

Policy recommendations from the Ocean Energy Scale-up Alliance

Marine energy has the potential to generate 300 GW of renewable energy worldwide, supplying 350 million households of electricity. The market around the industry could generate over €100 billion of economic value in the entire supply chain from manufacturing and deployment to operation and maintenance, creating over 600.000 jobs. With predictable production, complementary to solar PV and wind, it can contribute to securing the energy supply and forms a valuable addition to the renewable energy mix.

To capitalise on these opportunities and reach industrial roll-out, marine energy technologies need a favourable policy environment. Policy support can generally make or break innovation. In this OESA session different speakers shared their experiences in regards to policy around marine energy and the lessons that were learned from various cases.

The Dutch Approach: towards integrated solutions

Marine energy can form a valuable addition to current and future wind parks. To make this step to multi-use parks, marine energy needs to be included in maritime spatial planning (MSP) designs. The Dutch government has included marine energy in their vision on the spatial planning of the North sea. This confirms that the Dutch government sees marine energy as a potentially beneficial addition to multi-use windparks.

The Netherlands uses its part of the North Sea very intensively. With increasing pressure on space due to combining new and old economies, multi-use is becoming more and more interesting for governments from a maritime spatial planning point of view. A representative from The Ministry of Agriculture, Nature and Food Quality shared insights gained from the North Sea programme. This programme aims for a sustainable blue economy and cooperation between countries on the North- and Baltic sea. Strategically, this programme provides three aims: a resilient and ecological healthy sea in combination with sustainable use, to overcome the energy, food and nature transition, and to stimulate a sustainable economy on sea. In accordance with the principles of stakeholder management and good governance, a variety of stakeholders was involved from the start to ensure effective cooperation.

'We see marine energy as a potentially beneficial addition to multi-use windparks'



Multi-use is a way of using available space efficiently. Joint supervision and maintenance are also possible, to lower overall costs which is beneficial for emerging technologies like marine energy. The synergy and system benefits for local ecosystems are abundant. The Dutch government would like to implement a nature inclusive multi-use park filled with innovative technologies, such as marine energy, in a current wind park optimising the used space. In the eMSP programme, the Dutch government also shares their experiences with 10 countries facing similar conditions, problems and research and innovation questions.

The Dutch approach to multi-use could set the norm for other countries. Optimising the used space with for instance marine energy will require further development of these technologies, the Dutch government acknowledges. Therefore, the Dutch government is preparing multi-use pilot programmes in the North Sea. Other countries can learn from, and adopt, similar plans and programmes to accelerate the smart integration of marine energy in spatial designs.

Insurance as the new golden ticket?

Offshore projects are capital intensive. De-risking projects through an insurance fund can act as a “golden ticket” for the scale-up of ocean energy. A representative of Renewable Risk Advisers described a new insurance and warranty fund that could accelerate ocean energy's roll-out. The recommended setup of the fund would have a public, triple A rated, guarantee. It would need three characteristics:

- A pooling mechanism to be created to provide the equivalent of decommissioning bonds, ensuring that the environment is restored to its former condition.
- A protected cell industry captive structure to be created to provide cover for the costs of repairing and replacing defective and broken-down components resulting in downtime and business interruption losses. Every project here would have its separate “contingency fund” to make them independent of one another.
- A panel of risk experts to audit and analyse gaps in the project's own risk management.

A worked example showed how public guarantees of around €48m can unlock 55 MW of ocean energy capacity and capital investments of circa €440m, creating more possibilities for developers and flexibility for investors making the sector that much more attractive. So should policy makers treat the proposal of an insurance and warranty fund as a “golden ticket” to finance demonstration and pre-commercial farms?

