Study to support investment for the sustainable development of the Blue Economy

Service Request No EASME/EMFF/2017/038

Competitive Multiple Framework Service Contracts for the provision of *Studies related to the future development of Cohesion Policy and the ESI Funds (Lot 3)*

Investment Platform Recommendation

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Executive Agency for Small and Medium-sized Enterprises (EASME)
European Maritime and Fisheries Fund

2018

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Abstract

This report details a recommendation for a much-needed Blue Economy Investment Platform (BEIP) to address major market failures to supply capital to high potential innovative young businesses. It recommends establishing an umbrella fund to channel additional funds into fund managers wholly or partly focused on one or more Blue Economy sectors. The report was compiled based on intensive engagement with market actors including SMEs, industrials, fund managers, banks and other actors and bases its recommendations on these first hand interactions, complemented with extensive desk research. The report makes a strong case for rapid action to address the market failure, particularly around availability of equity finance, by mobilising financial resources from the public and private sector and ensuring professional management of these resources. The proposed BEIP could be complemented with additional added value features such as a technical assistance facility, capacity building, matchmaking, community building and event management services. It is hoped that this report will serve as a basis for short-term action by the European Commission and to catalyse support from other public institutions as well as the private sector.

Executive Summary

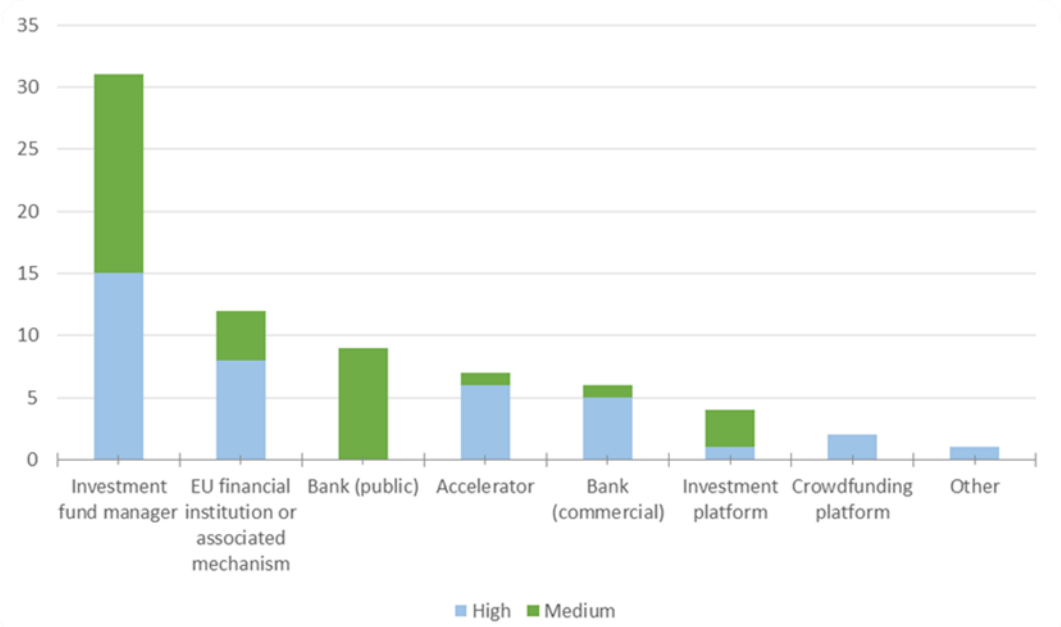
The European Commission adopted the Blue Growth Strategy in 2012 in order to harness the potential of Europe's oceans, seas and coasts for growth and jobs. Since the adoption of the strategy, the Blue Economy has become a driver for Europe's welfare and prosperity. Europe's maritime economy is expected to become an even more significant source of jobs and growth in the years to come. However, despite concerted efforts by the European Union to increase funding for Blue Economy actors, access to funding with acceptable terms remains a key obstacle for innovative businesses. **This study addresses the funding gap for innovative and sustainable business sectors in a Blue Economy that makes up 5% of the EU's GDP.** The European Union has increasingly been working with partners such as the EIB Group to look into ways to stimulate investment in the Blue Economy, but despite the progress achieved, there is still room for improvement in financial support for Blue Economy actors.

