



ETIPOCEAN

European Technology & Innovation Platform for Ocean Energy

Report on stakeholder & policy needs



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1. Introduction

ETIP Ocean is a recognised advisory body to the European Commission, part of the EU's main Research and Innovation policy the Strategic Energy Technology Plan¹. It aims at defining research and innovation priorities for the ocean energy sector and promoting solutions to the industry and European and national policy makers.

The primary objective of Work Package 3 is to quantify and explore the future value of the ocean energy sector to Europe in terms of Gross Value Added (GVA) and the socioeconomic benefit. This work package will build upon the analysis completed for the ETIP Ocean 2017-2018 project, in which key finance challenges were identified. ETIP Ocean 2 project will expand the scope beyond finance challenges, addressing wider economics and social impacts separated into two levels – macro and micro-economics.

This report identifies the key stakeholder and policy needs that will inform the GVA and Socioeconomic studies. It will also feed into the policy coordination work of ETIP Ocean.

2. Analysis of sectoral policy needs

The key stakeholder and policy needs were identified through consultation of the ETIP Ocean platform, a survey that the platform was invited to complete. The survey (see [Annex I](#)) was prepared by the project partners and focused on sector's finance needs and wider economic and social impacts of ocean energy deployment.

The survey was created on the online Feedier feedback tool² and the link to the survey was sent to all project and technology developers, power producers and test centres in the ETIP Ocean mailing list. In total, 28 responses from 21 different organisations were completed (see [Annex II](#)). Responses from the same organisation were combined in order to remove duplication. The responses consist of a balanced representation of the European ocean energy sector, with one respondent from North America. The results were analysed by the task leader and are explained in the following sections.

2.1 Financial and policy needs

2.1.1 Revenue support clearly the most needed policy intervention

The results show that the requirement for revenue support remains as crucial as ever³; respondents scored a **stable revenue support framework for ocean energy** as the most important factor in reducing their Levelised Cost of Energy (LCOE) in the long term ([Chart 1](#)). Ocean energy projects are at demonstration and pre-commercial stages, where both costs and risks are high due to the first-of-a-kind nature of the technologies. Projects in these stages are also expected to have some private funding, but the wholesale electricity prices are not enough to repay debt or to service equity. Earmarked revenue support for ocean energy will unlock ocean energy projects and will send a signal that there is a market to investors, utilities and original equipment manufacturers (OEMs). It could be provided within existing national support frameworks for renewable energy.

¹ Available at: https://setis.ec.europa.eu/system/files/set_plan_ocean_implementation_plan.pdf

² Available at: <https://feedier.com/>

³ ETIP Ocean (2019), '[Powering Homes Today, Powering Nations Tomorrow](#)'

