Ocean Energy Europe

Offshore Renewables Strategy

Ocean energy – the next European Industry

1. Why Ocean energy? The EU's next industrial success story

Significant deployment potential

2.2GW of tidal stream and 423MW of wave energy could be deployed in Europe by 2030[1] and the industry forecasts it could install **100 GW in European waters by 2050, with the right policies in place.** This represents 10% of Europe's current electricity needs, or 94 million households/year.

A new industrial opportunity for Europe

100GW of Wave and tidal energy could create 400 000 jobs in Europe by 2050. The early development of ocean energy technologies has already led to the emergence of a truly pan-European supply chain. Leading companies in the sector can already be found across Europe, including in land-locked countries, such as Austria.

Ocean energy also provides a long-term growth perspective to maritime and peripheral regions that were often hardest hit by the economic crisis. Through new offshore projects requiring skilled jobs, it revitalizes ports and coastal regions.

Remaining a global leader and exporting European technologies

Europe is home to the most advanced companies in both tidal and wave energy. Europe currently holds 66% of global tidal energy patents, and 44% for wave energy.[2] The vast majority of projects currently planned or built around the globe use European technology.

The competition is waking up, however. Canada and China both launched Feed-in-Tariffs at around €350/MWh to encourage the development of pilot farms in their national waters. The US has lately been investing up to €100m per year to support its domestic champions.

With a clear development strategy**, Europe will secure leadership in a market worth up to €53bn annually by 2050, significantly benefiting the European economy.**[3]

Net zero carbon emissions and balancing for wind and solar generation

All recent scenarios see wind and solar energy as the backbone of the EU's future electricity system. Ocean energy is a perfect partner that complements variable generation and helps to balance the system. **Tidal stream's energy production is driven by the movements of the moon and is 100% predictable. Wave energy produces electricity for hours after the wind drops, making it the perfect partner for offshore wind.** Ocean energy will work in conjunction with energy efficiency, Demand-side management, storage and other renewable energies.

---

[1] European Commission, Market Study for Ocean Energy, 2018
[2] IRENA, Ocean Energy Report, 2014
[3] 'Marine Renewables Green Growth Paper' Carbon Trust, 2011

An industry benefitting Europe as a whole

Tidal and wave energy devices are currently being deployed from Norway to Portugal, as well as in the Mediterranean and coastal regions will be host to assembly, installation and maintenance activities.

Yet ocean energy offers significant economic opportunities beyond deployment sites. Northern and Central European countries are already manufacturing components today and will increasingly do so, as it happened for offshore wind. Some of them are even developing leading full-scale devices and already export their technologies.

2. An Offshore Strategy setting the right objectives for the sector

By end of von der Leyen Commission - 100,000 homes powered by the ocean

This translates to c. 100 MW installed: 70 MW of tidal and 30MW of wave. Such a target is both attainable and valuable: Attainable, as a large pipeline of projects already exists, and several sites have been pre-consented along the Atlantic coast. Valuable, as unlocking these projects will push the sector towards industrialisation and safeguard Europe's global leadership.

By 2030-2035 – achieving €0.10/kWh through large scale deployment

Large scale deployments will result in significant cost reductions. Tidal stream could reach €0.10/kWh by 2030, followed by wave energy in 2035.[4] These objectives are agreed in the SET Plan and should be reinforced in the strategy. Beyond those dates, economies of scale will continue reduce costs.

By 2050 – 100 GW installed in Europe and global leadership

An ambitious long-term objective will signal the "size of the prize" to private investors. It will also foster more timely grid extensions or adaptations, as well as inform marine spatial planning.

3. Kick-starting industrial development – financing the first farms

Member States revenue support will unlock a significant project pipeline

Pilot and pre-commercial farms are essential to decrease the costs of wave and tidal stream and establish these technologies. Access to ringfenced revenue support at national level will unlock private finance for these projects.

