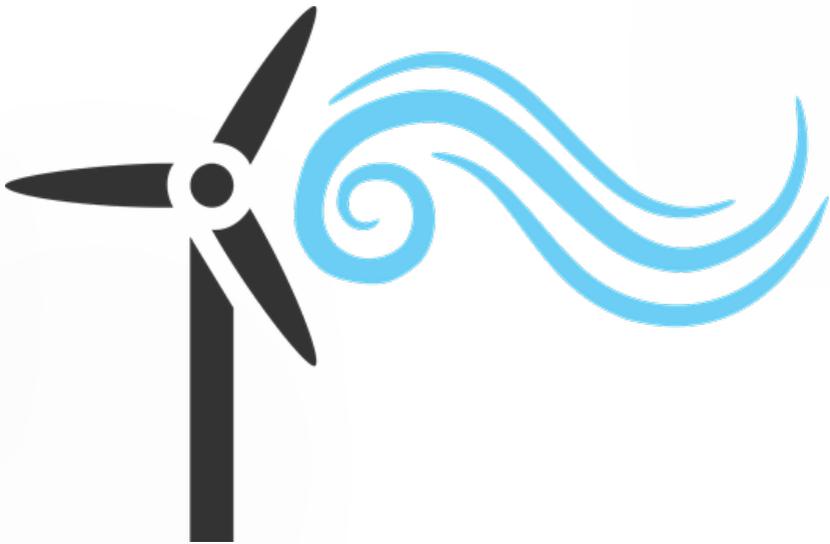




Get started in Responsible Research and Innovation

# RENEWABLE ENERGY

## Offshore Wind Energy: Our future? how?



MARINA Project - Local Mobilisation and Mutual Learning Workshops Series Phase 2

CIC nanoGUNE, Avd Tolosa 76, 20018 Donostia-San Sebastián, Spain (02/02/2018)

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## Offshore wind energy

Offshore wind energy exploits the wind force in the marine environment to generate electric power. In the past, it was argued that offshore wind energy was more expensive than conventional power sources. In 2017, technological development reversed this situation, making offshore wind a feasible alternative for power generation. Nevertheless, there are still many open questions which require attention. The average lifetime of an offshore windmill is only about 20-50 years. The location of offshore wind farms needs to be carefully studied and regulated to avoid bird migration routes, threatening productive fishing grounds, interfering with ship routes, etc. In addition, the negative impact the installation, maintenance and decommissioning of wind farms may have on the environment is also of concern. Finally, offshore wind farms cannot provide energy in the absence of wind, so power stations have to be backed up with other sustainable alternatives (which do exist but need to be robust enough). Harnessing the energy potential of offshore wind in an environmentally and economically sustainable manner is a key element for the EU. Can offshore wind energy be a plausible solution for the production of sustainable energy?

## Participation at the local workshop in the Basque Country

10 participants from different stakeholder groups put forth their solutions

 2 citizens, 1 policy maker, 2 researchers, 5 business/industry people 

## Responsible Research & Innovation (RRI) principle

Responsible Research and Innovation (RRI) engages and brings together all stakeholders, creates dialogue and facilitates knowledge-sharing. It ensures the sustainable use of natural resources and makes sure that the needs of citizens and society are integrated into research and innovation. Participants put forth proposals of collective solutions based on the six RRI dimensions:



The six RRI pillars (figure courtesy of RRI Tools EU Project)

## Workshop outcomes

In the Basque Country, less favourable geologic and climatic conditions demand further advancements to provide profitable solutions. According to the participants, succeeding in this enterprise requires coordinated actions to: (i) ensure environmental sustainability, (ii) develop better technology for fixation of structures in the seabed, (iii) optimise operation and maintenance costs, (iv) perform multidisciplinary research, (v) manage the grid and supply better, (vi) define clear and effective administrative roadmaps, (vii) create a strongly linked local business network, (viii) create robust financing tools, (ix) outreach & education, and (x) design new energy capture devices. The participants concluded the materialisation of the actions requires a fluid and strong multi-stakeholder cooperation.



The MARINA Project is funded by the EU Programme Horizon 2020. 14 partners across Europe are joining forces for a period of 36 months to bring together stakeholders around marine issues and societal challenges and propose RRI driven roadmaps of actions to respond to them.

## 45 workshops on marine issues in the European Union



- Marine biotechnologies
- Climate change
- Deep-sea mining
- Tourism and coastal cities
- Renewable energy
- Fishing and aquaculture
- Sea transportation
- Pollution caused by human, land and sea pressures

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