This report makes recommendations on closing the remaining funding gaps through a Blue Economy Investment Platform (BEIP). With the implementation of such a BEIP, access to funds for companies working in under-funded areas of the Blue Economy should be improved. Funding gaps for sustainable businesses that provide inclusive growth and employment was therefore given particular attention. The recommendations made in the report seek to contribute directly to the implementation phase of the European Commission's mobilisation of funds in a way that leverages additional investment from the public and private sectors. An analysis of the existing requirements of market participants through direct engagement and a careful evaluation of possible options are at the core of this recommendation paper.

Our recommendations are based on strong engagement with the maritime SME community and a detailed analysis of the funding needs of maritime SMEs. This was carried out by the Acacia team of SME Finance Experts during the first half of 2018. The project team was tasked with the development of a Blue Economy pipeline of companies and projects, which led to the identification of 400 companies based on a database compiled by DG MARE and EASME and additional research by the team. **The team elaborated a longlist of 100 eligible companies of the sector which was then further filtered down to a series of 35 Investment Dossiers which showcased some of the most promising companies.** With the help of information directly from market participants on funding gaps, the team was able to draw overall conclusions and come up with recommendations for the BEIP. Although not part of the main activity, a number of funding actors considered as particularly important were also consulted within the framework of the project.

A wide desk-based survey of existing financing platforms has made it possible to paint a clear and representative picture of the existing financing platforms in the Blue Economy Sector. 115 relevant existing financing platforms were identified, out of which 72 organisations were classified as being relevant for the Blue Economy (i.e. assessed as high or medium relevance). A significant number of those existing platforms were included in the study through active outreach, interviews, attendance and organisation of workshops and conferences. This interaction allowed the team to build up clear picture of financing gaps and opportunities to be addressed by the BEIP. The existing financing platforms relevant for the Blue Economy were broken down to eight categories: Investment Fund Managers, investment platforms, commercial banks, public banks, accelerators, crowdfunding platforms, EU Financial Institutions, and other. The analysis revealed that the largest share of identified financing platforms (43%) are investment fund managers. Although very heterogeneous in their sectoral focus (and often not dedicated to the Blue Economy), the form of funding provided by fund managers is typically equity investment with amounts varying widely from EUR 0.2 to EUR 60 million. EU financial institutions and associated mechanisms make up the second largest identified groups with 17%. Public banks (13%) also play an active role, particularly in catalysing more investment from the private sector within high growth potential SMEs.

