications. To incorporate this aspect in the thesis, I relied on the data given by the researcher of this area, for example, EIA reports, research paper of WWF and Riverwatch on the impact of hydropower on the rivers of Europe.<sup>32</sup>

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<sup>32</sup>Ulrich Schwarz, Hydropower pressure on European River: The Story in Number (1st, commissioned by WWF, RiverWatch, EuroNatur, GEOTA, 2019)



## Chapter Two: EU Legal Regime on Creating Compatibility between Expansion of Hydropower and Conservation of Biodiversity

### 2.1 EU Legal Regime on Expansion of Hydropower

The United Nation Framework Convention on Climate Change (UNFCCC) which came into force in 1994 provides a specific objective for its member states to stabilise GHG emission "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system....such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner."<sup>33</sup> The convention expected the developed countries to emerge as pioneers and leaders in this combat against climate change.<sup>34</sup>

The European Economic Community (EEC) felt the necessity to develop renewable energy technologies in the 1970s following the global energy crisis in 1973-74.<sup>35</sup> The first programme was started to research, develop and demonstrate renewable energy technologies in 1974 financed by EEC, understanding its ability to meet energy security and climate change concerns.<sup>36</sup> Even in that early stage the member states realised that the effectiveness of these renewable energy programmes would be largely dependent on the co-operative actions between the members rather on individual's isolated and scattered effort.<sup>37</sup> However, This joint effort by the community to develop renewable energy could not solve the lack of political push and commitment for the promotion of renewable energy sources.<sup>38</sup>

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<sup>33</sup> UN General Assembly, United Nations Framework Convention on Climate Change : resolution / adopted by the General Assembly, 20 January 1994, A/RES/48/189.

<sup>34</sup>Ibid

<sup>35</sup> Yuliya Milto, *Legal Framework of Renewable Energy Sources in the European Union* (2017); available at <[http://amsdottorato.unibo.it/7937/1/Milto\\_Yuliya\\_tesi.pdf](http://amsdottorato.unibo.it/7937/1/Milto_Yuliya_tesi.pdf)>

<sup>36</sup>John Macmullan and Albert Strub, *Achievements of the European Community First Energy R & D Programme*, Kluwer Boston [distributor] The Hague ; Boston : Hingham, MA, 1981.

<sup>37</sup>Communication from the Commission to the Council, "*Scientific and Technological Research and the European Community Proposals for the 1980s*" COM/81/574 final.

<sup>38</sup>Opinion on the proposal for a Council Decision adopting a specific research and technological development programme in the field of energy—non-nuclear energies and rational use of energy—1989-1992 'JOULE' (Joint opportunities for unconventional or long-term energy supply) (89/C 23/09).

Consequently, until 1996 energy from renewable energy sources only contributed 6% of the energy consumption of the Union.<sup>39</sup>

The White Paper(1997) first addressed the need of a community-wide comprehensive policy for the development and promotion of renewable energy which would bring out the concept from isolation and integrate it with other policies like energy, environment, taxation, technological development etc.<sup>40</sup> The White Paper set out the objective for the Union of meeting the target of 12% energy consumption from renewable energy sources by 2010 and for achieving this goal of doubling up the contribution of renewable energy, effective legislative measures are necessary.<sup>41</sup> The commission presented a long-term framework for the whole Union on sustainable development in 2001 which emphasized that this kind of development should be done in line with the contribution of clean energy from renewable energy in the internal energy market.<sup>42</sup> Undoubtedly, the *Kyoto Protocol(1997)* played a significant role behind this policy providing binding responsibility to reduce GHG emission on the developed and industrialized countries including the European Union. The European Union set out a target of 8% reduction of greenhouse gas emissions for the period 2008 to 2012 compared to 1990.<sup>43</sup> It is worth mentioning that the EU over-achieved their emission reduction goal by reaching almost 12.2% cut.

In 2001 the first crucial piece of legislation strategizing the promotion of renewable energy in the internal energy market came into existence.<sup>44</sup> Through this directive the member states for the first time in history set ‘national indicative targets’ for themselves for the next ten years regarding the future use of electricity from renewable energy sources (RES). The directive provided some progressive stands like requiring the member states to provide open access to electricity produced from RES, implementation of appealing support schemes, supportive

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<sup>39</sup>Communication from the Commission, “*Energy for the Future: Renewable Sources of Energy. Green Paper for a Community Strategy*” COM/96/576 final.

<sup>40</sup>Communication from the Commission, “*Energy for the Future: Renewable Sources of Energy. White Paper for a Community Strategy and Action Plan*”COM(97)599 final. (26/11/1997)

<sup>41</sup> Ibid

<sup>42</sup>Report from the Commission “*Annual Report on the Implementation of the Gas and Electricity Internal Market*”COM(2004) 863 final.

<sup>43</sup>Report to the Council and the European Parliament on *Harmonisation Requirements Directive 96/92/EC Concerning Common Rules for the Internal Market in Electricity* COM(1998) 167 final.

<sup>44</sup> 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.

administrative regime and assurance of fair grid access etc.<sup>45</sup> However, the directive failed to inspire the member states to be committed to the reason as to their actual capability and a big room for improvement in taking active action plans to support renewable energy was present in some of the member states.<sup>46</sup> Also, the directive could not address the lack of co-ordinated support schemes for renewable energy by all the member states.

In 2009 a new directive usually known as the *Renewable Energy Directive* was adopted by the commission.<sup>47</sup> The new directive reflected the objective of forming the energy system in the EU based on sustainability, energy security and competitiveness which was set out in 2006 in The Green Paper “A European Strategy for Sustainable, Competitive and Secure Energy”.<sup>48</sup> This directive (thereafter, RED I) provides a legally binding obligation on every member state to meet their nationally determined target for renewable energy and the binding nature of this directive created a significant positive difference in regard to commitment of individual states towards the promotion of renewable energy.<sup>49</sup>

Moreover, in 2009 the EU through the *Treaty of Lisbon* framed an objective of putting ‘new and renewable energy sources’ in the centre of EU energy policy.<sup>50</sup> This objective was again confirmed in the art 191(1) in the TFEU<sup>51</sup>, providing objectives of protecting, preserving and improving the quality of the environment while prudent and rational utilisation of natural resources.<sup>52</sup> All of these robust legislative efforts created a significant push towards

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<sup>45</sup>Ibid

<sup>46</sup> Communication from the Commission to the Council and the European Parliament, “*The share of renewable energy in the EU Commission Report in accordance with Article 3 of Directive 2001/77/EC, evaluation of the effect of legislative instruments and other Community policies on the development of the contribution of renewable energy sources in the EU and proposals for concrete actions*” COM(2004) 366 final.

<sup>47</sup> 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.

<sup>48</sup> Green Paper “A European Strategy for Sustainable, Competitive and Secure Energy” COM(2006) 105 final.

<sup>49</sup> U RoBegger, “*New Debate About the Harmonization of the EU’s Support Instruments for Renewables and Binding Targets’ Relevance?*” (2013) 4 *Renewable Energy Law and Policy* 254.

<sup>50</sup> Treaty of Lisbon Amending the Treaty on European Union and the Treaty Establishing the European Community [2007] OJ C306/1

<sup>51</sup> Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C326/47 (TFEU).

<sup>52</sup> Alesandro Monti, Beatriz Martinez Romera, “*Fifty shades of binding: Appraising the enforcement toolkit for the EU’s 2030 renewable energy targets*” (2020) 29 *RECIEL* 221

development of renewable energy. The binding nature of meeting the nationally indicative target for each state constituted a pro-green energy economic sector.<sup>53</sup> It is noticeable that the concept of legally binding targets started to be formed after the RED-I came into force.<sup>54</sup> RED-I is the first ‘comprehensive’ piece of legislation regarding the promotion and development of RES which addressed consumption of energy sector by sector, not being solely focussed on electricity generation and consumption as a whole. For example, *RED-I* explicitly require the member states to meet the EU target of 20% share of renewable energy in the gross final energy consumption which includes heating, cooling, transportation and also electricity, by setting a legally binding and differentiated target for the member states. It is mentionable that the energy needed for heating and cooling constitutes almost half of energy demand in the EU, finally coming under the purview of RE legislative measures.

While the legally binding targets for the member states play a key drive for the further development of renewable energy, it does not stop there. It introduces support schemes and co-operation strategies among the member states. Although State level cooperation mechanisms exist between Norway and Sweden sharing hydroelectricity, this joint scheme might be extended by including more states.<sup>55</sup> Tax exemption, Quota Obligation, Feed-in-tariffs, Feed-in-priminus, and investment aids are the most common form of support schemes for development and promotion of renewable energy. Whether a EU-wide support scheme for renewable energy would increase the cost-effectiveness of the support schemes has been a matter of debate. However, this kind of harmonised support system does not exist now, due to the member state’s autonomy to create their own action plan based on market, though simultaneously keeping a binding target for renewable energy. Also, member states have the right to structuralize their own energy supply system and to choose between different energy sources.<sup>56</sup>

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<sup>53</sup> Commission (EU), “*The Renewable Energy Progress Report: Commission Report in accordance with Article 3 of Directive 2001/77/EC, Article 4(2) of Directive 2003/30/EC and on the implementation of the EU Biomass Action Plan, COM(2005)628*” COM/2009/192 final, 2.

<sup>54</sup> Alesandro Monti, Beatriz Martinez Romera, “Fifty shades of binding: Appraising the enforcement toolkit for the EU’s 2030 renewable energy targets” (2020) 29 RECIEL 221

<sup>55</sup> Commission Staff Working Document “European Commission guidance for the design of renewables support schemes” SWD (2013) 439 final.

<sup>56</sup> Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C326/47, art 194(2)

With all the effort the EU showed high ambition for renewable energy and RED-I had a crucial role behind it. The EU was able to meet their renewable energy goal of 20% use of renewable energy to meet the final energy consumption. The 2030 roadmap only sets a legally binding target of 32% share from renewable energy for the EU as a whole, where individual member states do not have any legally binding target.<sup>57</sup>

Hydropower contributed 35% of the EU's green energy mix in 2019 ensuring its strong presence in the renewable energy market.<sup>58</sup> As one of the leading renewable energy sources it still has and will continue to have a strong grip on the member states renewable energy goal.

## 2.2 EU Legal Regime on Conservation of Biodiversity

The conservation of biodiversity is a crucial part of sustainable development goals like expansion of renewable energy. Hydropower, in every possible scenario to meet the renewable energy target, has a major role.<sup>59</sup> However, like any water-based active hydropower projects in the EU must be compatible with other EU environmental laws. Habitat Directive, Birds Directive, Water Framework Directive and Flood Directive usually come in contact with hydropower projects and provides legal requirements to commence and continue such projects.

Although the rivers of Europe have always been a crucial source of biodiversity, “most rivers are now in a degraded state and in need of restoration.”<sup>60</sup> In 2011 the commission set out a somewhat ambitious goal to halt and reverse the biodiversity loss by 2020.<sup>61</sup> *EU Biodiversity Strategy to 2020* provides six manual targets which covers the major causes of biodiversity loss. For example, Full implementation of the Birds and Habitat Directives was one of the objectives of this strategy.<sup>62</sup>

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<sup>57</sup> European Commission, ‘Questions & Answers on EU Ratification of the Second Commitment Period of the Kyoto Protocol’ (6 November 2013)

<sup>58</sup> Hydropower contributed a 13 percent share of total electricity generated in Europe in 2020, up 4 percent from 2019 — more renewable electricity than all other renewable sources combined, according to the IEA.

