

JustWind4All case studies

## NORTH-CENTRAL REGION, PORTUGAL

### WIND ENERGY DEVELOPMENT IN NORTH-CENTRAL REGION, PORTUGAL



Portugal has historically relied on the import of non-renewable energy sources. However, the country has significantly cut down on fossil fuels and reduced its reliance on oil (which constituted approximately 60% of national energy production prior to 1995) over the past decades: all this while expanding hydropower, wind, and solar developments. The cumulative installed capacity of wind power in Portugal is currently 5,750 MW (in 2023), and renewable energy constituted a notable 34% of annual energy consumption in 2021. Given limited available land for wind energy development, the Portuguese government shifted its focus to the country's extensive coastline in 2021, aiming to harness the potential of offshore wind.

The North-Central Region of Portugal (NCRP) is notable for its dense concentration of wind power plants (WPP). A low population density and unique topography make the NCRP an appealing region for wind project developers. However, the same mountainous landscapes that offer promising wind energy prospects also possess significant natural and cultural heritage value. This region boasts extensive protected areas where the development of WPPs is, or should be, restricted. The NCRP attracts nearly two million visitors annually, drawn by its rich heritage. As a consequence, there is some contention in the NCRP between landscape preservation and technological advancements caused by wind energy deployment. These conflicts manifest both inland, where historical and natural heritage sites are at risk, and at sea, where offshore wind energy projects are in progress.