How to:

- ***Work with the Member States to draft a clear plan for the first 100MW in Europe***
- ***Encourage the inclusion of tidal stream and wave energy in NECPs***

Blended EU instruments to finance 'valley of death' technologies

Financing costs associated with innovative ocean energy farms can make up as much as 50% of total project costs. Targeted EU instruments can reduce those financing costs by providing grants, guaranteed loans, or low-cost debt. This public finance also re-assures investors, making it easier for projects to reach financial close.

[4] In line with the SET Plan Implementation Plan targets agreed by Member States, Commission and industry

Several funds and programs already exist - Horizon Europe, Innovation Fund, InnovFin EDP, BlueInvest Platform, Life, etc… Allowing to combine them efficiently under e.g. EU Invest would greatly improve their efficiency.

How to:

- ***Channel existing European R&I funding into ocean energy***
- ***Use the same due diligence and similar timelines to access different financial instruments***

Insurance & guarantee to enable the first pilot farms

Commercial insurance products covering innovative offshore technology simply do not exist. And if they did, insurance premiums would be prohibitive. Similarly, manufacturer guarantees cannot cover all technological risks before the device has matured to 'off-the-shelf' status. This mean that all risk remains with investors, who refuse to commit or else require compensation via very high returns.

A European Insurance and Guarantee Fund, covering several pilot farms and pre-commercial projects can cover and mutualise a large part of the technological risks of these projects, at minimal cost. This will lower the cost of capital and allow renewable technology developers to secure finance for these projects. The Ocean Energy Forum outlined how this could look here.

How to: Create an EU Insurance and Guarantee Fund covering the technological risks of innovative offshore renewables

Building international partnerships to mutualise investments

Sharing the cost of early technology development can make it easier for all involved to commit finance and accelerate deployment. Other nations have already shown interest in the development of offshore renewable technologies. International partnerships could allow European technologies to progress faster, accelerate economies of scale and penetrate new markets.

Such partnerships can range from a Memorandum of Understanding on the development of the technology and sharing of best practices, to joint deployment targets.

How to: Launch international partnerships with Canada, Japan & the US

EIB as an export bank supporting EU global leadership

European funds cannot presently be used for projects located outside EU waters. The EIB could help solve this issue and maintain the current global European lead. Several European companies have already found opportunities to export their devices and programs such as InnovFin EDP could help them reach financial close.

How to: Mandate the EIB to explicitly finance the construction of turbines/wave energy converters in Europe for deployment internationally.

4. Streamlining project development

Streamlined consenting and licensing procedures to accelerate deployment

Knowledge exchange and the development of best practices can help regulators learn from each ocean energy deployment and apply an efficient approach to ocean energy licensing and consenting across Europe.

How to: Create a Member States working group to streamline licensing and consenting

State Aid guidelines should facilitate demonstration projects financing

Current notification rules add risk and complexity for project developers. State aid notification is mandatory from EUR 15m of investment per undertaking. Most demonstration projects are above this threshold despite being very small and thus not having an impact on competition and the market.

The Guidelines also contain essential market design rules that should be maintained, such as the possibility for technology specific tenders or priority dispatch.

How to: Increase notification threshold to EUR 50m per undertaking for demonstration projects – in line with treatment of CCS.

Marine Spatial Planning must take ocean energy into account

The ability to secure space at sea will be crucial for the industrial development of the ocean energy sector in Europe. Highlighting the sector's potential and the main wave and tidal stream resource areas in the coming months will ensure ocean energy is fully integrated into national MSPs.

How to:

- ***Encourage Member states to include ocean energy in their MSP plans***
- ***Encourage Member States to set up dedicated sites for pilot farms – grid connected, consented, licenced.***

5. Enabling large scale deployment in Europe

Planning the necessary grid extension

Transmission and distribution system operator plans do not currently take wave and tidal deployments into account in their plans. As a result, future installations might be constrained by grid availability. To ensure the swift deployment of the sector, these plans should reflect the Commission's projections for ocean energy realistically.

How to: Require TSOs to incorporate ocean energy in their ten-year network development plan