Figure 1. Relevance of the identified existing financing platforms

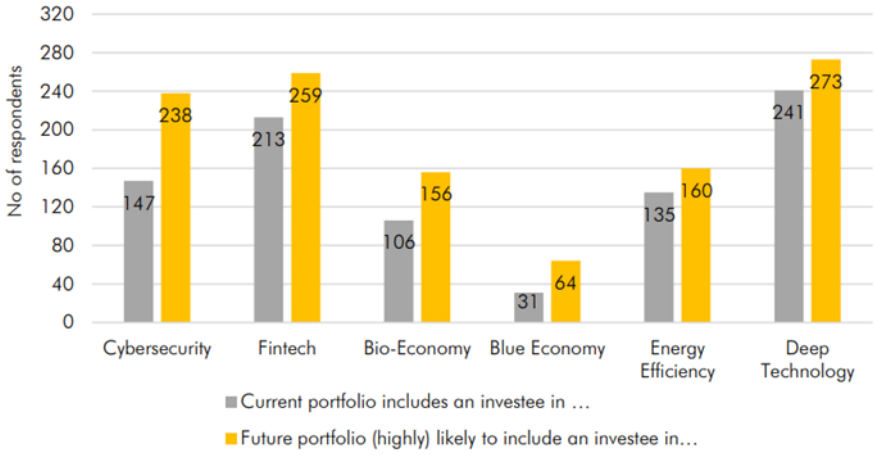


Source: Study team, own considerations

The analysis of existing platforms led to the interesting observation that 65% of highly relevant investors for the Blue Economy were only established within the past five years and 35% were only created within the past three years. This observation underlines the relative immaturity of the financing landscape, but the rapid growth also illustrates the perceived attractiveness of the Blue Economy sectors over the last few years. Recently established funds, however, will not show clear portfolio performance for another 5-8 years. **Hence, the study shows that the finance sector relevant for the Blue Economy is still emerging and lacks the maturity of more established sectors.** This trend is also confirmed by a recent EIF VC Survey 2018[1], showing that a substantial number of financing platforms are not specifically dedicated to the Blue Economy, but cover a broad range of sectors, including components of the Blue Economy. Furthermore, the actual scale of investment into the Blue Economy sectors remains somewhat unclear, due to a shortage of data.

[1] http://www.eif.org/news_centre/publications/eif-wp-48.pdf

Figure 2. Likelihood for portfolio to include an investee in specific industries – current vs. future portfolio



Note:
Cybersecurity: Cybersecurity, space and/or dual use (civil/defence) technologies.
Bio-economy: Bio-economy/Agriculture.
Blue-economy: Blue economy/Sustainable use of maritime resources.
Energy efficiency: Energy efficiency/Renewable energy.

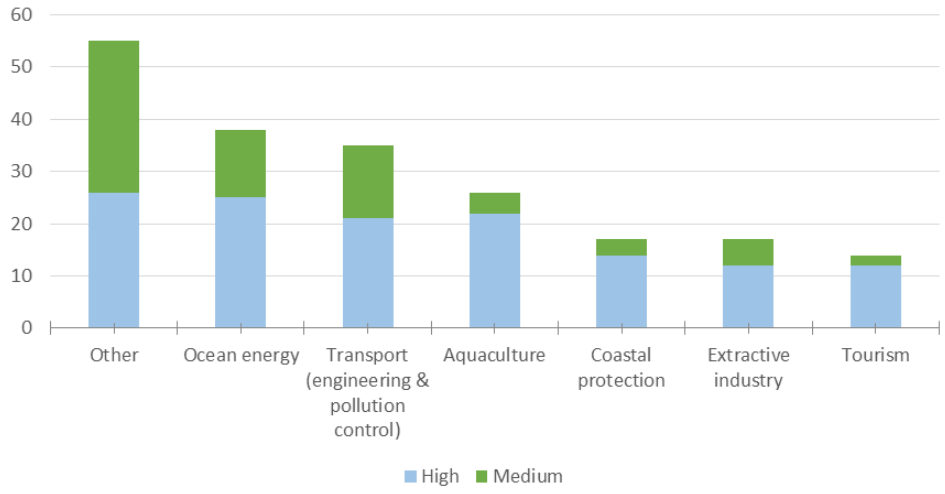
Q. Does your current investment portfolio include an investee in the area of …
Q. How likely do you consider it that your final portfolio will include an investee in the area of …

Source: European Investment Fund, 2018

http://www.eif.org/news_centre/publications/eif-wp-48.pdf

The figure below illustrates the sectoral coverage across the assessed financing platforms:

Figure 3. Sectoral coverage across the assessed financing platforms



Source: Study team, own considerations

Consultations with investees, investors and fund managers revealed substantial differences in scale and types of investment required by the different sectors of the Blue Economy, which flags the need to develop tailored support mechanisms. **Our analysis of the market need confirms the necessity of the implementation of a BEIP that takes into account the varying Blue Economy sectoral needs, in order to ensure that funds reach the innovative, young businesses contributing to sustainable economic sectors.** In order to satisfy the different investment needs of the Blue Economy sub-sectors, the BEIP should ensure that expert knowledge of Blue Economy

technologies and markets is mobilised to make good investment decisions. Some targeted companies were already somewhat or highly successful in attracting external funding. Their success was often the result of a great amount of effort and involved the navigation of a very difficult investment process. The design of a future BEIP should consequently concentrate on the sectors most in need of financial support, namely coastal protection and emerging ocean energy sources (other than wind energy), some parts of the seafood, offshore wind and coastal tourism sectors.