<sup>59</sup> European Commission, “*Guidance on the Requirements for Hydropower in relation to EU Nature Legislation*” (2018)

<sup>60</sup> Ibid.

<sup>61</sup> European Commission, “*Our Life Insurance, Our Natural Capital: an EU Biodiversity Strategy to 2020*” COM/2018/244 final.

<sup>62</sup> Ibid.

The *Habitat Directive* introduces the concept of favourable conservation status (FCS) and sets the conditions for the conservation status of a natural habitat and species to be considered as ‘favourable’.<sup>63</sup> To reach the favourable conservation status for the habitats and species of the EU, the directive requires the member states to implement measures for designation and conservation of the sites of *natura 2000*.<sup>64</sup> The conservation of the sites under *natura 2000* is crucial for the preservation and conservation of habitats and species listed in annex 1 and 2 of the directive.

*“These sites make up the EU-wide Natura 2000 Network which currently contains over 27 500 sites. Lake and river ecosystems cover around 4 % of the total surface area of Natura 2000.”*<sup>65</sup>

The Habitat Directive also requires the member state to create a ‘species protection regime’, for the protection and conservation of the wild birds and other species listed under annex iv of the directive. This protection regime can even be extended outside of *Natura 2000* sites, covering the natural ranges of the species within the whole EU.<sup>66</sup> The directive prescribes the member states to take necessary measures prohibiting deterioration, disturbance and destruction of these species and its breeding sites or nesting place.<sup>67</sup>

“The species protection provisions are highly relevant to hydropower facilities operating also outside *Natura 2000* sites. They aim to ensure that any new developments do not destroy the breeding and resting sites of any wild bird or any species listed under Annex IV of the Habitats Directive”<sup>68</sup>

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<sup>63</sup>Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, art 1.

<sup>64</sup>*Ibid.*

<sup>65</sup>European Commission, “*Guidance on the Requirements for Hydropower in relation to EU Nature Legislation*” (2018), p 7

<sup>66</sup>Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, art 12

<sup>67</sup>*Ibid.*, art 12 (1)

<sup>68</sup>European Commission, “*Guidance on the Requirements for Hydropower in relation to EU Nature Legislation*” (2018), p 9

### 2.2.1 Natura 2000 Protected Sites

The Natura 2000 protected sites are considered as special areas of conservation, introduced in the Habitat Directive. It stated,

*“For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.”*<sup>69</sup>

Article 6(2) of the directive requires member states to take appropriate steps to stop the further deterioration of these special areas which might affect the natural habitats of the species there. Article 6(3) of the directive holds a significant key for the understanding of the relationship between protection of the sites and use of the land having effect on the site; for example, development of hydropower. Any project or plan, even though it concerns development of renewable energy having a deteriorating effect on the protected sites, has to go through ‘appropriate assessment’ pointing out the meticulous impact of the project on the site. The project can only get green-signal from the competent authority if it has been ensured by the assessment committee that the project or plan does not have a significant impact to cause harm to the integrity of the sites.

However, exceptions to this rule can take place by continuation of a project with negative assessment, provided that certain conditions are fulfilled.<sup>70</sup> In chapter three of the thesis this kind of derogation rules in the nature and environment legislation, will be discussed elaborately.

### 2.2.2 Water Framework Directive

The Water Framework Directive<sup>71</sup> (WFD) is highly relevant in the discussion of this thesis as hydropower projects potentially can have adverse impacts on the quality of the water. WFD

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<sup>69</sup>Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, art 6(1)

<sup>70</sup>Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, art 6(4).

<sup>71</sup>Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, pp. 1–73).

requires the member states under this directive to adopt a ‘river basin management plan’ for every river basin district.<sup>72</sup> The objective behind this action is to ensure that the status of all natural water bodies can be identified as ‘good’ by 2015. For the artificial and heavily modified water bodies, the aim is to reach the status ‘potential’.<sup>73</sup> WFD was framed to provide protection and development to not only the integrity of surface water (Lake and River), but also groundwater, transitional waters, and coastal water.

The result under WFD and the two nature directives are interlinked. In essence, when a natural water body has achieved ‘good status’ under WFD, the conservation of that water-connected species and habitats becomes a lot easier. However, it doesn’t necessarily mean good ecological status of a waterbody will automatically preserve all habitats and species centred around it. Therefore, WFD requires that “where more than one of the objectives [...] relates to a given body of water, the most stringent shall apply”.<sup>74</sup>

*“For instance, if a Natura 2000 site is designated for otters or freshwater pearl mussels, it may also be necessary to regulate overfishing even if this is not necessary to achieve good ecological status under the WFD.”<sup>75</sup>*

WFD also provides provisions for the assessment of environmental impact of any new project affecting the quality of the water.<sup>76</sup> Like the other two nature directive, derogation rule is also available under WFD<sup>77</sup> in case of sustainable development activities, which will be assessed and discussed in chapter three of the thesis.

### **2.2.3 The SEA and EIA Directives**

The objectives of the SEA<sup>78</sup> and EIA<sup>79</sup> Directives are quite similar; however, the directives are applied in two distinguishing sectors. Environmental assessment under SEA directive is

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<sup>72</sup> Ibid

<sup>73</sup> Ibid

<sup>74</sup> Ibid, art 4(2).

<sup>75</sup> European Commission, “*Guidance on the Requirements for Hydropower in relation to EU Nature Legislation*” (2018), p 9

<sup>76</sup> Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

<sup>77</sup> Ibid, art 4(7)

<sup>78</sup> Strategic Environmental Assessment Directive 2001/42/EC.

<sup>79</sup> Directive 2014/52/EU of the EUROPEAN PARLIAMENT and of the COUNCIL of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.



applicable for ‘plans and programmes’ which might have significant environmental impact.<sup>80</sup> On the other hand, the EIA directive has also been framed for the purpose of environmental impact assessment, but it is applicable for the individual and public ‘projects’.<sup>81</sup> Basically, under the SEA directive, plans and programmes having significant effect on the environment, are assessed at the most strategic level so that later it faces less legal and implementation difficulties at the project stage.

The EIA directive, which requires consent to develop a project having significant impact on the environment, can only be given if the probable environmental impact of a project is assessed.<sup>82</sup> The directive categorises different projects. The projects listed in Annex 1 of the directive require mandatory environmental impact assessment and member states have an obligation to assess the probable EIA of projects listed in annex 2.<sup>83</sup>

*“Projects falling under Annex II include dams and other installations designed to hold water or store it on a long-term basis. Most installations for hydroelectric energy production are Annex II projects”<sup>84</sup>*

If a project requires environmental assessment under both EIA and Habitat Directives, a coordinated assessment procedure has to be conducted with a distinguishable part dedicated for the impact under the Habitat Directive within the whole environmental assessment report.<sup>85</sup> A joint coordinated assessment procedure simultaneously under all EIA, Habitats, Birds, WFD, Flood Directive can also be conducted, if necessary.<sup>86</sup> This kind of joint procedure has significant importance; because the assessment report of a project only under EIA can be insufficient due to its coverage through all environmental aspects, without

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<sup>80</sup> Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

<sup>81</sup>The EIA Directive defines ‘project’ as the execution of construction works or of other installations, schemes, or interventions in the natural surroundings and landscape.

<sup>82</sup> Andrew L.R Jacson, “Renewable energy vs. biodiversity: Policy conflicts and the future of nature conservation” (2011) 21 GEC 1195.

<sup>83</sup> European Commission, “*Guidance on the Requirements for Hydropower in relation to EU Nature Legislation*” (2018), p 8.

<sup>84</sup>European Commission, “*Guidance on the Requirements for Hydropower in relation to EU Nature Legislation*” (2018), p 14.

<sup>85</sup>Ibid.

<sup>86</sup>Commission guidance document on streamlining environmental assessments conducted under Article 2(3) of the Environmental Impact Assessment Directive (2016) 8 OJ C 273, pp. 1-6.

specifically focusing only on the impact on the biodiversity of Natura 2000 sites and protection of other species.<sup>87</sup>

### **2.3 Effects of Hydropower on European rivers and Biodiversity**

From the discussion so far, it is quite clear that legally binding obligations for the EU member states to meet their own national renewable energy target, created a better incentive for the states to invest themselves into the development of renewable energy. For instance, 23,000 hydropower plants were installed throughout the EU in 2011.<sup>88</sup>

On the other hand, to create balance between expansion of hydropower and maintaining the biodiversity of the concerned areas, EU nature legislations and WFD could come in handy. However, in the ambitious path of meeting the RE target, biodiversity often becomes a lesser priority. For example, As hydropower technologies are not free of environmental impact, they are one of the major barriers in conserving protected habitat and species and also the quality of the water.

*“Hydropower generation accounts for around 45 % of river and habitat continuity interruptions in the Danube River Basin District. A total of 1 688 barriers are located in the District’s rivers with catchment areas of more than 4 000 km. 600 of these barriers are dams/weirs, 729 are ramps/sills and 359 are classified as other types of interruptions. 756 are currently indicated to be equipped with functional fish migration aids. 932 continuity interruptions (55 %) have been a hindrance to fish migration since 2009 and are currently classified as significant pressures.”<sup>89</sup>*

The installation of hydropower can cause a lot of modifications and disturbances which can vary based on the nature of the hydropower and the nature and condition of the river. These modifications can include changes in river morphology and riverine habitats, barriers to migration and dispersal of protected species, Disruption of sediment dynamic, changes of the ecological flow regime, changes of the flow regime by peaking hydropower plants, changes

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<sup>87</sup>Ibid.

<sup>88</sup> Supra n., 84, p 19

<sup>89</sup>Supra n., 84, p 23

in seasonal flood cycle, water chemical and temperature change, displacement and disturbance on certain species, terrestrial species and habitats etc.<sup>90</sup>

Though large hydropower plants by consisting of only 9% of total hydropower plants in EU, generating 87% of total hydropower electricity<sup>91</sup>, 90% of the hydropower plants installed in 2011 were small, sharing only 13% of the electricity produced by hydropower.<sup>92</sup> As a consequence of this, most of the rivers of Europe are now in degraded status. Condition of the larger number of such rivers is so deteriorated that any further development can cause considerable effect. It is also further found that 80% of the ‘planned hydropower plant’ poses a high to very high risk to the freshwater biodiversity of Europe.<sup>93</sup> This risk will only increase as a result of climate change causing a dramatic increase of floods and draughts in the rivers used for installation of at least 62% of hydropower dams.<sup>94</sup>

#### **2.4 EU Legal Recourse on Compatibility Zone**

The available legal recourse in the EU for conservation of biodiversity has already been discussed (see, Chapter 2.2). There has been more legal development in context of balancing between expansion of hydropower and conserving the biodiversity on which it might have an effect. For example, in a case decided by the European court of Justice, it has been confirmed that for the protection of Natura 2000 sites “...where a plan or project not directly connected with or necessary to the management of a site is likely to undermine the site’s conservation objectives, it must be considered likely to have a significant effect on that site. The assessment of that risk must be made in the light inter alia of the characteristics and specific environmental conditions of the site concerned by such a plan or project”<sup>95</sup>

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<sup>90</sup> Supra n. 84, pp 21-27.

<sup>91</sup>“Hydroelectric Power Plants as a Source of Renewable Energy- legal and ecological aspects”–Umweltbundesamt, November 2003, ibid, p 20;

<<http://www.umweltbundesamt.de/sites/default/files/medien/publikation/long/2544.pdf>>

<sup>92</sup>Arcadis 2011: Hydropower generation in the context of the EU WFD. EC DG Environment.168 pp.