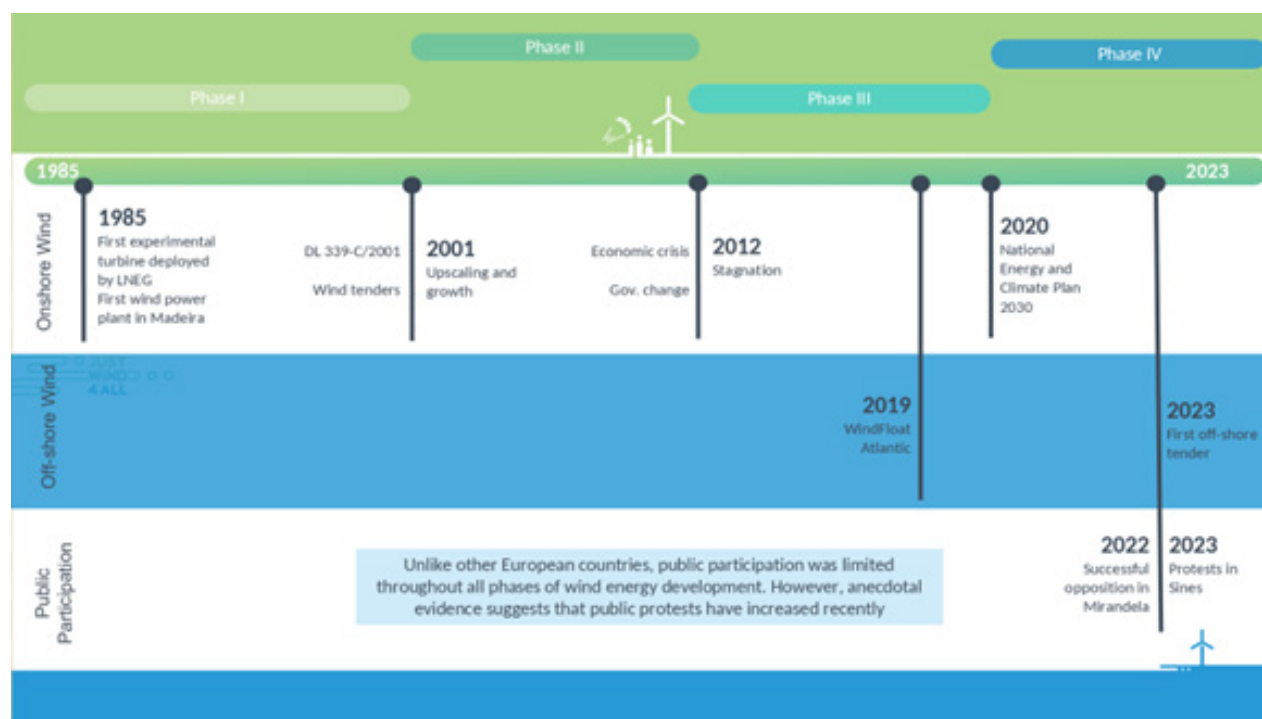
**5,750  
MW**

total capacity of  
installed wind  
turbines in Portugal

In the context of the JW4A project, this case study traces the development of wind energy governance in the NCRP over a time span of nearly 40 years. The analysis also includes an overview of wind energy governance in Portugal along four phases: a first phase of “formation” (from around 1985 to 2001), marked by financial incentives and the slow, steady growth of wind capacity, followed by a second phase of “implementation and growth” (from 2001 to 2012). Around this time, alerts were being globally disseminated by the scientific community about the causes and impacts of global warming, motivating government officials to pursue investments



in methods to reduce CO2 emissions and Portugal's dependence on coal imports to produce electricity. This led to a collaboration between the national government and project developers; and technological advancements and increased security for developers made investing in wind energy more attractive and profitable. Then, a third phase of "stagnation" (from 2012 to around 2020) emerged following the peak of the economic crisis in 2010, and a new governing coalition that slashed feed-in tariffs and suspended the attribution of new connection points to the public electricity grid. Finally, a current fourth phase of "offshore wind and repowering" (from 2020 to 2023) was prompted by a new National Energy and Climate Plan outlining ambitious renewable energy targets for 2030. These four phases are each connected to instances of change that were critical for the development of wind energy.



Based on this work, the following recommendations were formulated: inviting stakeholders to participate during the design of wind projects, enacting policies to encourage public participation, reducing permitting times, and monitoring the long-term impacts of offshore wind. These recommendations are described in more detail below.

## Recommendations

Wind energy in Portugal has developed quite rapidly along the critical instances of change outlined above, and public opposition to onshore wind energy projects has been relatively low when compared with other European countries. Decree-Law 339-C/2001 ensured that municipalities received a financial compensation from WPPs implemented in their territory, which helped to reduce opposition and ensure the money was invested locally. However, many local communities were not informed about where this money was being spent, and were disappointed when their expectation of lower electricity costs was not met.

Conversely, opposition to offshore wind has been fierce since the beginning, particularly from the fishing sector. When WindFloat Atlantic was announced, fishermen were successful in their demands for financial compensation for the loss of fishing area caused by the WPP. However, after the announcement of a public tender to distribute offshore WPPs through the west Portuguese coast, fishermen intensified their protests due to the consequent larger loss of fishing area, threatening to halt the wind developments if their concerns were not addressed. It is clear that public participation in wind energy projects has been mostly limited to public entities and project developers: this means there is a lot of potential for **social innovations and participatory practices** that lead to the creation of local value and ownership in wind energy projects. With this in mind, we wrote a list of recommendations to foster a just and effective wind energy governance for the future of wind energy in the NCRP.

### INVITE STAKEHOLDERS TO PARTICIPATE DURING PROJECT DESIGN

To achieve **procedural justice**, it is crucial that governmental authorities and project developers **create a transparent framework where communities and sectors can provide constructive feedback before the project is submitted for approval**. This will enhance the creation of local value and ensure the project is safeguarded against undetected impacts. For **offshore wind**, this includes calling **ENGOS** to use their knowledge to mitigate ecosystem impacts, the **fishing sector** to negotiate territorial and financial compensations for the loss of fishing areas, and the tourism sector, who has yet to raise its concerns in the NCRP about offshore wind, to discuss solutions to reduce visual impact and the impact on whale watching activities, if applicable. These actors should analyse together the best areas for deploying wind turbines with minimal interference to their activities and values.