Our study clearly identifies the funding gap and highlights key causes of companies' inability to raise money. We found that while most companies consulted were able to secure early funding often up to EUR 2-3 million through a mixture of family, friends, business partners, small–scale grants and loans, it is difficult for companies to go beyond the EUR 2-3 million mark to achieve the 'next stage' of business growth. Mainstream later stage investors in mature businesses, of which there are many, are often more interested in funding opportunities with above the EUR 15 million threshold. Hence there is a funding gap for amounts between EUR 3 million and EUR 15 million. As a result, companies need to professionalise their approach, undertake the necessary research, or prepare thoroughly before seeking external investment. Businesses generally welcome EU soft funding, but at the same time, they criticise the lack of flexibility and complexity of rules and regulations that come with it. The analysis demonstrates similarities of financing gap issues between the Blue Economy and mainstream sectors. Note that this study did not include consideration of larger infrastructure projects that would require larger amounts of finance. The needs of such projects are generally addressed by national governments or established infrastructure investors and do not suffer from the same inability to attract investor attention as the smaller companies that have been the focus of this study.

Table 1. Availability of funding across the different sectors

		Blue Economy sectors						
		Coastal protection	Extractives	Renewable Energy		Seafood	Tourism	Transport
	Notes			Offshore Wind	Ocean Energy			
Size of annual investment need	1,2,3,4,5	Medium	Low	Very High	Low	N/A	N/A	Medium
Annual investment need (Range €bn)		3.1 to 7.8	1	22.5 to 30.8	0.8			5
Typical investment need (€bn)		4.7	1	8.3	0.8			5
No of market actors	6	Medium	Medium	High	Low	High	Medium	High
Total actors mapped		17	17	38		26	14	35
Highly relevant actors		14	12	25		22	12	21
Medium relevant actors		3	5	13		4	2	14
General availability of funding	7,8	Limited	Uncertain	Good	Poor	Good	Limited	Good
Total Investment need / market actor (€m)		276	59	218	21	Uncertain	Uncertain	143
Scale of supply deficiency vs investment need	9	High	Low	High	High	Uncertain	Uncertain	Medium
Scale of allocation implied through BEIP	10,11	High	Low	Medium	High	Medium	Medium	Low

Notes: (1) Investment needs defined as Low (1bn or less p.a.); Medium (1-5bn p.a.); High (5-10bn p.a.); Very High (10bn+ p.a.)

(2) Estimates of investment need were not found for Seafood or Tourism

(3) Total coastal protection investment costs of €100-250bn annualised through to 2050 (from 2018, i.e. 32 years): note will cover much climate resilience rather than pollution control

(4) Total offshore wind investment needs of €90-123bn to €250bn annualised through to 2020 (from 2017, i.e. 4 years including base year)

(5) Total offshore wind investment needs of €9.4bn annualised through to 2030 (from 2018, i.e. 12 years)

(6) No of market actors defined as Low (<10); Medium (10-20); High (>20); Indicative figures for ocean energy funding providers based on market knowledge of study team

(7) General availability of funding based on sectoral overviews in D14 report; Typical fund sizes from mapping are €25m to €100m, but some e.g. for Transport are very large

(8) Indicative figures for ocean energy funding provision based on market knowledge of study team; Seafood: exception is lack of credit finance for aquaculture in Mediterranean countries

(9) Scale of deficiency in supply of finance vs implied need based on alignment of average investment need per typical fund sizes