<sup>93</sup> “Hydropower projects in Europe threatened by increasing floods and droughts due to climate change, warns new study”(11 March,2022) WWF. Available at

<<https://www.wwf.eu/?6176891/Hydropower-projects-in-Europe-threatened-by-increasing-floods-and-droughts-due-to-climate-change-warns-new-study>>

<sup>94</sup>Ibid.

<sup>95</sup>European Court of Justice Ruling in C- C-127/02, para 45.

A specific project may not cause a significant effect on a particular species and habitat of the area, however might disrupt natural flow of the river, thus creating a significant effect.

Significant effect of a plan or project on a site can also be indentified based ‘cumulative effect’. That means when a hydropower plant is planned to be installed its effect should be taken into consideration in light of the existing effect created by the existing hydropower plant.<sup>96</sup>

All the existing hydropower plants concerning Natura 2000 sites must maintain conformity with article 6.2 of the Habitat Directive. It imposes an obligation on the member states to take appropriate measures to prevent further deterioration of the site. If appropriate measures are not taken, a member state shall be in violation of the directive.<sup>97</sup> In many other cases<sup>98</sup> the court made it clear that the member states are required to create such a specific and coherent legal regime which is effectively capable of ensuring the protection and management of the sites under the Birds<sup>99</sup> and the Habitat directive. Therefore, too isolated or partial remedial measures that address some of the conservation decline of the site but not all, will be liable for infringement.<sup>100</sup> Administrative and volunteer measures to fill the vacuum of a specific and complete legal regime to provide sufficient protection to the SPA will not amount to conformity with the directives.<sup>101</sup> Also, hydropower projects must not be in contradiction with any conservation aim that has been set by a member state under 6.1 of the Habitat Directive.

The member states can engage with mitigation measures, compensatory measures and/or ecological restoration measures to lessen the impact of a particular hydropower project. The appropriate measures should be determined after an environmental assessment and other assessment reports under concerned directives.

Therefore, it can be said that legal recourse to create balance between development of hydropower and conservation of biodiversity is already present, quite adequately. However,

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<sup>96</sup>European Court of Justice Ruling in C-142/16

<sup>97</sup>European Court of Justice Ruling in C-117/00, C-75/01, C-418/04, C-508/04.

<sup>98</sup>European Court of Justice Ruling in C-293/07, C-166/97, C-96/98, C-57/89, C-44/95, C-75/01, C-415/01, C-6/04, C-508/04, , C-241/08, C-491/08, C-90/10.

<sup>99</sup>Art 4.1,4,w2

<sup>100</sup>European Court of Justice Ruling in C-418/04

<sup>101</sup>European Court of Justice Ruling in C-96/98,166/04.

biodiversity conservation is about taking precautions, preserving, and protecting which might not provide much economic incentive. On the other hand, energy expansion, especially when it is legally binding, inspires new market opportunities, competition, and investment. The EU has been able to meet their last renewable energy goal but not one of biodiversity. That indicates some room for improvement and understanding of the shortcomings within the implementation of the EU biodiversity legal regime.

## Chapter Three: Derogation Rule: Curse in Disguise?

### 3.1 Derogation Rule with Nature Directive and WFD

Hydropower contributed 35% of the EU's green energy mix in 2019 ensuring its strong presence in the renewable energy market.<sup>102</sup> However, according to the EEA report, hydropower installation along with other energy related activities is the most concerning factor to the degraded state of the freshwater ecology of the EU.<sup>103</sup> So the question might arise whether all the prevalent protections for biodiversity in light of development of hydropower discussed in the previous chapter have failed to serve its purpose? If so, what might be the controlling factor for this situation?

Unlike renewable energy, member states of the EU do not have any binding target for biodiversity. Rather, exceptions have been given within the two nature directives and WFD, which provides the member states with an opportunity to carry out a project having adverse effects on biodiversity.<sup>104</sup> As to the Habitat Directive, *“If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.”*<sup>105</sup>

The safety net created under article 6 of the Habitat Directive requires the member states to take the following steps for the protection of Natura 2000 sites.

- a. Assessing a plan or project to determine whether it might have a significant effect on one or more than one Natura 2000 site.
- b. Ascertaining the effects that would be caused by any plan or project through appropriate assessment (AA) without any reasonable scientific doubt.<sup>106</sup>

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<sup>102</sup> Supra n.,58.

<sup>103</sup> Ulrich Schwarz, Hydropower pressure on European River: The Story in Number (1st, commissioned by WWF, RiverWatch, EuroNatur, GEOTA) 2019.

<sup>104</sup> Council Directive 92/43/EEC, art 6(4)

<sup>105</sup> Ibid.

<sup>106</sup> C-521/12; C-387/15 and C-388/15.

- c. Trying to find an alternative solution. For instance, Selecting an alternative location for the development of the project that will be less damaging.
- d. If no such alternative solutions are found and the project is essential for imperative reasons of overriding public interest, the plan or project might be approved provided that an effective ‘compensatory mechanism’ has been adopted to keep the overall integrity of the protected sites intact.<sup>107</sup>

*“In 2014, the ECJ looked into this question in more detail in the Briels case and decided that only those protective measures are admissible that are designed to prevent or reduce potential harmful effects on the site that may be caused immediately, but not measures that serve the purpose of compensating for harmful adverse effects on a Natura 2000 site.”<sup>108</sup>*

Therefore, it is without doubt that to carry out a hydropower projects appropriate assessment of the impact of such projects has to be conducted with scientific clarity. The AA has to be based on the data that was applicable to the day when the decision of implementation of such a project was authorised.<sup>109</sup>

The similar rule and procedure is applicable under WFD. The plan or project having a deteriorating effect on the status of the river can only be approved as an ‘exception’ with proper mitigating measures provided that the project contains ‘overriding public interest’.<sup>110</sup>

### **3.2 Distinguishing between ‘Public Interest’ and ‘Overriding Public Interest’**

The directive provides ground for ‘justified derogation’ in case of ‘overriding public interest’. It should be noted that a mere public interest shall not serve the purpose of granting derogation rather such interest has to have an overriding effect. That means the effect of such

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<sup>107</sup>Supra n., 84, p 65.

<sup>108</sup>Möckel S, “The Assessment of Significant Effects on the Integrity of “Natura 2000” Sites Under Article 6(2) and 6(3) of the Habitats Directive” (14 Dec 2017) Nature Conservation 23; ECJ, adjudication of 15.5.2014 – C-521/12, margin number 28 f. With a similar conclusion, also ECJ, adjudication of 29.1.2004 – C-209/02, margin numbers 24-28.

<sup>109</sup> Commission v Portugal, C-239/04, EU:C:2006:665, paragraph 24

<sup>110</sup>Council Directive 2000/60/EC, art 4(7).

interest has to override or outweigh<sup>111</sup> the primary importance of achieving the objectives under the directives.<sup>112</sup>

Now it is only rational to find the ‘key elements’ that can make a plan or project of ‘overriding public interest’ under these directives. For example, under WFD, the key elements include such public interest that address the fundamental quality of citizen’s life such as health, safety.<sup>113</sup> Then, the EU court has stated that the need of irrigation for continuous supply of water may generate ‘overriding public interest’.<sup>114</sup> As to the study conducted by CIS, development of hydropower plants shall not be by default considered as a matter of ‘overriding public interest’, rather the justifiability of such projects shall be dependent on EIA report under concerned directives.<sup>115</sup>

Similar safety nets can be implemented to provide protection under the ‘derogation rule’ of the Habitat Directive. It is quite clear from the discussion that a mere declaration of ‘derogation’ does not exempt a project having adverse effects on the environment under the directives.<sup>116</sup> Public participation in the discourse and transparent discussion among the stakeholders is a key element to determine whether a project possesses overriding public interest.<sup>117</sup>

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<sup>111</sup> Austrian National High Administrative Court Decision (VwGH 24.11.2016, Ro 2014/07/0101), ruling that the fulfillment of one criteria of Article 4(7)(c) under WFD is sufficient, thus overriding public interest or the weighing test, and not necessarily both.

<sup>112</sup> CIS Guidance Document No. 36, “*Exemptions to the Environmental Objectives according to Article 4(7)*”, (Document endorsed by EU Water Directors at their meeting in Tallinn on 4-5 December 2017), p 59.

<sup>113</sup> CIS Guidance Document No 1, *Economics and the Environment – The Implementation Challenge of the Water Framework Directive* (2003), ISBN 92-894-4144-5, ISSN 1725-1087; Available at [https://circabc.europa.eu/sd/a/cffd57cc-8f19-4e39-a79e-20322bf607e1/Guidance%20No%201%20-%20Economics%20-%20WATECO%20\(WG%202.6\).pdf](https://circabc.europa.eu/sd/a/cffd57cc-8f19-4e39-a79e-20322bf607e1/Guidance%20No%201%20-%20Economics%20-%20WATECO%20(WG%202.6).pdf)

<sup>114</sup>European Court of Justice Ruling in C-43/10.

<sup>115</sup>EleftheriaKampa, Johanna von der Weppen and Thomas Dworak, “*Water management, Water Framework Directive & Hydropower*” (Nov 2011), issued in Common Implementation Strategy Workshop Brussels, 13-14 September 2011 ; available at [https://circabc.europa.eu/sd/a/23d94d2d-6b9c-4f17-9e15-14045cd541f3/Issue%20Paper\\_final.pdf](https://circabc.europa.eu/sd/a/23d94d2d-6b9c-4f17-9e15-14045cd541f3/Issue%20Paper_final.pdf)

<sup>116</sup>Supra n., 111.

<sup>117</sup>Public participation process required under WFD Article 14support the debate to determine overriding public interests. Results from an SEA on relevant plans and programs can also be helpful in this regard.



### 3.2.1 Weighting Benefits of a Project against Foregone Opportunities of Conservation

Art 4(7)(c) of the WFD provides another scope for derogation other than ‘overriding public interest’. The question under this scope is whether the benefits of the new projects or modifications outweigh the benefits of attaining the objective under the directive. Benefits of the project that can be a considerable factor in this matter include improvement of public health, maintenance of public safety, and sustainable development.<sup>118</sup>

Cost-benefit analysis of a project must assess the foregone opportunities of conserving the environment which could have been maintained if the project is not authorised to be carried out. Therefore under WFD the primary foregone benefits that must be taken into consideration are-

*“In case of deterioration of status, those benefits and opportunities foregone as a result of the deterioration of status (e.g. loss of biodiversity, loss of ecosystem services); and  
In case of failure of reaching good status or potential, those benefits that would be provided if the achievement of good status or good ecological status were not prevented (e.g. drinking water supply is no longer possible or the foregone benefits due to the necessary increase in the level of purification treatment; if a water body may deteriorate from moderate to poor the gap between good and poor).”<sup>119</sup>*

### 3.3 Protected only in Paper, not in Practice

We have observed previously the extensive measures that are available to minimise the deteriorating effect of a project. However, in practice the procedures are rarely maintained. For instance, ‘exemption rule/derogation rule’ are used so quite frequently that 53% of the rivers have been subjected to at least one exception.<sup>120</sup> This alone is enough to take the river to a deteriorated status, but more hydropower plants are planned to be built on these rivers. The location of one-fourth of the planned hydropower plants is in protected areas;<sup>121</sup> Most of such plants are within Nature 2000 protected sites that were built to protect the most vulnerable species and habitats of Europe. 4610 hydropower plants in different stages of

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<sup>118</sup>Supra n. 115.