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The “golden ticket” is more likely to be a strategic blend of financial instruments. Most policy makers will agree that grant funding has shown to effectively reduce the total financing requirement and cost of finance in marine energy. Revenue support is perhaps more suitable for financing OPEX and interests from debt. However, an insurance and warranty fund can be the golden ticket to cover marine energy’s technical risk, reduce financial exposure and allow private investors to fill the remaining financing gap at lower cost. To achieve the goal of an marine energy roll-out, instruments can ideally be used in combination, as each reduces total finance needs, whether upfront or annual.

Lessons learned from financial support schemes in the UK

For the next stage in the development of marine energy technologies, a combination of pilot projects and large scale deployment are needed. Using UK over the last 12 years as a case study, the European Marine Energy Centre (EMEC) experienced the importance of the right balance between government and private investor support. Ideally, the policy environment can speed up the deployment of pilot projects by making private investments in innovative technologies more attractive.

The last 12 years has seen the impact, both good and bad, of policy developments for marine energy. Commercialising tidal and wave energy requires both a technology push and a market pull.

A technology push consists of the development and evaluation of new technology. This can make the technology proposition investable for investors and policy makers. The EU has successfully provided a lot of support to develop marine energy already, via R&D grants for example, to create that technology push.

A market pull consists of incentives to invest in the given technology. The goal is to make a sector attractive for potential investors. These incentives are often revenue oriented, which is visible in the search for alternative markets for marine energy besides power-to-grid utility. However, policy-frameworks can also be highly effective as a market pull. The government can persuade investors with policy tools such as targets and subsidies. These tools mitigate risks and/or costs for capital intensive projects.

‘The message to policymakers has to be clear, consistent and coordinated’

A case study for marine energy in the UK showed how powerful policy based incentives can be. The Renewables Obligation programme there was successful in incentivizing the deployment of marine energy projects, due to the certainty it provided investors. Producers were obligated to source an increasing percentage of their power from renewable sources. Suppliers would meet this obligation by presenting ROCs to the government. ROCs were certificates issued to operators of accredited renewable generating stations for the eligible renewable electricity they generated. Suppliers that lacked sufficient ROCs to cover their obligation had to make a payment into the buy-out

fund for a fixed price per MWh shortfall. The proceeds of the buy-out fund are paid back to suppliers in proportion to how many ROCs they have presented. In doing so, a market was created with prices of ROCs approaching zero when renewable and non-renewable generation costs were similar. Due to the programme, more pilot projects than ever before reached the deployment phase.

When the Renewables Obligation programme was closed, the emerging technologies could no longer compete with (near-)commercial renewables or (non-)renewable alternatives. The number of projects hitting the water decreased drastically. Therefore, industry representatives have lobbied the government to create a level-playing field for emerging technologies. The main asks from the industry were a deployment target and revenue support. The former has not yet been achieved, but the latter is. When lobbying, cooperation in the sector has proven essential and it was the coordinated ask that made the difference in the end. Public engagement and attention are also necessary to get the general public on board with the benefits of marine energy. A major lesson learned was that the message to policymakers has to be clear, consistent and coordinated in regards to the benefits. The case for your technology has to be presented similarly every time to get the message to stick and of course you need to be able to prove all of your claims.

Conclusion

The OESA workshop was not only to give insight into which tools are available in the policy toolbox. But, perhaps more importantly, it gave us insight in how to tailor a combination of tools to fit the specific needs of the industry. The stakes of getting it right are high.

The Dutch approach not only highlights how marine energy fits in an effective use of the ocean, but also how to prepare for this future. Insurability of marine energy will be important, but not the only “golden ticket” needed to roll-out marine energy. Both technology push and market pull will be needed throughout, as exemplified by the UK case study.

Now it is time to use these lessons to enable further deployment of marine energy across the North Sea region. The Interreg North Sea programme stimulates the development and adoption of ocean energy solutions by supporting innovative technologies and ideas. This transnational partnership is a promising sign that the lessons regarding the message to policy makers and cooperation within the sector have borne fruit.

For more information, visit the websites of DMEC or the Ocean Energy Scale-up Alliance (OESA).