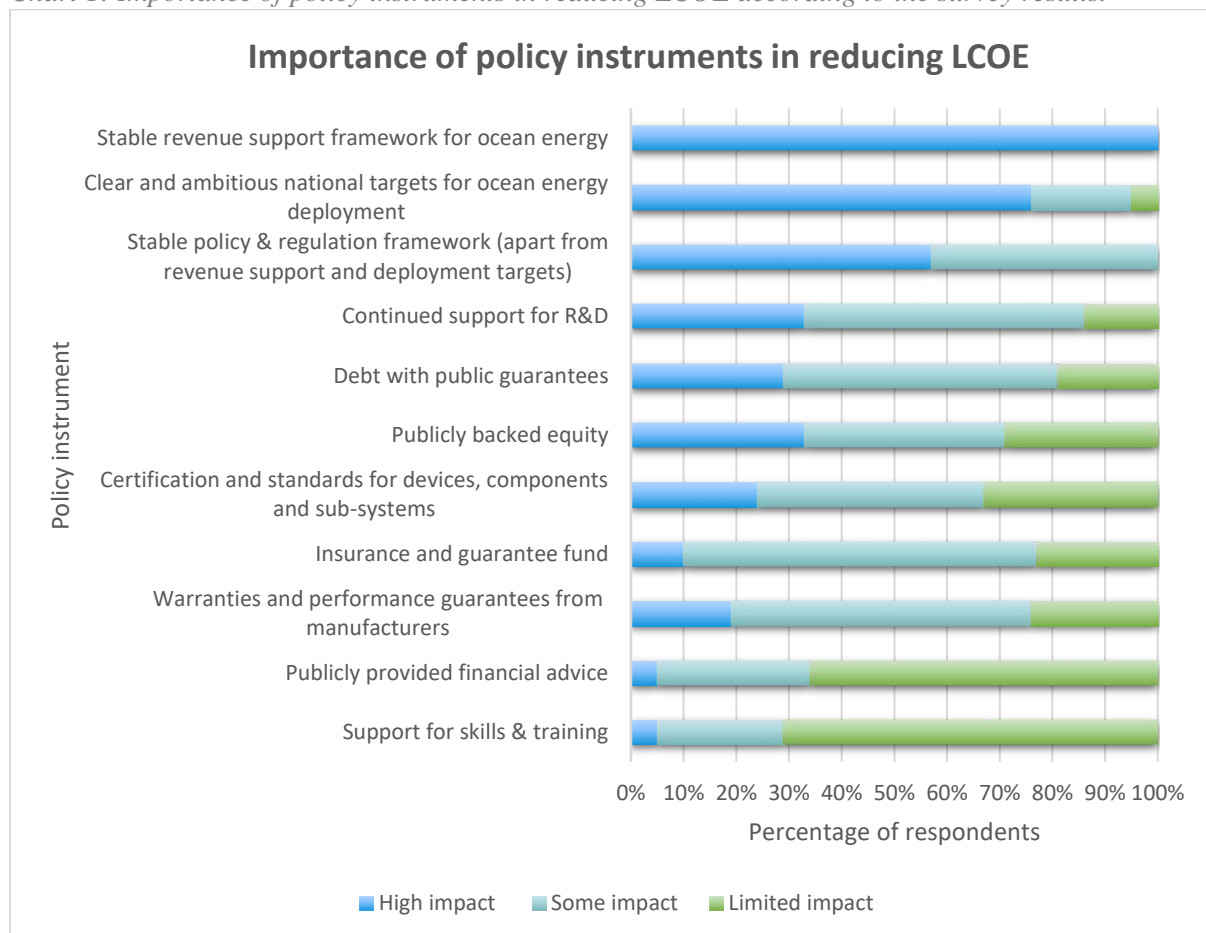


Clear and ambitious national targets for ocean energy deployment were also ranked 'very important', followed by a **stable policy and regulation framework for ocean energy**. This confirms that clear signals on future markets are necessary to attract necessary investment for emerging technologies such as ocean energy.

The respondents also scored **continued support for research and development (R&D)** relatively highly. Learnings from the R&D stage are very important, because they reduce risks in the next stages. However, private investors are often reluctant to support R&D activities, because the risks are high and return times are long. Therefore, grants of up to 100% funding will drive forward innovation in some circumstances.

The least important factors according to the results are **publicly provided financial advice** and **support for skills and training**. These measures are perhaps seen less significant as they are not currently major 'bottlenecks' to the sector's development at present.

Chart 1: Importance of policy instruments in reducing LCOE according to the survey results.