<sup>119</sup>Supra n. 117, p 61.

<sup>120</sup>Ulrich Schwarz, “Hydropower pressure on European River: The Story in Number” (1st, commissioned by WWF, RiverWatch, EuroNatur, GEOTA, 2019).

<sup>121</sup>Ibid, p19.

development (existing, under construction, planned) are within Natura 2000 sites, whereas 21% of total hydropower plants are situated in protected areas.<sup>122</sup>

Moreover, 90% of the hydropower plants in the EU are small in nature which has a bigger impact on the river and its ecology, taking into consideration its insignificant contribution to the electricity generation.<sup>123</sup> The development of such hydropower plants was accelerated by ‘Feed-in-Tariff’ schemes that are only available for small hydropower projects making the whole situation counterintuitive for biodiversity.<sup>124</sup> The numbers point out the flimsy and shoddy implementation of the nature directives and frequent abuse of the ‘derogation rule’ under them. This practice has continued to be overlooked by the commission as new hydropower plants having significant impact are often installed without even asking for an ‘exemption’ and justifying the cruciality of the projects.<sup>125</sup> Austria being the country with the highest number of hydropower plants in the EU, planning to install hundreds more plants one-third of which has been approved though being in contradiction with WFD. The majority of the project is just bypassing the established effective derogation process.<sup>126</sup> Therefore, it can be said that the states are very often being fixated on hydropower for sustainable energy transition while being oblivious towards nature and biodiversity whereas clean energy development and biodiversity conservation was supposed to go hand in hand.<sup>127</sup>

As more and more studies are confirming the adverse effect of hydropower on European river and migratory fishes, there has been push from activists and NGOs on the commission to stop approving more hydropower plants rather focusing on modifying the existing ones by increasing their capability.<sup>128</sup> However, in Portugal a contradicting stance has been observed.

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<sup>122</sup>Ibid.

<sup>123</sup>Grill G., Lehner B. and Zarfl C., “*Mapping the world’s free-flowing rivers*”(May 2019) Nature 569.

<sup>124</sup> Louis Gouillot and Aitor Harnandez-Morales, A damn obstacle for biodiversity, Politico (26 Jan, 2021); available at <<https://www.politico.eu/article/a-damn-obstacle-for-biodiversity-hydro-dams-climate-neutral/>>

<sup>125</sup> Claire Baffert and Sophie Bauer, “The Same Coin: Hydropower Dams and the Biodiversity Crisis”, REVOLVE, Winter 2019/2020, p 30; Available at <[https://wwfeu.awsassets.panda.org/downloads/re\\_34\\_26\\_33\\_hydropower\\_dams\\_and\\_the\\_biodiversity\\_crisis\\_1\\_.pdf](https://wwfeu.awsassets.panda.org/downloads/re_34_26_33_hydropower_dams_and_the_biodiversity_crisis_1_.pdf)>

<sup>126</sup>Ibid.

<sup>127</sup>Ibid.

<sup>128</sup>Supra n., 84.

*“Portugal’s Tâmega Hydropower Scheme is financed in large part by the European Investment Bank (EIB). According to campaigners, this is in direct contradiction with the EIB’s own guidelines on hydropower investment not undermining EU nature protection rules and being subject to a proper environmental impact assessment. The ongoing construction of the Gouvães hydropower dam on the Torno River, a tributary of the Tâmega, is expected to flood part of the Alvao-Marão area – a Natura 2000 site and crucial habitat for threatened species such as the European otter, the Iberian wolf or the Pyrenean desman. According to our recent study, Portugal is one of the few Western European countries continuing to build large dams rather than focusing on pumped storage or refurbishment of existing turbines.”<sup>129</sup>*

### **3.4 Infringement Procedure**

By 2015, all EU rivers were targeted to be brought back in ‘good status’. However, till 2018 the target was far from reach as more than 60% of the river contains poor status.<sup>130</sup> As previously discussed, more than half of the river had been already covered under the ‘exempted project’, yet further pressured by more hydropower plants. In theory, a hydropower project must comply with WFD along with the habitat directives, otherwise an ‘infringement’ procedure might be invoked against the concerned country. However, in practice frequently otherwise happens. For example, in a dam case of Croatia, it has been revealed that the project design was altered after the EIA procedure for a hydropower project was completed, contributing more damage to the ecology of the river. There has been very

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<sup>129</sup> Claire Baffert and Sophie Bauer, “The Same Coin: Hydropower Dams and the Biodiversity Crisis”, REVOLVE, Winter 2019/2020, p 31; Available at

[https://wwfeu.awsassets.panda.org/downloads/re\\_34\\_26\\_33\\_hydropower\\_dams\\_and\\_the\\_biodiversity\\_crisis\\_1\\_.pdf](https://wwfeu.awsassets.panda.org/downloads/re_34_26_33_hydropower_dams_and_the_biodiversity_crisis_1_.pdf)

<sup>130</sup> Pippa Gallop, “Updated Renewable Energy Directive needs built-in biodiversity protection” (17 Nov, 2011) CEE Bankwatch, Euronatur; Available at

<https://bankwatch.org/blog/updated-renewable-energy-directive-needs-built-in-biodiversity-protection>

little evidence that measures had been taken later for the discontinuance of such a project.<sup>131</sup> Rather, both projects were run subsidised.

Bringing infringement proceedings while simultaneously letting such destructive projects to be carried on with subsidies is without any doubt futile. For example, an infringement procedure had been brought against Romania due to their development of small hydropower plants on Dejani-Lupsa and Vistisoara rivers in Fagaras Mountains, which were Natura 2000 protected sites; other projects in n the Alb river in Retezat Mountains and BistraMarului, Sucu and Olteana rivers in Tarcu Mountains has been ignored.<sup>132</sup>

Moreover, It has been revealed that the European Public Banks are the major responsible party for financing most of the small hydropower projects that are dangerously deteriorating the ecology and overall status of the rivers and protected sites.<sup>133</sup>

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<sup>131</sup>The Ilovac and DabrovaDolina hydropower plant projects of Croatia underwent design changes after their environmental impact assessments were carried out, causing more damage to the river ecosystems as a result. The Croatian authorities have been reluctant to act and the issues remain unresolved. Yet both plants are still receiving feed-in tariffs paid for by the public.

<sup>132</sup> “EC starts an infringement procedure against Romania on small hydropower” (11 June, 2015) *WWF*;

Available at

<[https://wwf.panda.org/wwf\\_news/?248033/EC-starts-an-infringement-procedure-against-Romania-on-small-hydropower](https://wwf.panda.org/wwf_news/?248033/EC-starts-an-infringement-procedure-against-Romania-on-small-hydropower)>

<sup>133</sup>Igor Vejnović and Pippa Gallop, “*Financing for hydropower in protected areas in Southeast Europe: 2018 update*” (March 2018), CEE Bankwatch Network; available at

<<https://bankwatch.org/wp-content/uploads/2018/03/Financing-hydropower-southeast-Europe-web-2018-update.pdf>>

## Chapter Four: A Case Study: Saviour Dam of Portugal

### 4. Saviour Dam of Portugal

BaixoSabor dam, a large hydropower project on Saborr river in Portugal can be used as a classic case study to understand the conflict between development of hydropower and conservation of biodiversity, which can happen in practice if the legal resources on biodiversity are not properly implemented. Though it was an expectation under *EU Green Deal* that clean energy transition policy and biodiversity conservation policy will be complimentary with each other, in reality such expectation might not be met. There was a legally binding obligation upon the member states to meet the renewable energy target under the Renewable Energy Directive; at the same time, the Natura 2000 sites covered 18% of the EU territory.<sup>134</sup> Therefore, there is a strong probability of sparking off situations now and then, where renewable energy development is contradicting the biodiversity objectives of a protected site or other objectives under WFD.<sup>135</sup> Also in such cases the effectiveness of the protection under EU's biodiversity legal regime and EC's commitments towards maintaining it can be tested. The effect and influence of derogation rules given under the Habitat Directive and WFD and the means of lawful use of such derogation rules should also be added to the discourse.

In this chapter, through the legal conflict between hydropower and biodiversity created by BaixoSabor Dam, I shall explore the overall difficulties and complications that can be present in a member state of the EU in case of maintaining biodiversity.

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<sup>134</sup>European Commission, Natura 2000; Available at

<[<sup>135</sup>In October 2003, for example, construction activities at a large terrestrial wind farm in Derrybrien, Ireland, appear to have been the trigger for a landslide which caused an “ecological disaster”, when the mass of peat which was dislodged polluted the Owendalulleagh river, causing the death of around 50,000 fish and lasting damage to the fish spawning beds.](https://ec.europa.eu/environment/nature/natura2000/index_en.htm#:~:text=In%20a%20nutshell.and%20threatened%20species%20and%20habitats.></a></p></div><div data-bbox=)

## 4.1 Background

Portugal is a mountainous country, a type that is suitable for hydropower development. The government of Portugal first announced the plan of establishment of Sabor Dam in 1996.<sup>136</sup> Sabor Dam was part of Portugal's Large Dam Programme (PLDP) which included 12 other large hydropower plants. Such high enthusiasm for hydropower might be reasonable as Portugal had a legal obligation to produce 31% of its national energy consumption from renewable energy while Portugal aimed for 60% from renewable energy by 2020.<sup>137</sup> Hydropower is one of the major renewable energy sources of Portugal and an integral part of its energy strategy to meet its own renewable energy target.<sup>138</sup> However, as an EU country Portugal also had obligations regarding biodiversity under the Habitat Directive, Birds Directive and WFD. The obligations of the member states under these directives have been discussed previously in this thesis (Chapter two). The case study chosen for this chapter, Baixo Sabor Dam project has been planned, approved and carried on while remaining in direct contradiction under the Habitat Directive and Water Framework Directive.<sup>139</sup>

To understand the legal history and complications related to Baixo Sabor Dam, some prior incidents to the planning of this plant have to be discussed. In 1995 the government of Portugal ceased the infrastructure development of a dam in Coa valley.<sup>140</sup> The decision for cessation took place because of explosive media attention to the fact that the site contained a large number of rocks that were anticipated to be of Palaeolithic age.<sup>141</sup> There is no chance of assuming that the decision came from the commitment to protect such an important

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<sup>136</sup> *Brief Chronological summary of Sabor dam Dispute* (2003) updated to November 2006, SPEA and BirdLife International. <<http://ibas-terrestres.spea.pt/fotos/editor2/chronologicalsummary.pdf>>

<sup>137</sup> Portugal, being able to generate 34% of electricity consumption from renewable energy occupies the fifth place in the table of Member States with the highest share of energy from renewable sources, having exceeded the national target of 31 percent.

<sup>138</sup> Portugal has about 60 hydropower reservoirs of varying sizes, which together produce 30% of the country's annual electricity consumption.

<sup>139</sup> Andrew L.R. Jacson, "Renewable energy vs. biodiversity: Policy conflicts and the future of nature conservation" (2011) 21 GEC 1195.

<sup>140</sup> Maria Gonclaves, *The FozCo'a Rock Art case: towards a new relationship between science and policy making in Portugal* (1996) International Symposium on Technology and Society 130–138.