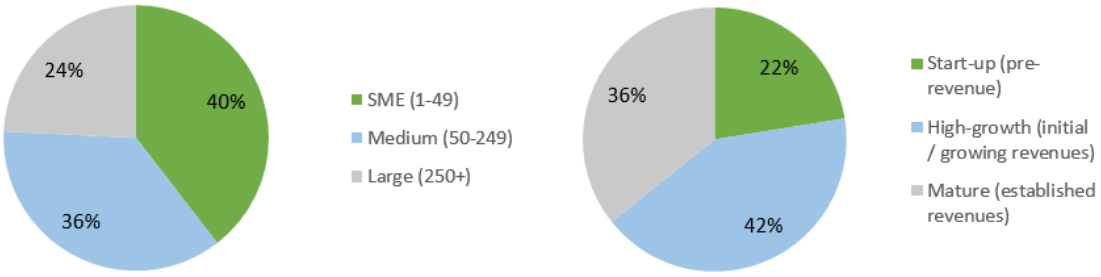
(10) Scale of allocation implied through BEIP indicates the indicative level of additional funding required based on ability of actors to meet investment needs

(11) New innovations in the offshore wind market such as floating wind implies additional risk capital finance

The analysis indicates that it is essential for a BEIP to take into account developments at EU level and contribute to a simplification of the funding landscape. A better combination of public and private funds (including EU financial instruments) could lead to a simplification and reduction of a possible market confusion. InvestEU – although it is not an exclusive Blue Economy tool – already moves in this direction. Stronger visibility, transparency and active engagement with policy-makers dealing with the post 2020 programmes and funding arrangements could further help attract more private funding from businesses and investors by creating more attractive structures.

The figures below illustrate the types of businesses targeted by the financing platforms:

Figure 4. Nature of the targeted businesses



Source: Study team, own considerations

The results of the financing platform mapping identified a large number of financing instruments available to the businesses working in this sector. **A platform focused on the Blue Economy can have a genuinely beneficial role in gathering together funds from public and private sources into a single financing platform.** In order to implement a platform that satisfies the requirements of the Blue Economy sector and ensures facilitation of potential additional investment, the report presents a series of possible structural options for the development of a BEIP in section 5. These proposed generic structures range from direct, to indirect and co-investment structures. A certain number of key objectives need to be taken into account by the financing platform to be put in place. These include a reasonably short implementation time, the possibility to leverage the financial resources of the European Commission, avoidance of duplication and competition with existing players, attractiveness for investors, as well as the right kind of funding for investees.

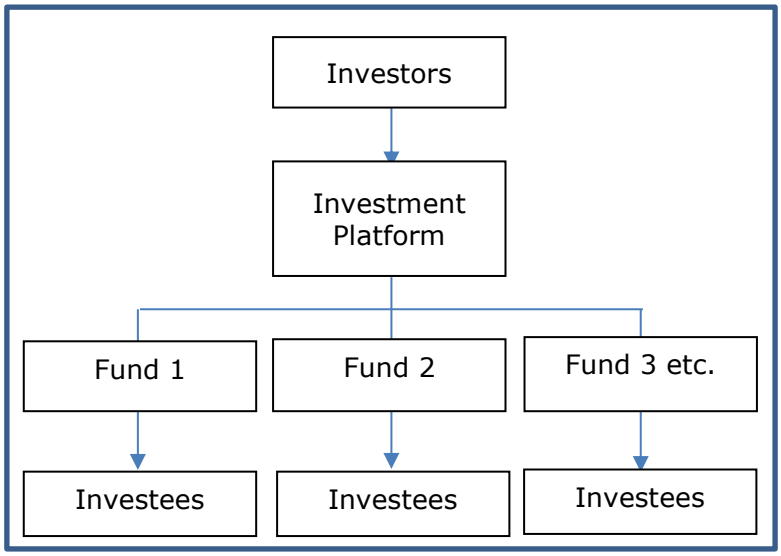
In addition to the core activity of the BEIP to deploy capital to businesses in the Blue Economy sector, efforts should be made to include technical assistance and/or a grant-funded advocacy function in the BEIP. On the one hand, **a technical assistance facility could strengthen those underlying companies to which the BEIP provided capital (indirectly) and maximise efforts of the fund managers supported by the BEIP.** Technical assistance would positively affect the risk of the underlying portfolio by addressing weaknesses in end recipients of funds. It would also strengthen the capabilities of fund managers selected by the BEIP to operate in the Blue Economy. On the other hand, **advocacy could add value to specific sectors that are still in need of stronger regulation.** The fund manager can play an essential role by building connections with relevant stakeholders that are involved in improving relevant areas such as investment or environmental regulations. It is to be noted that such additional features cannot be financed by the fund manager itself but would have to be financed separately.