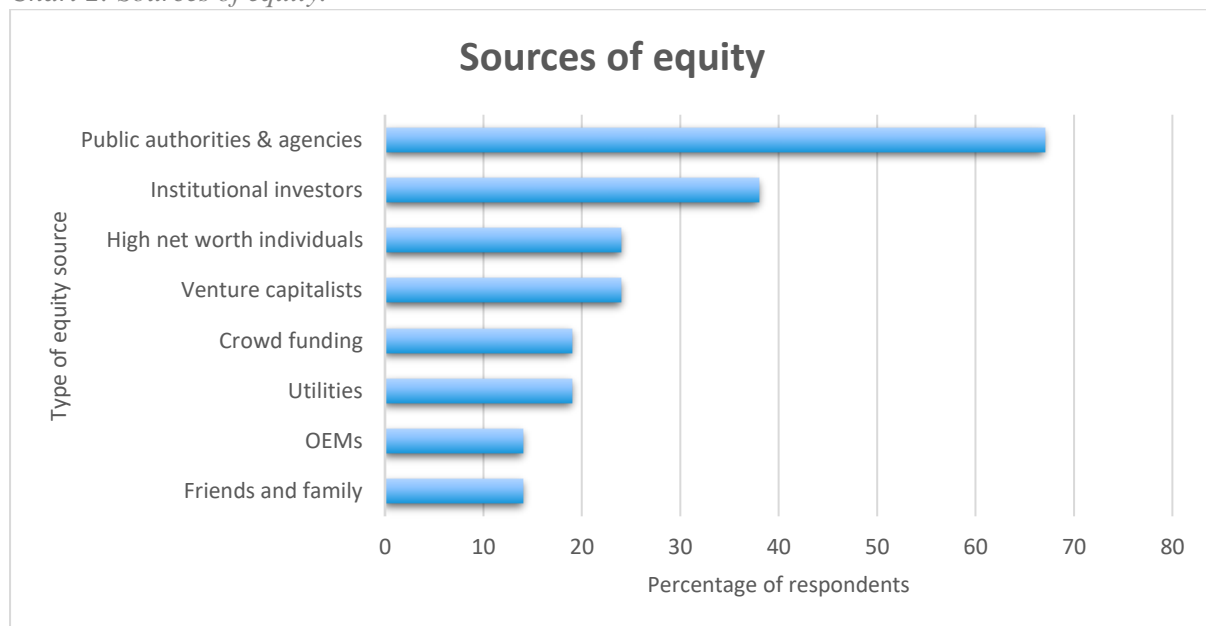


2.1.2 Financing projects

According to the results, just under half of respondents have sought commercial debt for their ocean energy project in the last two years. Of these, 38%⁴ were not successful. The main reasons for rejection were **lack of revenue support, uncertainty over the future of the market** and **the state of the technology**. This reconfirms that importance of the policy priorities identified in the previous section (see [2.1.1](#)), as these would help the sector access debt. These will also unlock demonstration projects, which will generate operational data and reassure investors on the state of the technology.

The primary sources of equity among the respondents are **public authorities and agencies** and **institutional investors**, with 67% and 38% of the respondents, respectively ([Chart 2](#)). It was often coupled with another source – almost half of all respondents had more than one source of equity. This reflects the fact that many ocean energy technologies have reached the pre-commercial phase, where projects require higher investments than for prototypes and therefore many sources are needed to cover the costs.

Chart 2: Sources of equity.



2.2 Positive impacts at local, regional and European level

2.2.1 Developers are active in stakeholder engagement

Engaging with the local community in any type of development highly strengthens public acceptance of the project. This is even more important to a new sector such as ocean energy, because it needs to increase awareness and understanding among local stakeholders.

76%⁵ of the respondents had engaged with the local community when developing an ocean energy project. The most common means of engagement were **meetings with officials**,