<sup>141</sup> *Ibid.*

site.<sup>142</sup>Because within one year, the government brought out another plan to install a large dam in Sabor valley for producing hydroelectricity that was near Coa valley.<sup>143</sup>Sabor valley does not contain any less importance as it was one of the unique sources of biodiversity in Portugal. Consequently, along with poor planning, the project was found to have failed to meet the requirements under Habitat Directives, Bird Directives and WFD.

#### 4.2 Effect of Sabor Dam on Biodiversity

*“A dam on the Sabor River would destroy one of Europe’s few remaining regions of extraordinary biodiversity, and one that is home to unique cultural traditions. Much of the Sabor valley in northeastern Portugal is part of the Natura 2000 network, and several habitats along the river are classified as priority conservation areas [the subset of EU protected habitats that are given the highest priority in view of their danger of disappearance]. The region contains some of the few remnants of ancient Mediterranean native forest ecosystems, interspersed with low intensity agriculture of olive and almond trees. The Sabor valley is rich in endemic plant species and a critical habitat for endangered bird species such as the Bonelli’s eagle, the golden eagle and the black stork, which nest on the steep cliff formations along the valley. The valley itself is a migratory corridor for wolves [a priority species in Portugal under the Habitats Directive] and other wildlife and the Sabor is the spawning ground for fish species, such as the barbel, which annually swim up-river to reproduce.”<sup>144</sup>*

The first Environmental Impact Assessment (EIA) report also accurately found that the project has significant adverse effects on two Natura 2000 sites, one site falling under pSCI under the Habitat Directive and another SPA under the Birds Directive.<sup>145</sup> Based on the finding of the EIA report in 1999, the plan to install a dam in Sabor Valley was recommended

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<sup>142</sup>In 1998, the Prehistoric Rock Art Sites in the Coa Valley was inscribed on the World Heritage List by UNESCO.

<sup>143</sup>Supra n., 135.

<sup>144</sup> Helena Freitas and Korinna Horta., “Proposed Portugal Dam Would Flood Culturally Rich, Biologically Diverse Area” \*(2003) 18 World Rivers Review, ISSN Number 0890 6211, pp,10–11; Available at <<https://archive.internationalrivers.org/sites/default/files/attached-files/wrr.v18.n3.pdf>>

<sup>145</sup>Supra n., 135.

to be cancelled.<sup>146</sup> However, before another EIA on the project could come out in 2003, Portugal invoked the derogation rule under the directives.<sup>147</sup>

### **4.3 Blatant Abuse of Derogation Rule under the Nature Directives**

To claim a project having adverse effects on the protected site to be ‘exempted’ under the derogation rule given in article 6(4) of the Habitat Directive, three requirements must be fulfilled. First of all, there must be a vacuum of alternative locations to carry on the project. Secondly, the project has to have ‘overriding public interest’ concerning the health and safety of the citizens. Finally, to preserve the overall coherence of the protected sites all appropriate compensatory measures have to be taken (Also see, Chapter 3.1). All of the three requirements must be fulfilled to invoke derogation regarding a project having a significant effect on Natura 2000 sites.

Before approving the final plan, the government decided to select an alternative location. Following that, in 2002, another EIA report was published on making a comparative analysis of cost-benefits between Sabor Dam and the alternative location selected for the project which is surprisingly the above-mentioned Coavalley. The analysis showed that government’s plan to use Coa valley as an alternative location in case will be more costly as in that site a series of small hydropower plants were determined to be installed that would contribute lesser in electricity generation than a large hydropower plants in Sabor Dam.<sup>148</sup> The justifiability of Coa valley as an alternative location given the site’s conservation priority could also be questioned.<sup>149</sup>

ICN, Portugal’s national nature conservation agency, also came to the conclusion from the 2002 EIA report that the continuance of the project would cause infringement of Nature Directives. The reasons framed behind the conclusion were based on the three requirements.

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<sup>146</sup>ibid.

<sup>147</sup>Supra n., 138.

<sup>148</sup>*Estudo de Impacte Ambiental: Avaliac,ao Comparada Dos Aproveitamentos do Baixo Sabor e do Alto Coa*. Volume I: Resumo Na~o Te’cnico(2002), EDP; available at <[http://www.edp.pt/PT/sustentabilidade/EDPDocuments/V2\\_04RNTAvalCompAHBS\\_AHAC.pdf](http://www.edp.pt/PT/sustentabilidade/EDPDocuments/V2_04RNTAvalCompAHBS_AHAC.pdf)>; supra n. 138.

<sup>149</sup>The upper Coa valley – upstream of the World Heritage Site, some distance from the protected engravings, ibid.



In the case of the Sabor Dam project there is a presence of alternative locations, which could be more than one due to the state's emphasis and perseverance for hydropower.<sup>150</sup> Then, the concerned dam does not have 'overriding public interest' as one of its benefits.<sup>151</sup> Finally, sufficient compensatory measures deemed impossible to adopt might conserve the integrity of the concerned Natura 2000 sites.<sup>152</sup>

However, in case of Sabor dam, though none of these requirements were fulfilled, the dam has been functioning since 2015. The construction plan was officially approved next year after the publication of the ICN report on Sabor Dam.<sup>153</sup> The case became troubling evidence of the shoddy implementation of the Directive and lack of commitment of EC in biodiversity conservation.

#### **4.4 'Insincere' Infringement Proceedings against Portugal**

##### **4.4.1 Grounds for Infringement Procedure**

Two organisations called the Liga para a Protecção da Natureza (LPN) and the Plataforma Sabor Livre, member of Portugal's Civil Society organisations, filed a complaint with the Commission (EC) challenging the legality of the Sabor Dam project.<sup>154</sup> By the time the complaint was in place, the EC was aware of the effect of Sabor Dam on the Natura 2000 sites and its contradiction with the objectives of the nature directives due to the EIA report on 1998,2002 and ICN report on 2003.

Because of the adequate and strict legal regime of the EU on biodiversity, it was unlikely that the Sabor Dam project would be green signalled as a result of the infringement proceedings

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<sup>150</sup>Supra n. 135 and 138.

<sup>151</sup>Ibid.

<sup>152</sup>Ibid.

<sup>153</sup>European Commission, Note for the file, Complaint 2003/4523, Joaquim Capita~o, 24 June 2004; *ibid.*

<sup>154</sup> 2003/4523, SG(2003) A/4598;

Case T-186/08, Liga para a Protecção da Natureza v. Commission of the European Communities.

in the court. Moreover, other case laws have been developed providing a narrow interpretation of the derogation rule by ECJ and the Commission. For example, the court held in 2006 that it was not the duty of the objector to prove the existence of an appropriate alternative location, rather the burden of proof of non-existence of such alternative was upon the concerned national authority.<sup>155</sup> In interpreting the scope of the derogation rule, the Commission confirmed that all of the three requirements must be fulfilled to make a project ‘exempted’ under the relevant directives.<sup>156</sup>

As discussed in the previous section, Portugal failed to meet all of the requirements that are needed to invoke the exemption rule. In June 2005, the commission sent a formal notice to the government of Portugal laying out the commission’s findings on Sabor Dam.<sup>157</sup> Based on the findings that suggested the project is in contradiction with the EU biodiversity laws, the Commission urged the government to withdraw the project. Alternative to BaixoSabor was present; though the importance of prehistoric paintings in Coa Valley it provided a lesser adverse impact, it was more expensive. More alternatives could be found, however due to the country’s high hydropower ambition all such alternatives were designated for future projects. *“In 2007, for example, Portugal announced its National Dam Programme, which foresees ten additional new dams being built, six of which are to be in the Douro valley region, like the Sabor dam. In advance of this announcement, an internal European Commission briefing note, obtained under access to information legislation, recorded that: “Of all these [then five dam] proposals, Sabor is the most damaging for nature but the Portuguese are not prepared, it would seem, to see any of the others as alternatives as they want them all!”*<sup>158</sup>

In 18 November, 2005 the Commission issued another formal letter to the government of Portugal refusing the state’s justification to install a dam in the sabor valley due to the existence of less harmful alternatives and inadequate public interest compared to the foregone

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<sup>155</sup> ECJ Ruling in Case C-239/04, Commission of the European Communities v. Portuguese Republic.

<sup>156</sup>European Commission, Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC, (January 2007), available at

[https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance\\_art6\\_4\\_en.pdf](https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf)

<sup>157</sup>Supra n., 135.

<sup>158</sup>Supra N., 138.

opportunities the unique valley used to offer to the biodiversity.<sup>159</sup> In response the Government of Portugal denied the validity of EC's claim.<sup>160</sup> The EC started infringement proceedings against Portugal in the same month.<sup>161</sup>

#### **4.4.2 Political Priority: Placing Biodiversity in the Back Seat**

The EIA report with comparative cost-benefit analysis between Sabor Dam and its proposed alternative Alto Coa was published following the general election of Portugal in 2002. The new Prime Minister Jose' Manuel Barroso was in the chair when the EIA report was published declaring the alternative location would contribute far less effect on the environment and ecology contrary to Sabor Dam that would damage one of Europe's last wild rivers and its extraordinary, well-preserved biodiversity. Despite having such a clear report in hand, the Ministry of Environment officially green signalled the Sabor Dam project in 2004.<sup>162</sup> There was no explanation from the side of the government why they did not want to bother considering the alternative location.<sup>163</sup>

Within one month of this decision Prime minister Barroso vacated his office to take up the office of President of the EC.<sup>164</sup> This context is important to understand the commission's abrupt change of mind after commencing the infringement procedure against Portugal.

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<sup>159</sup>The Commission issued a Letter of Formal Notice on 18.10.05 in which it considered that the project breached the Habitats Directive namely because [the Co^a dam] should be considered as an alternative solution (less impacts on the Natura 2000 sites) and the public interest justifications invoked by the Portuguese authorities were not accurate and not proportional, to the damages caused by the project in the Natura 2000 network. In January 2007 the Portuguese authorities provided some complementary studies they had announced in July 2006 aimed at justifying the project and at replying [to] some questions asked by the Commission services in November 2006. The Portuguese authorities basically argued that (1) the impacts on the Natura 2000 sites were overestimated by the previous impact studies, (2) [the Co^a project] would be 70% more expensive and less efficient (both technically and economically) and (3) would be operational 5–7 years later than [the Sabor project], *ibid.*

<sup>160</sup>*Supra* N., 135.

<sup>161</sup>*Ibid.*

<sup>162</sup>European Commission, Note for the file, Complaint No. 2003/4523 (24 June, 2004), Joaquim Capita~o; *Supra* n. 138.

<sup>163</sup>*Supra* n. 135.

<sup>164</sup>*Supra* n. 138.

In February of 2007, Mr. Barroso, who was council president at that time, communicated with an internal briefing regarding the Sabor Dam dispute.<sup>165</sup> Another briefing was made in April 2007 communicating the Council's opinion about the project recognising the damaging effect of the dam on such a biodiversity-rich site and also Portugal's failure to fulfil the requirements to lawfully invoke art 6(4) under the Habitat Directive.<sup>166</sup> However, though the sentiment of these briefings and summary of formal notices sent to the Government of Portugal was clearly against the construction and continuation of the Sabor Dam project, within three months such sentiment was reversed. The DG-general of Environment of the commission communicated with the Government OF Portugal that they are very close to dismissing the infringement proceedings if the government could take adequate compensatory measures for the controversial project.<sup>167</sup>

With this stance of letting go of other two requirements to invoke the derogation rule, the Commission themselves were in violation of the biodiversity law of the EU. Moreover, there was scope for reasonable doubt as to how much compensatory measure could actually compensate for the irreversible biodiversity loss of the Saborriver, one of Europe's last free flowing rivers.<sup>168</sup> The project could not be in conformity with WFD either given the member state's obligation to not take any project having a deteriorating effect on the status and quality of the river. Nonetheless on 28 February, 2008 the infringement procedure was dropped

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<sup>165</sup> European Commission, Briefing note for the attention of President Duraõ Barroso, Subject: *Infringement procedure 2003/4523* (2007) [Attached to an e-mail dated 22 February 2007 from David Skinner of DG Environment to Pierre Schellekens, then Deputy Head of Cabinet for the Environment Commissioner Stavros Dimas], *ibid.*

<sup>166</sup>Supra n.158.