### ENACT POLICIES THAT SUPPORT PUBLIC PARTICIPATION

Wind power plants in the NCRP are entirely owned by private companies. **To increase the democratisation of energy, it is imperative that national and regional governments enact policies that facilitate cooperative ownership of wind energy projects.**

The ongoing phase of **repowering** power plants presents a valuable opportunity to actively engage with local communities. Soliciting feedback on the renewal of associated infrastructure, including optimal turbine and cable placement, modifications to road accesses, and potential financial investment in the community, can enhance **distributive justice**. An illustrative case in Abruzzo, Italy, highlights the positive outcomes of such community involvement during a WPP repowering project (Maleki-Dizaji and del Bufalo 2019). Through public meetings, the local community provided valuable input to project developers that led to reduced environmental and visual impacts. Subsequently, the creation of new local jobs and the restoration of the road network and grid connections ensured economic benefits to the community. This successful approach not only addressed social concerns but also fostered **greater community acceptance**.

For WPPs that will not be repowered because they are no longer profitable, local communities could reach an agreement with companies and municipalities to make a local investment in the repowering process and take total or partial ownership of the WPP. Both situations must be supported with adequate policy that facilitates the participation of citizens and the request of loans, if necessary, to reach a cooperative ownership agreement, and the endorsement of municipalities to facilitate this transition.

**Offshore wind** provides another timely opportunity to address the historical lack of public participation in wind energy projects. Government authorities should leverage this opportunity to make room for social innovation and citizen participation options through engagement with coastal communities. The offshore wind tender could include specific conditions, mandating that proposals integrate measures for citizen co-ownership of the project. For example, fishing communities could be encouraged to participate in project ownership and work as vigilant observers for turbine operation, notifying project developers whenever action is necessary. This approach not only addresses concerns about the potential loss of fishing areas to offshore WPPs, but also involves fishermen in the project's success by providing them with a share of the income from electricity generation.

## **REDUCE PERMITTING TIMES**

Currently, permitting can take many years from project submission until authorisation by local and governmental authorities. This discourages project developers from investing in national wind energy generation, delays the achievement of renewable energy targets, and increases susceptibility to market and policy changes that may force the project to be altered midway.

To address this challenge, we recommend **modernising the digital infrastructure** that is used for the permitting process. Subsequently, we recommend **hiring and educating more staff** to get familiar with the permitting process and increase digital literacy. For wind energy in particular, staff should be trained in handling repowering and overpowering (i.e. deploying new, more modern turbines) permits. Finally, it is important to have a permitting guide accessible to project developers and public authorities that

explains the different steps necessary by each actor from project submission until authorisation. This last recommendation has already been addressed by APREN, who has prepared a **permitting guide** for renewable energies this year, with participation from APA and DGEG. The guide currently has no information for offshore wind, but this should be incorporated in the next version.

## MONITOR THE LONG-TERM IMPACTS OF OFFSHORE WIND

Offshore wind energy and the use of floating platforms to host wind turbines is still a relatively new technology. Therefore, the impacts caused by these structures are currently being studied. The public tender for offshore wind will be done through phases, and in the first phase 3–4 GW of capacity will be auctioned in the NCRP. We recommend using this opportunity to **set up a scientific station to monitor the long-term impacts caused by offshore wind turbines**. These include impacts on bird mortality, bird migratory routes, marine mammal migratory routes, fish diversity and abundance, changes in sediment and water turbidity levels, and noise levels. A similar approach has been done in Catalonia (Spain) recently, where the government advanced with an innovative research infrastructure for offshore wind research located in the Gulf of Roses, called PlemCat. A condition in the public tender to equip the power plants with state-of-the-art monitoring technology (e.g. LiDAR) and infrastructure would serve two objectives. First, it would further Portugal's position as an ambitious country that aims to pursue offshore floating wind technology while safeguarding environmental protection in return. Second, it would provide information to improve the WPP designs for the next phases of the public tender.

JustWind4All took a detailed dive into **just and effective wind energy governance** in diverse regions in the EU, summarised in seven case studies. Keep exploring the nuances of energy justice and participatory practices, summarised in regional recommendations and inspiring solutions.

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