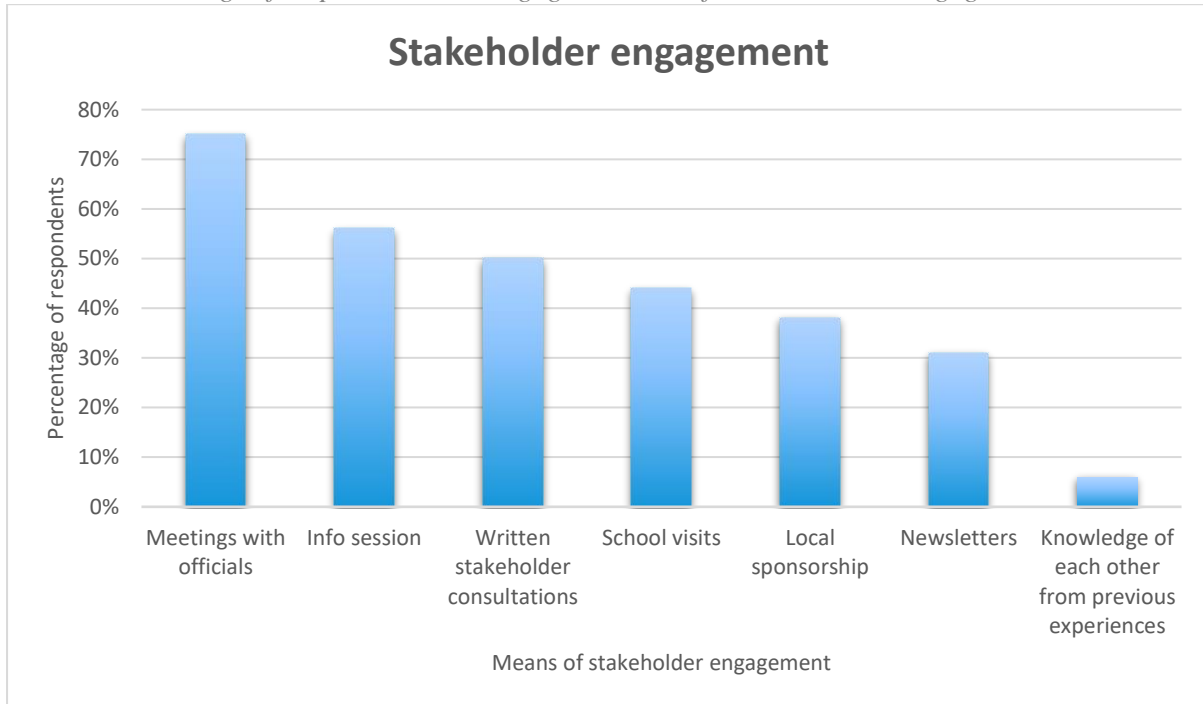
⁴ Some of the successful 62% were large companies or had bonds issued by private funding or credit notes.

⁵ Of the remaining 24%, not all had a project in the water.



written stakeholder consultations, info sessions and school visits ([Chart 3](#)). 71% of those who had engaged with the local community employed more than one approach. This indicates that ocean energy developers appreciate the value of local community engagement. These consultations provide deeper insights into the local area, businesses and citizens, which could be beneficial during the project.

Chart 3: Percentage of respondents who engaged in each of the stakeholder engagement measures.