<sup>167</sup>“If the above elements [a list of additional compensatory measures plus a timetable for their implementation] are made available to us during August [2007]. . . , we would have the legal basis to recommend to the College [of Commissioners] the closure of the [Sabor] case at the earliest opportunity” - European Commission, Letter dated 27 July 2007 from M P Carl, Director General of DG Environment, to the Permanent Representative of Portugal Mendonca.

<sup>168</sup>Supra n. 138.

indicating the commission's satisfaction towards disproportionate compensatory measures.<sup>169</sup> The effect of such a decision was drastic as there is legal bar to challenge the decision.<sup>170</sup>

The explanation for such a surprising turn of events was consistently pointed at political influence. As to the interviews given by several CSO members, it had been found that “*Commission President Barroso, having presided over the national authorisation of the Sabor dam while Prime Minister of Portugal, personally intervened to influence the EU Environment Commissioner Stavros Dimas's handling of the case (Interviews, 2010). One CSO representative stated that he had been given this version of events by officials from the European Commission and the Portuguese government (Interviews, 2010). Another stated that he had been told by a senior DG Environment official that this was indeed what had happened (Interviews, 2010).*”<sup>171</sup>

However, the appearance of such an explanation might not be irrational at all. Because influencing the infringement proceedings is not unprecedented in the EU, though not very frequent.<sup>172</sup> It is important to note that the unexpected outcome of this insincere infringement proceeding had a bigger adverse effect on the future of the biodiversity of Portugal. For example, Until 2010. The National Dam Programme of Portugal had projects of installing ten more dams, generating more adverse effects on Natura 2000 sites.<sup>173</sup>

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<sup>169</sup>The compensatory measures to be implemented: “include restoring the Vilarica stream (important to fish), improving and restoring the habitats of several tributaries of the river Sabor, ensuring the continuity of ecosystems in tributaries of the river Sabor, improving the river corridor of “Alto etMe'dioSabor” and the river Mac,a's, improving and protecting priority habitats in the area surrounding the dam basin, creating new shelters for bats, an otter and mole [“mole” presumably refers here to the Pyrenean desman (*Galemyspyrenaicus*) conservation programme, wolf and river birdlife improvement and protection programmes (particularly improving the food chain) and an improvement and protection programme for reptiles and invertebrates in the Sabor valley”, supra n.138.

<sup>170</sup>Martin Hedemann-Robinson, *Enforcement of European Union Environmental Law: Legal Issues and Challenges* (2007) Routledge-Cavendish, London and New York.

<sup>171</sup>Supra n., 138.

<sup>172</sup> Ludwig Kramer, *The environmental complaint in EU Law* (2009) 6(1)Journal for European Environmental & Planning Law 13.

<sup>173</sup>A report of 2009 commissioned by the European Commission, records: “It is evident that the [National Dam Programme] will cause significant impacts on species protected under the Natura directives. It will also have a considerable direct impact on a Natura 2000 site (Alvaõ-Maraõ), which has not been properly assessed, and some indirect impacts on other four [sic] Natura 2000 sites (Rio Vouga, Carregal do Sal, Ria de Aveiro and

#### **4.5 Lack of Adequate Public Involvement in EIA and SEA.**

We have seen from the discussion that by the time a hydropower project like Sabor Dam is challenged, the majority of the construction or work around the project was done. Portuguese national law has adopted the objectives of the EIA directive within their national legislation, however providing one of the most important features of the directive, ‘public consultation’ with little to no priority. Public participation in the discourse about environmental impact of a potential hydropower plant, is only involved in the reviewing stage of HP projects which often is too little too late to implement relevant public opinions and concerns regarding the project.<sup>174</sup> Public consultation is conducted after most of the crucial decisions about the project are already taken, limiting the people’s ability to create the necessary impact on the future of the project. Consequently, as this kind of practice goes on in the sector of public consultancy about potential hydropower projects and its impact, masses stop bothering themselves with the details of the project.<sup>175</sup> It is after the EIA reports come out with some troubling results about the environmental impact of a HPP, some public outcry starts which frequently goes unsuccessful as has been seen in the Sabor Dam case. There is no concrete national legislation to involve the public to voice their concerns about a project at the very strategic level, making an important resort to get appropriate assessments like ‘public consultancy’ futile and a mere legal requirement.<sup>176</sup> An effective use of this tool, ‘public participation’ in HPP planning can be a gamechanger. In the next chapter, Norway’s stance about public consultancy in relation to this matter will show how this can be massively handy to create a compatibility zone between expansion of hydropower and biodiversity.

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Estua´ rio do Tejo), which have not been considered at all in the [strategic environmental assessment]”; See also, Hilde Lembre, Veronique Adriaenssens and others, “*Technical assessment of the Portuguese National Programme for Dams with High Hydropower Potential (PNBEPH) Phase I and II (2009)*” [EC/DG environment Framework contract No. 07.0307/2008/ENV.A2/FRA/0020 –Lot 2 Project – 11/004766 07/07/2009]

<sup>174</sup>Constanca Vasconcelos, Andy Halimton and Peter Barret, “*Public Participation in EIA: A study from a Portuguese Perspective*”(2000), 2(4) Journal of Environmental Assessment Policy and Management, 561;available at

<<http://www.jstor.org/stable/enviassepolimana.2.4.561>>

<sup>175</sup>Ibid, p 571.

<sup>176</sup>Ibid, p 570.

The National Programme for Dam with High Hydropower Potentials (PNPEBH) , which started and continued the Sabor Dam project, went through a strategic environmental study.<sup>177</sup> Based on the study, ten dam locations were approved, assuming no harm on Natura 2000 sites. However, later when EIA came out on the Sabor Dam project in 2003 and on FuzToa in 2008, it became evident the presence of adverse irreversible impact or significant effects of these projects on the environment.

*“Transparency was lacking throughout the process. Decisions were taken based on incomplete information and false arguments. Faults pointed out by stakeholders during public consultation were blithely ignored.”<sup>178</sup>*

Moreover, there was a vacuum of observation on strategic alternatives and cumulative impact of the project’s impact on biodiversity and river ecology.<sup>179</sup>

Public participation at the strategic level of a plan is missing, whereas when such participation happens during EIA, it remains less impactful because the state is still struggling to find an effective way to engage community and stakeholders. As a result, EIA, instead of creating a safety net for the environment against projects with significant effect, its conduction becomes a convenient means of project approval. Only 5% of the projects during 2008 to 2020 were declared ‘unfavourable’, the rest were levelled ‘favourable with conditions’ , often letting harmful controversial projects off the hook.<sup>180</sup>

Therefore, it can be said an obsessive attempt to expand HPP regardless of its environmental impact coupled with systematically inadequate public involvement with these projects can easily lead to incidents like Sabor Dam. The efforts, we see, by the civil societies, NGOs or

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<sup>177</sup> JoãoJoanaz de Melo, “Not sustainable: the sad business of Portuguese new dams” (27 May,2012), CENSE -Centre for Environment and Sustainability Research, Portugal, p 3; available at [https://rioslivresgeota.org/wp-content/uploads/2016/09/2012IAIA\\_DamsNotSustainable.pdf](https://rioslivresgeota.org/wp-content/uploads/2016/09/2012IAIA_DamsNotSustainable.pdf)

<sup>178</sup> Ibid, p 4.

<sup>179</sup>Ibid.

<sup>180</sup>The Tâmega Hydropower Scheme, part of the National Programme for Dams with High Hydropower Potential (NPD), is financed in large part by the European Investment Bank (EIB), which campaigners say is in direct contradiction with the EIB’s own guidelines on hydropower investment not undermining EU nature protection rules and being subject to a proper environmental impact assessment.

The ongoing construction of the Gouvães hydropower dam on the Torno River, a tributary to Tâmega, is expected to flood part of the Alvao-Marão area – a protected nature site as part of the EU’s Natura 2000 network and a crucial habitat for threatened species such as the European otter, the Iberian wolf or the Pyrenean desman.

activists to compel authority to discontinue these processes can be severely undermined by the harmful indifference of EC towards biodiversity in the face of RE expansion. So more or less indiscrete and insincere implementation of EU nature and environment while colliding with HPP development is the most crucial reason behind the struggle to find a compatibility zone.



## Chapter Five: Possibility of Compatibility?: Diving into Stance Taken by Norway

### 5. The stance taken by Norway

Norway, even not being an EU member state, can offer a unique perspective to understand the ‘balanced trade-off’ between energy and environmental policies. Almost 96% of Norway’s energy demand is met through hydroelectricity.<sup>181</sup> That means the biodiversity situation of Norway deserves keen observation. Moreover, Norway has legally adopted the Renewable Energy Directive (RED I) and Water Framework Directive within their national legislation, imposing obligations under these directives on themselves.<sup>182</sup> Integrating both energy and nature policies in an ‘almost complementary manner’ within the national legislation, has made Norway a country producing the ‘greenest hydroelectricity’ in Europe.<sup>183</sup>

The White Paper published in 2020 by the American Energy Society (AES) used Norway as an example of creating an effective compatibility zone between hydropower development and biodiversity conservation. It has been stated that,

*“It (Norway) utilises natural advantages of geography and climate to build power plants in advantageous locations and manages them under stringent environmental regulations designed to ensure long-term sustainability. Norway’s topography, with its high mountain plateaus, abundant natural lakes and steep valleys and fjords, is ideal for hydropower development. Many hydropower plants in Norway are built on existing lakes, so there is little need to dam up rivers and create reservoirs that could displace people and have a major impact on local ecosystems.”*<sup>184</sup>

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<sup>181</sup>World Energy Council (2014), Data, Sustainability Index,

<<http://www.worldenergy.org/data/sustainability-index/>>

<sup>182</sup>While not assuming the full responsibilities of EU membership, Norway participates fully in the EU internal market, as well as being involved in related EU policy areas. This is since 1994 regulated through the Agreement on the European Economic Area (EEA).

<sup>183</sup>“How Norway produces hydropower with a minimal carbon footprint” (Oct 7, 2020) *The Explorer*, Available at

<<https://www.theexplorer.no/stories/energy/how-norway-produces-hydropower-with-a-minimal-carbon-footprint/>>

<sup>184</sup> American Energy Society, “*Water works: Case for Hydropower*” (2020), p 11, available at

<[https://invinor.no/wp-content/uploads/2020/10/AES\\_HydroPowerReport\\_2020\\_FINAL.pdf](https://invinor.no/wp-content/uploads/2020/10/AES_HydroPowerReport_2020_FINAL.pdf)>

Therefore, the chapter would focus on what Norway is doing right if any, while leading the way towards the compatibility zone.