The analysis of the market needs led to the conclusion that a Blue Economy Umbrella Fund Structure would be the best way to implement a BEIP, as it will allow optimal allocation to sub-sectors that are most in need of investment during the implementation period. An umbrella fund makes it possible to support generalist Blue Economy investment funds, as well as funds that specialised in particular

niches requiring a more in-depth knowledge regarding a sector, or funds focused on particular investment stages or investment instruments. It also enables fund managers best suited to manage the specificities of each sub-sector to be responsible for selecting investments and managing and adding value to their portfolios.

The Umbrella Fund could be set up either as a classical fund of funds structure, or as a virtual fund of funds structure. A Blue Economy Fund of Funds could invest in any funds that are dedicated to the Blue Economy or funds whose strategies simply include one or more sub-sectors of the Blue Economy. A fund of funds can be made up of a single, or of several tranches of different seniorities, which could help ensure that it is able to attract interest from investors with a range of risk appetites. This financing platform could support existing fund managers as well as make specific public calls for fund managers according to geography, sector or other criteria if there are no existing fund managers addressing the area of interest / funding gap.

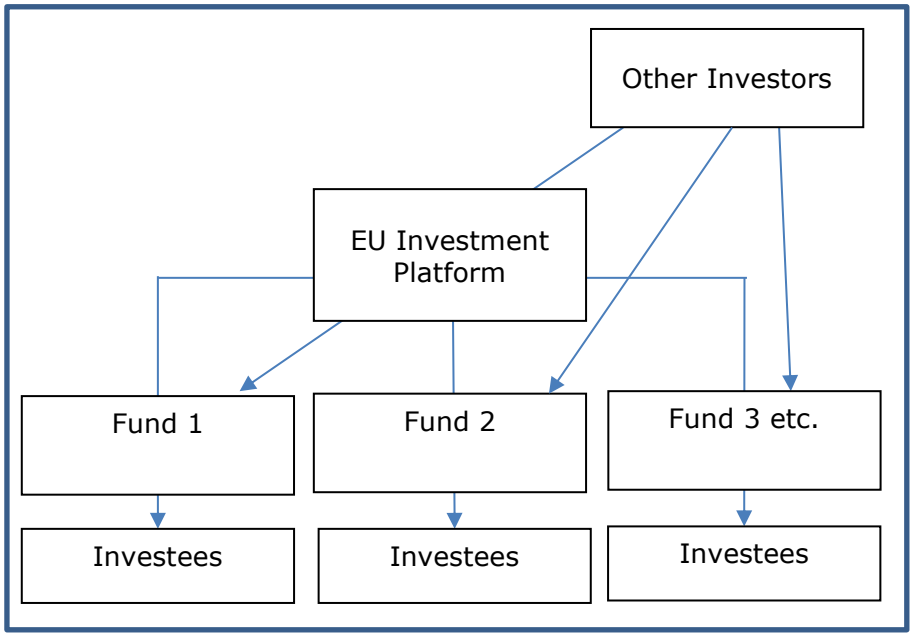
Figure 5. Fund of funds



Source: Study team, own considerations

A virtual Blue Economy Fund of Funds pursues a similar result, with the difference of achieving advantage of the EU financial resources that are committed on fund-by-fund basis instead of through a single fund of funds vehicle. Financial resources from EU institutions, such as DGs, EFSI, EIF etc. can be collected in the 'European Investment Platform'. Those financial resources are then re-invested in specific funds that oblige each recipient fund manager to raise a certain amount of additional funding from other public or private sources. The virtual fund of funds structure comes with attractive cost characteristics and could be considered as a better fit for public bodies, including the EIF Innovfin platform. Specific legal constraints faced by DG MARE, particularly regarding how available funds can be deployed, will have to be taken into account and might require adjustments to the proposed structures. The recommended size of the BEIP is of the order of EUR180m, which is a target that should be revalidated with prospective managers of the BEIP.