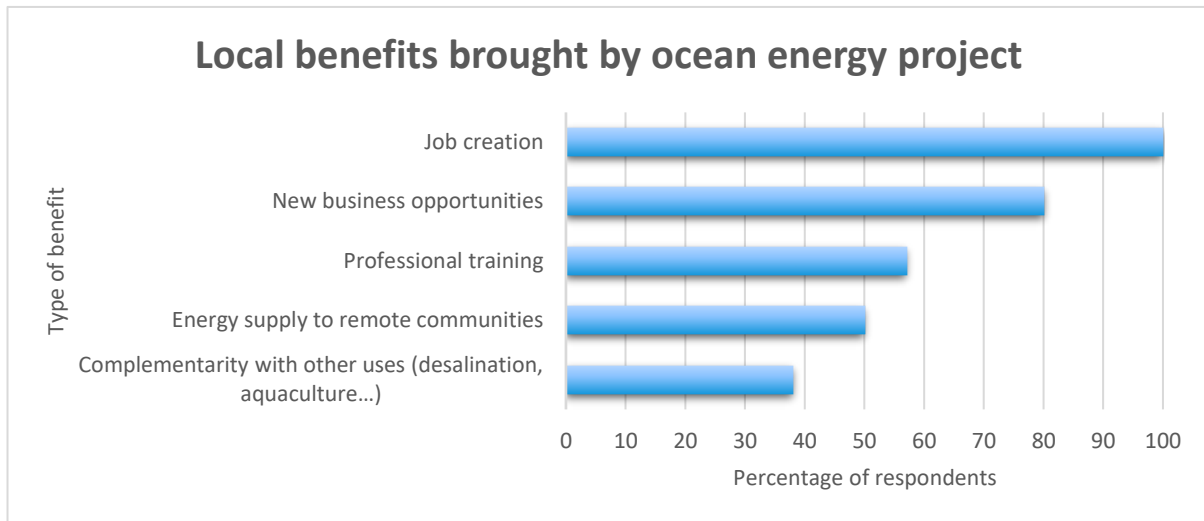
2.2.2 Ocean energy creates local jobs

Acceptance of new technology projects is stronger when the local community benefits directly. The results show that the benefits of ocean energy benefits are concentrated around the locality. All respondents **mentioned job creation** as a benefit brought within 150 km of the deployment site ([Chart 4](#)). **New business opportunities** were mentioned by 80% and **professional training** by more than half of the respondents, and **energy supply to remote communities** and **complementarity with other uses** by 50% and 38% of the respondents, respectively.

These results demonstrate the range of different ways in which ocean energy can revitalise coastal communities. It is important to communicate the positive local impacts from existing projects more widely so that local communities are more aware of the benefits that are available.



Chart 4: Local benefits brought by ocean energy project within 150 km from the deployment site.



2.2.3 Supply chain expenditure strong in Europe

As seen in the previous section, ocean energy projects often create jobs and business opportunities in the local communities. According to the results, the supply chain expenditure is strongly focalised at a national and European level.

On average 42% of supply chain expenditure is focused within 150 km of the deployment site, with up to 100% of spend staying local in some cases ([Chart 5](#)). Given the nature of ocean energy deployment sites (limited economic activity & low population density) this is an excellent result and will have a big impact on local communities.

Even greater numbers were found at the country level: on average 63% of supply chain expenditure occurred in the country of deployment. Nearly one fourth of the respondents indicated national supply chain expenditure of more than 80% ([Chart 6](#)).

When looking at European companies, the average supply chain expenditure occurring in Europe was 87%. The majority of respondents incurred more than 80% of their supply chain expenditure in Europe ([Chart 7](#)).



Chart 5: Supply chain expenditure within 150 km from the deployment site.

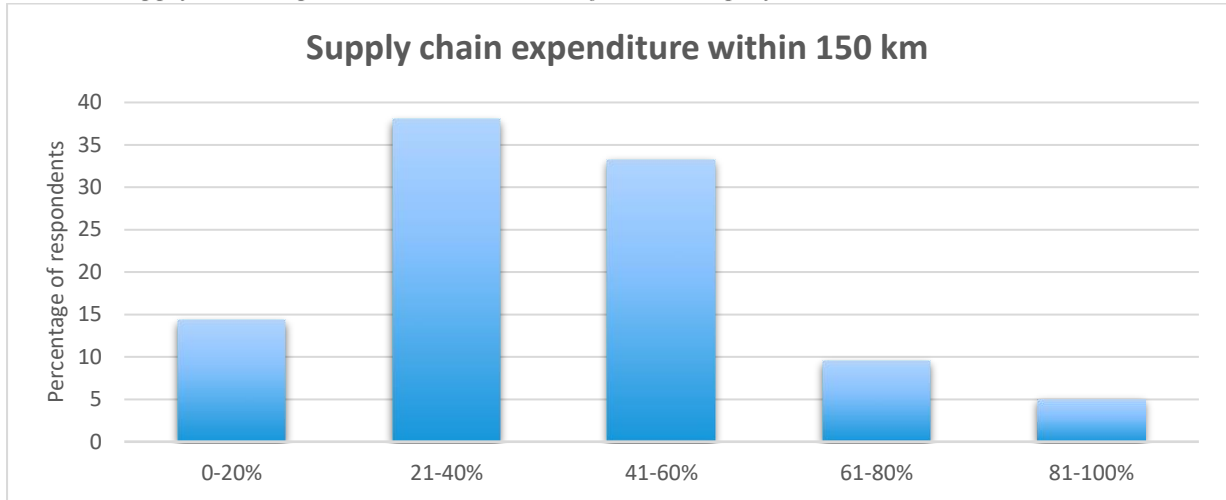


Chart 6: Supply chain expenditure in the country of deployment.