## **5.1 Legal Framework of Norway on Renewable Energy and Biodiversity**

Norway ratified four EU directives relating to renewable energy and biodiversity. They are the Renewable Energy Directive (RED I)<sup>185</sup>, Environmental Impact Assessment Directives (EIA)<sup>186</sup>, Strategic Environmental Assessment Directive (SEA)<sup>187</sup>, Water Framework Directive (WFD)<sup>188</sup>. To integrate the objectives given under these directives, over the time Norway has developed several national legislations.<sup>189</sup> Key legislations that come in contact with renewable energy development and biodiversity and ecology conservation shall be discussed as the discussion in this chapter progresses. It can be said that Norway has almost similar responsibility like any other member countries of the EU to develop hydropower (renewable energy) while maintaining environmental integrity.

### **5.1.1 Emphasis on Licensing Process**

Norway has a well-defined licensing policy to deal with granting permission to develop and run a dam in order to generate hydroelectricity. Each kind of license is regulated by

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<sup>185</sup>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)

<sup>186</sup> Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment Text with EEA relevance.

<sup>187</sup> Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

<sup>188</sup>The WFD has been transposed into a national “Water regulation” in Norway, entering into force at the beginning of 2007.

<sup>189</sup>Roel May, KjetilBevanger, Jiska van Dijk, Zlatko Petrin and HegeBrende, “*Renewable energy respecting nature: A synthesis of knowledge on environmental impacts of renewable energy*” financed by the Research Council of Norway, 874 NINA Report, p 49, available at

<https://tethys.pnnl.gov/sites/default/files/publications/NINA%20rapport%20874.pdf>

differentiated regulation. For example, in order to carry on activity that can divert water in a watercourse one must have a licence under the Watercourse Regulation Act.<sup>190</sup> On the other hand, for developing a waterfall to install hydropower, a licence must be obtained under the Water Resources Act<sup>191</sup> and under the Energy Act.<sup>192</sup>

One of the unique features of the licensing system for Hydropower in Norway is that the licence is not allowed to the concerned party based on competition. Rather, the state-owned companies can enjoy the right to use hydropower with unlimited duration whereas, such rights for private companies are up to 60 years, provided mandatory reversion of the licence at the expiry of such period.<sup>193</sup> That means as to the Industrial Licensing Act private companies are obliged to return their licence to use waterfall and fall-based hydropower plants at the end of the concession period to the state. Private companies might have one-third ownership to the public-companies, however ‘rule of reversion’ is still applied here unless the waterfall is 2944 kw.<sup>194</sup> This approach has turned out to be effective for a country like Norway having geographical features which are favourable for developing hydropower.<sup>195</sup> Because it provides the state a broader scope to monitor and regulate these plants and their impacts along with the concerned natural resources, such as waterfall. The reasoning is not groundless at all, as the ground breaking research conducted by *Bankwatch* in 2015 revealed that most of the small scale and considerable number of large scale hydropower plants in the south-eastern Europe are owned by private companies while largely being financed by the Public European Banks.<sup>196</sup>

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<sup>190</sup>The Kingdom of Norway, Act No. 17 of 14 December 1917 on the regulation of watercourses (Watercourse Regulation Act).

<sup>191</sup>The Kingdom of Norway, Act No. 82 of 24 November 2000 on river systems and groundwater (Water Resources Act) The Water Resources Act is the general statute governing fresh water resources including ground water.

<sup>192</sup>The Kingdom of Norway, Act No. 50 of 29 June 1990 on the generation, conversion, transmission, trading, distribution and use of energy, etc. (The Energy Act).

<sup>193</sup> *Renewable Energy Development: Hydropower in Norway* (2011) ISSN 2191-4850; available at <<https://www.yumpu.com/en/document/read/8414282/renewable-energy-development-hydropower-in-norway-ohm>>

<sup>194</sup> *ibid.*

<sup>195</sup> *Supra n.*, 175.

<sup>196</sup> Igor Vejnović and Pippa Gallop, “*Financing for hydropower in protected areas in Southeast Europe: 2018 update*” (March 2018), CEE Bankwatch Network; available at

State monitoring on the development of hydropower is crucial. After 2008, the hydropower plants which were previously owned by the private sector, then reverted back to the public sector, can only be leased to private companies for up to 15 years.<sup>197</sup> Norwegian state, municipality and county-owned companies are recognised as public companies. The ‘rule of reversion’ might be effective to prevent ‘Hydropower Tsunami’ happening all over Europe and put more pressure on the aquatic ecology. Norway has gone far enough to conserve public ownership over natural resources since in 2017 EFTA court ruled against Norway regarding the ‘licence reversion policy’. The court held that the state must provide equality for private and public owners. In the case Norway, as defendant, brought up the necessity of state monitoring and regulating of HPP for the sake of the environment as a major point of contention. As argued by the state,

*“In relation to effective public management, the Defendant argues that direct public ownership, in combination with regulatory powers, guarantee the authorities a level of actual and potential management and control which is not obtainable merely through public regulation. In relation to environmental concerns, the Defendant refers to the control over limited resources such as waterfalls, making it possible to balance the need for energy supplies with future requirements for environmental protection, and states that it provides a framework for ensuring sustainable development.”<sup>198</sup>*

However, the court recognized Norway’s right to pursue state ownership over the natural resources. Norway also implemented some changes in the ‘reversion rule’ to bring conformity with EEA. After the amendments private companies or entities are barred to own any ‘new licence’ to use waterfall.<sup>199</sup>

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<https://bankwatch.org/wp-content/uploads/2018/03/Financing-hydropower-southeast-Europe-web-2018-update.pdf>

<sup>197</sup>On 26 June 2007 the EFTA Court in Luxembourg Ruling held that the Norwegian practice of the right of reversion was in conflict with the EEA Agreement. Private and public owners shall be treated equally.

Norway can still keep the right of reversion, but it must also include public owners. The 10th of august 2007 a Provisional Decree passed in the King’s Council. It will no longer be given licences for acquisition of waterfalls and hydropower plants to private actors. A consequence is that plants that have been given back to the state cannot be sold or rented to private actors.

<sup>198</sup>Judgement of the EFTA Court in the case *E-2/06* (26 June, 2007), para 45, available at

<https://eftacourt.int/download/2-06-judgment/?wpdmdl=1357>

<sup>199</sup> Supra n. 194.

### 5.1.2 Environment Impact Assessment and Public Involvement

The EIA directive was first transposed by Norway through the Planning and Building Act, 1986.<sup>200</sup> But the context behind this integration demands some discussion time, especially, to understand the importance of public involvement in developing hydropower along with other renewable energy. Norway reached its peak in expanding hydropower projects until the 1980s. However, it was in the 1960s when for the first time the environmental impact of Hydropower was seriously questioned and inquired by activists nation-wide. Such environmental movements gained more momentum in the 1970s and 1980s.<sup>201</sup> Growing involvement of the activists and the masses led the government to alter or modify a large number of plans and projects.<sup>202</sup>

EIA is one of the most important steps in the licensing process of hydropower (HP). At the first step, the applicant who wants to develop the HP project must send notification to the competent (Ministry of Petroleum and Energy) and concerned authority (Ministry of Environment). The notification contains a technical presentation of the project, alternatives, environmental impacts and the developer's proposed program for impact assessment studies

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<sup>200</sup>The Planning and Building Act ensures sustainable development for the benefit of the individual, society and future generations. It should help to coordinate state, regional and municipal tasks and provides a basis for decisions about the use and protection of resources. Construction procedures under the Planning and Building Act shall ensure that measures are in accordance with laws, regulations and planning decisions. The act also ensures transparency, predictability and participation of all interested parties and authorities. Emphasis will be placed on long-term solutions, and consequences for the environment and society will be taken into account.

<sup>201</sup>Report of Norwegian Institute for Water Research, *Hydropower in Norway: An overview of key tools for planning, licensing, environmental impacts and mitigation measures* (2016) p 21, REPORT L. 7065-2016, NIVA-report ISSN 1894-7948, available at

[https://niva.brage.unit.no/niva-xmlui/bitstream/handle/11250/2415184/7065-2016\\_200dpi.pdf?sequence=3&isAllowed=y](https://niva.brage.unit.no/niva-xmlui/bitstream/handle/11250/2415184/7065-2016_200dpi.pdf?sequence=3&isAllowed=y)

<sup>202</sup> "Conflicts culminated during the planning and construction for the Alta HP in 1980/1981. Demonstrators tried to stop the construction work physically and 400 policemen were brought in to remove demonstrators who tried to stop construction work. There was a hunger strike in front of the Parliament (Storting) by activist representing, inter alia the Sami people; Norway's ethnic minority in the north. They argued that the construction of the Alta HP-plant would have a very negative impact on Sami people livelihood and interests. The Alta plant was built, however delayed, but not according to the original scheme", ibid.

to be carried out.<sup>203</sup> Such notification along with the plan must be accessible to the public and open for public consultation and opinion.

The second step of the licensing process is EIA. An EIA for HP possessing the capability of annual production of more than 40 GWH is compulsory.<sup>204</sup> For other hydropower plants producing lower than 40 GWH shall be also subjected to EIA provided that the project has significant impact on the site. However, public and stakeholder consultation is a must, even in part. EIA report shall be open to the public and well- circulated so that it can invite more opinion on the impact, especially on alternatives and other issues that might need more meticulous impact study.<sup>205</sup>

The assessment procedure does not end here. The Norwegian Water Resources and Energy Directorate (NVE) are involved in the final two stages. After the completion of EIA and subsequent consultation on impact assessment with public and stakeholders for six weeks,<sup>206</sup> the NVE makes its final assessment on whether the concerned plan of developing HP should be implemented. The decision must be based on the impact assessment report, all the opinions and comments collected during the notification and impact assessment study and other available relevant information. The final assessment by NVE must contain complete cost-benefit analysis of the project against environmental and social impact. The assessment also contains adequate mitigation measures if and to the extent necessary. The impact assessment mostly focuses on the environment, natural resources and community. The final decision about the project comes from the result of this analysis.<sup>207</sup>

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<sup>203</sup>Supra n., 191.

<sup>204</sup> Supra n. 201.

<sup>205</sup>Supra n., 191, p 37.

<sup>206</sup>The NVE decides whether the impact assessments conducted meet with the requirements as given in the IA program, and if the fact-basis for a decision is sufficient. If not, the applicant is requested to carry out additional studies. After completion of the impact assessment, a formal application and the full impact study are sent to the NVE. All this material is made available to the public, and stakeholders, and public meetings are organised to present the new technical plans, conclusions of the impact assessments and the further handling procedures. Another 12 weeks are available for comments and opinions on the project, opinions that the applicant gets the opportunity to comment on, *ibid*.

<sup>207</sup>A licence is recommended only if the total benefits exceed the costs and the negative social and environmental impacts of the project.

It might appear from the discussion that such a licensing process for HP plants would take a long time to be completed. However, evidence suggests otherwise. In Norway, the average license processing time is shorter than Portugal or Spain.<sup>208</sup>

The most important aspect in the discussion so far is the mandatory public involvement in all the steps from beginning to end. Public involvement and consultation for a project is compulsory from the very strategic level of a plan making the implementation of the SEA directive stronger.<sup>209</sup> Moreover, The right of authority having public interest, NGOs to demand the revisions for old licenses or existing licenses of HP based on their concern varying from environmental or social point of view, is also recognised.<sup>210</sup>

It has been seen both in the context of Norway and overall that it is the environmental activists, civil society representatives and concerned masses who raise their voice and concerns from the preliminary level of a controversial plan or project. Therefore their involvement from the beginning of a project and taking consideration of their concerns has to be beneficial both from an environmental and social perspective.