Figure 6. Virtual Blue Economy Fund of funds



Source: study team, own considerations

Together with the selected BEIP fund manager, an investment strategy would have to be agreed upon for the Fund of Funds. The Fund of Funds can therefore be considered a powerful and flexible way to ensure that funding reaches both the most promising recipients as well as areas that the Commission judges to be most in need of additional funding. In the event that it proves impractical to implement the Fund of Funds structure, it is recommended to look at whether funding could be provided via a dedicated Blue Economy finance platform structure, or a co-investment vehicle. These alternatives would also be managed by an independent organisation, with the principal differences being the removal of one layer of intermediation and a corresponding reduction in the ability to apply funds in a targeted way.

The size of the investment gap and the investment dossiers provide ample evidence of the vibrant business environment and the number of innovative businesses in the various Blue Economy sectors. **There is a strong case for investing additional capital into the Blue Economy.** The establishment of a BEIP will be an essential step towards adequate access to funds for companies working in this field. This report does not include strategic, legal or structural aspects of a possible fund of funds structure. It is recommended that DG MARE should engage with the EFSI, the EIB/EIF, public and private investors to ascertain the fit of the Innovfin structure. In parallel, a structured approach to identifying a manager for a classical fund of fund structure should be

undertaken. If required, some additional steps to further strengthen the case for investment into the Blue Economy are outlined below.

Table 2. Next steps to further strengthen the Blue Economy sector

Review of listed companies	Review of exits achieved in the blue economy
• Compiling a list of companies operating in the Blue Economy sector that are already quoted on the European stock exchanges • Carrying out a simple analysis of the market values to provide ample evidence of the capacity of the sector to support business activity • Case studies of some of these businesses that have followed a classical innovative business growth trajectory would complement investment dossiers. • A filter would need to applied to ensure that the businesses highlighted also satisfy blue growth objectives • Analysis could be fortified with review of M&A and Private Equity activity across Blue Economy sectors	• A review of successes already achieved by investors in the Blue Economy would be a powerful complement to the Investment Dossiers. • This would be done best by addressing the fund manager community and seeking out case studies of companies in which they have invested, and which have subsequently been successfully sold on. • The fund managers would normally be pleased to support this kind of work because, in the case of successful exits, it would provide them with positive coverage.

1 Introduction

This document makes a recommendation for the structure of a Blue Economy Investment Platform (BEIP) to be implemented to ensure adequate access to funds for companies in the Blue Economy sector. In particular, it focuses on the financing needs of companies that produce sustainable ecosystems and inclusive growth and employment. These recommendations are intended to feed directly into an implementation phase in which the funds of the European Commission are mobilised as soon as possible in a way that leverages additional investment from the public and private sectors.

The proposed structure is intended to be additional to existing initiatives, and not to displace them. As a result, the approach that has been taken is focused on identifying gaps in the existing supply of funding from both the private and public sectors and seeks to directly address these gaps.

The work has focused on innovative, growth companies and large-scale infrastructure has not been considered here as infrastructure typically requires many multiples of the amounts needed by growth companies. The work has equally not included very early stage initiatives that may still be at the conceptual stage. It has sought to emphasise the needs of companies that are at least on the cusp of commercial exploitation of their product or service. Companies at this stage of their development are extremely well positioned to have a strong impact through their growth potential.

The sustainability dimension has been an integral part of the platform for this project, which is motivated by the need to ensure further capital flows into sustainable businesses operating in the Blue Economy sector. The challenge of mobilising capital for such businesses is a characteristic that the Blue Economy sector shares with most other emerging sectors and geographies. It is clear, therefore, that mobilising sufficient capital will require the support of both private and public investors in the shape of impact investors and public sector actors such as the EIB Group. These investors are often inherently interested in addressing market failures and applying capital to sectors with a strong impact potential. By necessity, the BEIP will therefore be designed to appeal to such investors. The impact objectives for the BEIP will be clearly defined and measured, and will make a direct contribution to the achievement of the 2030 Sustainable Development Goals.