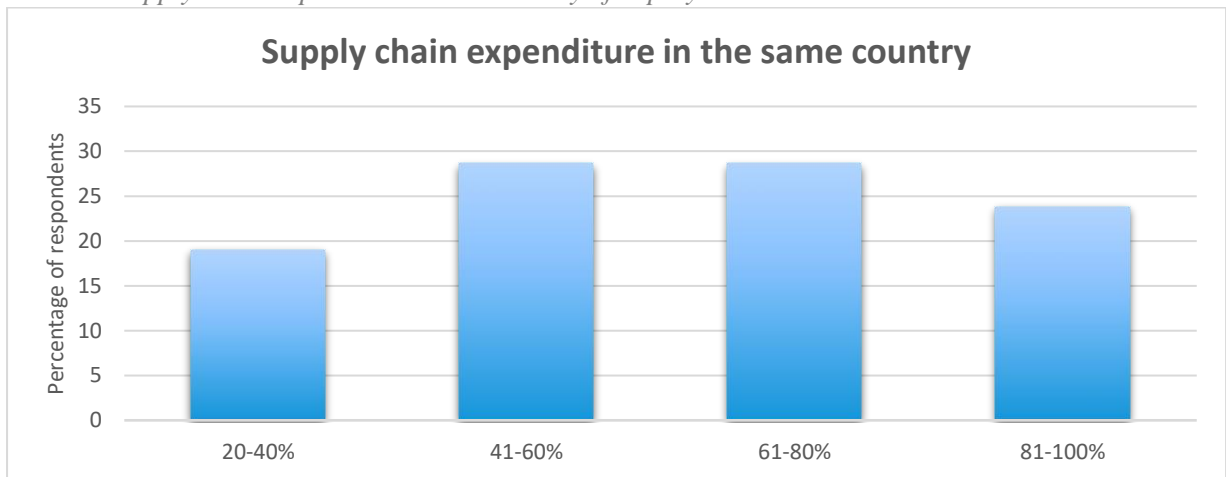
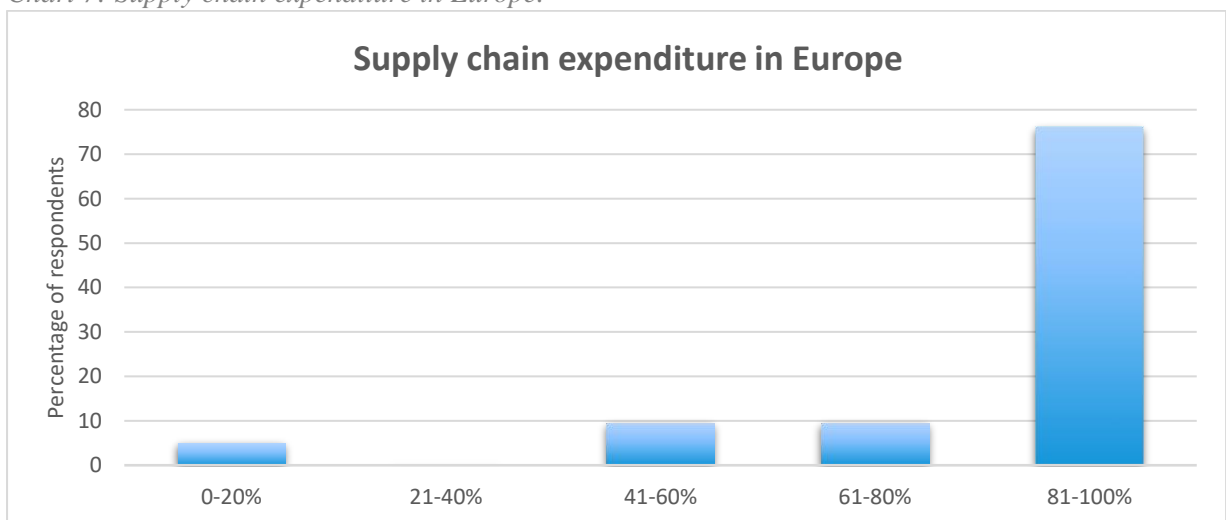


Chart 7: Supply chain expenditure in Europe.