### 5.1.3 Mitigation Measures

*“Norway has a long tradition and experience in building and operating devices designed to reduce the negative effects of HP development. Most mitigation measures have been directed at ecological conditions in the water course, while some have been implemented for the benefit of landscape and other important societal values. Currently in Norway the most important mitigation measures include demand for environmental flow or minimum flow,*

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<sup>208</sup>Jean-Michel Glachant, Marcelo Saguan, Vincent Rious, Sébastien Douguet and Emmanuella Gatzogiannis, *“Regimes for granting rights to use hydropower in Europe”* (Nov 2014) European University Institute, ISBN: 978-92-9084-222-4, doi:10.2870/20044, available at

<[https://cadmus.eui.eu/bitstream/handle/1814/33653/2014\\_RR\\_Hydropower.pdf](https://cadmus.eui.eu/bitstream/handle/1814/33653/2014_RR_Hydropower.pdf)>

<sup>209</sup> ibid.

<sup>210</sup> NVE discusses the demands for revision of the license conditions with the license holder and ask the license holder to consider possibilities to coordinate the revision process with upgrading/refurbishing of the current HP infrastructure, Supra n., 198.

*restrictions on regulation heights of dams, release of fish, construction of thresholds and habitat adjustments..”<sup>211</sup>*

It has been clear from the discussion so far that energy and biodiversity can not be complementary with each other all of the time. Since Norway, a hydropower dependent country, had an obligation under RED I to produce 68% of their electricity consumption from renewable energy, there exists HP projects that have adverse effects on the environment. Any HP project regardless of its small or big scale, being a land-based renewable energy technologies, has some to extreme adverse effects on the environment. After going through a tight and strong licensing process, an approved HP project can only run with appropriate mitigating measures.<sup>212</sup>

Norway implements WFD through their Water Regulations. Pursuant to the objects under this regulation, one of the popular and well-used mitigating measures is ‘minimum water flow/environmental water flow.’ In 2012 NVE published guidelines regarding ‘documentation of water flow small watercourse infrastructures with licence’.<sup>213</sup> The reason behind this guideline is the plan to further install a number of small scale HP plants. The guidelines present the requirements for control, recommendations for practical release solutions, and technical guidelines for monitoring.<sup>214</sup>

It is mentionable here that Norway has adopted four action plans throughout 1973 to 2009 to protect the watercourses. The Water Recourse Act provides permanent protection for 388 river systems against any hydropower development letting go of production opportunities of 49.5 TWh/year.<sup>215</sup> Under the act, the requirement is providing ‘preponderant priority’ to protect the river enabling the authority to reject any hydropower licensing.<sup>216</sup> Therefore, it

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<sup>211</sup>Supra n.,201.

<sup>212</sup> Supra n.,208.

<sup>213</sup> Supra n.,201.

<sup>214</sup>Supra n.,201, p 45.

<sup>215</sup>Jean-Michel Glachant, Marcelo Saguan, Vincent Rious, SébastienDouguet and Emmanuella Gatzogiannis, “Regimes for granting rights to use hydropower in Europe” (Nov 2014) European University Institute, p 67, ISBN: 978-92-9084-222-4, doi:10.2870/20044, available at [https://cadmus.eui.eu/bitstream/handle/1814/33653/2014\\_RR\\_Hydropower.pdf](https://cadmus.eui.eu/bitstream/handle/1814/33653/2014_RR_Hydropower.pdf)

<sup>216</sup>The Kingdom of Norway,Act No. 82 of 24 November 2000 on river systems and groundwater (Water Resources Act), sec 35(8).



can be said in some areas protection of nature is carrying much more weight than expansion of hydropower.

## **5.2 Following the (Nor)way towards Compatibility Zone**

The discussion so far once again highlights that energy policy more specifically renewable energy expansion policy and biodiversity conservation policy can be complementary with each other, and can also be contradictory with each other. It is upon a state, how to approach it. Surely legally binding renewable energy targets created a drive among the member states to develop hydropower plants to a level that it could affect biodiversity. Norway is using ‘one-window’ approach to increase the efficiency of a HP plant so that further need to built more plants can be lessened. The approach includes *"all parts of the total hydropower plant (dam, power station, electric installations, power lines, access roads, quarries and tips) and the corresponding acts and authorities [to be] included in a coordinated process. NVE has the responsibility to coordinate this process"*<sup>217</sup>

The high enthusiasm of Norway to involve the public, civil society, NGOs and other stakeholders in the pre-approval process of a potential HP plant has proven to be very effective for the conservation of nature. It basically creates a check and balanced situation where high probability exists that potential harmful projects will be challenged from the very strategic level.

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<sup>217</sup>Norwegian Water Resources and Energy Directorate (2009), Handling procedures, available at <http://www.nve.no/en/Licensing/Handling-prosedures/>

## **Chapter Six: Conclusion**

### **6. Conclusion**

To combat the climate change with the growing energy demand, the energy policy of the EU has been developed keeping expansion of renewable energy in the centre. The EU as a whole has been able to meet their renewable energy target for 2020. One of the crucial reasons behind this extraordinary success is setting differentiated nationally binding renewable energy targets for each member state through the Renewable Energy Directive. However this still continuing journey towards greener energy on the way might bump to other environmental concerns like conservation of biodiversity. In this situation, ‘win-win sustainable solution’ is needed which sounds good but hard to achieve. The legal regime of the EU on nature and environment does not set any binding target for conservation of biodiversity yet, but the robust and strong directives afford adequate obligations upon the states of protecting and preserving their biodiversity and ecology.

Given the environmental impact of the hydropower project, ‘no-new-dam’ campaign is gaining momentum and mass attention all over Europe. However, Hydropower is still the largest renewable energy source in the EU. The energy path suggests the domination of hydropower among renewable energy sources even in the foreseeable future. The biodiversity loss of Europe has also become a matter of concern as it has an irreversible impact on the whole environment and ecosystem as well. Therefore, to regulate this meeting zone between renewable energy development and biodiversity conservation, such energy and nature policy is needed that complement each other.

Throughout the thesis the scope of the EU biodiversity regime has been explored, implementation of which sometimes has become shoddy and insincere as the member states are pursuing larger and larger hydropower projects. It has been seen, the priority for achieving energy targets outweighs the necessity of biodiversity conservation in many of the cases. However, as to the protection given under the Habitat Directives, the Bird Directives and WFD, such priority can only be lawful after fulfilling several requirements. The requirement of ‘exemption’ actually works as a safety net for nature and environment conservation against the EU-wide ‘hydropower tsunami’. Flimsy and ineffective

implementation of the strict requirements for making a HP project ‘exempted’ under the directives, is counterintuitive for the purpose of the derogation rule.

In the comparative study between the stance of a EU member state, Portugal and Nordic country Norway regarding implementation of the nature directives, the commitment of these countries towards Biodiversity conservation in the face of growing HP project was tried to understand. Misuse of derogation rule by Portugal in the BaixoSabor Dam case and EC’s questionable role as silent spectator regarding this matter indicates the big room for improvement in enforcing ‘complementary policies’. On the other hand, not being an EU country, Norway’s commitment in implementing WFD, EIA and SEA through extensive and comprehensive licensing process for HP projects and adequate mitigation measures shows that only an effective and sincere enforcement mechanism of the conservation policies can generate scope of compatibility.

From the discussion of the thesis, it has been interestingly found that taking public consultancy seriously and sincerely is one of the most effective strategies to create the compatibility zone. Effective public participation in the most strategic level of a plan as to the obligation under SEA can really become a milestone step since it generates greater scope of assessing environmental impact of a HPP project more accurately with contribution of knowledge of local residents, environmental activists and NGOs about a particular area. In the comparative scenario from Norway and Portugal regarding this matter, it has been seen that Norway involves public consultancy at least at four different stages of the licensing process, whereas Portugal has big room for improvement in this. It is needed to be kept in mind, viewing public consultancy as ‘mere legal requirement’ and actually conducting public consultancy to acquire better knowledge about the environmental impact of a project shall produce, not surprisingly, different effects.

There is ongoing discourse about small hydropower v large hydropower. However, even a small hydropower can create significant environmental impact depending on the existing condition of the river, water quality, and location of the power plant. It would be rather wise to assess the environmental impact of hydropower plants case by case through EIA. However, since hydropower plants are land-based technologies it can never be free from environmental impact. Therefore, a state has to depend on the report to what extent the impact lies and what can be actually ‘for the long term’ achieved in exchange of that impact. For example, the

large dam project of Portugal under which twelve dam projects were conducted including Sabor Dam, showed appalling results regarding viability and sustainability.<sup>218</sup> The whole project only had the capability to carry out business for one year due to Portugal's increasing energy consumption.<sup>219</sup> Therefore, modernised EIA and SEA that assess cost-effectiveness of a project even in the future and put it against the environmental impact of such a project is extremely important. Otherwise, halting the biodiversity loss of the EU shall be continued as 'just an ambitious goal' for decades with irreversible impact on the environment.

As the EU has recently entered the RED II regime, member states are under lesser pressure regarding renewable energy development as a legally binding target applicable for the EU as a whole. Therefore, there will not be procedural or judicial action if the member state fails to meet their individual renewable energy target.<sup>220</sup> Though this has been criticized by some legal scholars as 'counter-intuitive', this creates an opportunity for the member states to focus more intensely on their biodiversity goal, laws and strategies. One of the good practices that can be brought in this matter is to emphasize transforming the old HPPs over building a new one.<sup>221</sup> Extension of hydropower can be continued by increasing pumping and storage capacity and refurbishment of the old transformable HPPs.<sup>222</sup> Retrofitting can be another option which means adding hypower producing technologies to the non-HP dams.<sup>223</sup>

Climate change is affecting the hydropower capacity as well. Due to frequent drought and flood, a significant number of hydropower plants would be at risk of non-function.<sup>224</sup>

<sup>218</sup> JoãoJoanaz de Melo, "Not sustainable: the sad business of Portuguese new dams" (27 May,2012), CENSE -Centre for Environment and Sustainability Research, Portugal, p 3; available at [https://rioslivresgeota.org/wp-content/uploads/2016/09/2012IAIA\\_DamsNotSustainable.pdf](https://rioslivresgeota.org/wp-content/uploads/2016/09/2012IAIA_DamsNotSustainable.pdf)

<sup>219</sup> *ibid.*

<sup>220</sup> Alesandro Monti, Beatriz Martinez Romera, "Fifty shades of binding: Appraising the enforcement toolkit for the EU's 2030 renewable energy targets" (2020) 29 RECIEL 221

<sup>221</sup> Claire Baffert and Charlotte Macalister, *Hydropower in Europe: Transformation, not Development* (March,2021) WWF-EU; available at

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<sup>222</sup> *ibid.*

<sup>223</sup> *ibid.*

<sup>224</sup> Jeffrey J. Opperman, Rafael R. Camargo, Ariane Laporte-Bisquit Christiane Zarfl and Alexis J. Morgan, *Using the WWF Water Risk Filter to Screen Existing and Projected Hydropower Projects for Climate and Biodiversity Risks*, Water 2022; available at

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Therefore, the irreversible biodiversity loss due to hydropower development even when the project is reckless and controversial, would not bring anything in so-called 'balanced trade-off.' It is time for an effective, integrated and strong biodiversity legal regime which actually does not go ignored thus futile when the matter of implementation comes. Only then, we could possibly hope for complementary status between expansion of hydropower and conservation of biodiversity.

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