These results reinforce the previous section's finding that ocean energy has a highly positive impact on the local economy. Using the local supply chain means economic activity for coastal regions, as ocean energy uses the same infrastructure and supply chains that are used for shipbuilding, fishing, and oil and gas. Furthermore, the results show that Europe still has its 'first-mover advantage' in the global ocean energy sector; European supply chain provides most of the services required by the European companies. This confirms that Europe has a lot of expertise in the sector and potential to export to global markets.

3. Conclusions

Ocean energy has many positive impacts at local, regional and European level. It creates jobs and new business opportunities by using local supply chain. It is also an important market opportunity for Europe, and the European companies have great potential to export globally.

Challenges to finance projects remain, as demonstration and pre-commercial projects have more technological uncertainties and higher investment needs. To support and advance ocean energy development, the sector has identified the following priorities:

- A stable revenue support framework earmarked for ocean energy;
- Clear and ambitious national targets for ocean energy deployment;
- Continued support for research and development.

These measures will boost the development of ocean energy and bring it faster to industrialisation.

4. Next steps

The next step within Work Package 3 is to produce the GVA study, which looks more closely at the impact of the ocean energy sector on the European economy. The GVA study will explore the potential benefits available to the European supply chain, following focused large-scale investment in the ocean energy sector.

Building on the GVA study, the Socioeconomic study will produce key quantitative results in terms of gains, impact on the value chain, impact on occupational distribution and impact on educational requirements. It will also include a qualitative discussion of the social impacts that cannot be expressed in monetary term, such as preservation of local communities, sense of ownership, and community participation in decision making.

The results of this report regarding the supply chain and local impacts of ocean energy will inform the GVA and Socioeconomic studies.

As a means of supporting the policy coordination work of ETIP Ocean, an infographic based on this report will be published to clearly articulate the sector needs with relevant stakeholders.

Throughout the project, a series of free-to-attend stakeholder engagement webinars will be organised. The webinars will continue knowledge sharing about financing of research and innovation projects in the ocean energy sector. They will also invite ocean energy companies to share experiences on how they could streamline their business development processes.



Annex I – Survey questions

1. What would have the biggest impact to reduce your LCOE in the long term? (1 = highest impact)

- warranties and performance guarantees from manufacturers
- stable revenue support framework for ocean energy
- publicly backed equity
- debt with public guarantees
- insurance and guarantee fund
- stable policy & regulation framework (apart from revenue support and deployment targets)
- certification and standards for devices, components and sub-systems
- continued support for R&D
- clear and ambitious national targets for ocean energy deployment
- publicly provided financial advice
- support for skills & training
- other:

2. Have you engaged with the local community for any ocean energy projects that are already in the water? Y/N

3. If yes, please indicate how:

- written stakeholder consultations
- meetings with officials
- info session
- school visits
- newsletters
- local sponsorship
- other:

4. What benefits will your project bring locally (within 150 km from your latest project deployment site)?

- job creation
- energy supply to remote communities
- complementarity with other uses (desalination, aquaculture...)
- new business opportunities
- professional training

5. Have you sought commercial debt for your ocean energy project for the last 2 years? Y/N

6. If yes, were you successful? Y/N

7. If you were not successful, what were the reasons given?

- State of the technology



- No revenue support
 - Uncertainty over the future of the market
 - Other:
8. What are the primary sources of equity for your company?
- Friends and family
 - Institutional investors
 - Venture capitalists
 - Public authorities & agencies
 - OEMs
 - Utilities
 - Crowd funding
 - High net worth individuals
 - Other:
9. Please provide an estimate of the percentage of the supply chain expenditure that occurred/will occur in the country in which your latest project is located.
10. Please provide an estimate of the percentage of the supply chain expenditure that occurred/will occur within 150 km from your latest project deployment site.
11. Please provide an estimate of the percentage of the supply chain expenditure of your latest project that occurred/will occur in Europe.



Annex II – Breakdown of respondents

Type of organisation	Number of respondents
Tidal technology developer	4
Wave technology developer	8
Test site	3
Utility	2
Project developer	3
Undefined	1