This report makes a proposal for the format of the investment platform that would best respond to the needs of the sector. The report has been compiled as a key output of the work that has been carried out by the project team between January and August 2018. The work undertaken has been multi-faceted and has allowed the team to draw on multiple sources of valuable input information.

2 Approach

The following methodology has been applied to this task.

Table 3. Methodology

Sub-task	Activity	Method	Tool
Sub-task 8a: Completion of list of existing platforms	Synthesis of existing platforms.	Based on task 3 – review and extension	None
Sub-task 8b: Consideration of different options for establishing a dedicated blue growth platform, recommendations for an investment platform	Listing of different possible options	Brainstorming	None
	Evaluation of Investors' needs	Review of output of task 3 and other market knowledge	Analysis and synthesis. Further interactions as needed.
	Evaluation of investees' needs	Review of tasks 5 – 7 and other market knowledge	Analysis and synthesis. Further interactions as needed.
	Definition of most suitable platform(s)	Internal analysis and use of expert knowledge	Synthesis and final validation, as needed

The key inputs to this work are the output of Task 3 (the Finance Report), which has been further refined and developed during this phase. Recommendations 1 to 7 of this report have been reviewed and incorporated into this document as appropriate. The Lessons Learned[2] that have been obtained in dialogue with the companies that formed part of this survey, have also been analysed and used as an input to this work. Finally, the experience of the team that has been working on the assignment has been drawn on and used to ensure the suitability and relevance of the recommendations made here.

This document is structured to provide a clear understanding of the financing platforms that exist and to compare these to the needs of the underlying investees. This has allowed the financing gaps to be clearly identified. The document then presents a listing of the financing platform structures that could be applied in order to address the identified gaps. An evaluation of the strengths and weaknesses of each structure in the context of the Blue Economy is made prior to a recommendation of the most relevant structure.

It should be understood that within the structures outlined here, there remain a number of variables that will need to be considered during the detailed design phase of the investment platform structure. It is assumed that a professional fund manager will be identified to implement the BEIP. The Terms of Reference (ToR) for the recruitment of the fund manager should define a certain number of parameters within which they will be expected to work (including expected Key Performance Indicators). The ToR should also provide sufficient flexibility to allow potential entrusted entities to propose further enhancements in their applications to manage the BEIP which will strengthen the final fund structure.

[2] See report: Study to support investment for the sustainable development of the Blue Economy – Lessons Learned

Pipeline Development

In a preceding phase, the project team was tasked with developing a Blue Economy pipeline of companies and projects. More than 400 companies were identified. The basis was a database coming from DG MARE and EASME and further research was done by the project team to complete existing information and also find new companies and projects. These were derived from three sources: a database developed and compiled by DG MARE, applicants and attendees of the Brussels Blue Invest event, and efforts made by the project team itself to identify new companies and projects, including through the events that the team organised.

Each company in the overall pipeline was then subject to a systematic evaluation to determine i) its fit with the agreed parameters for the inclusion in the evaluation long list ('eligibility')[3] and ii) its quality as an investment target[4]. This allowed the most relevant and highest quality companies and projects to be identified. A longlist of 70 eligible companies was elaborated and the strongest 35 of these were ultimately selected to be profiled in detail via the compilation of detailed Investment Dossiers.

The eligibility criteria that were applied strongly emphasised the societal benefit and sustainability characteristics of each project and company. The high number of companies that passed the eligibility is a strong illustration of the importance attached to the sustainable (rather than exploitative) use of resources and the prevalence of circular (rather than linear) business models. Many of the companies and projects assessed will have scored strongly on multiple sustainability criteria, for example a company developing software for the seafood supply chain not only makes the route to market more efficient and reduces costs, but may also help local fishermen become more profitable and therefore to fish more sustainably.

The process that was followed to develop the pipeline was structured, but should be considered as constrained by the duration and context of the project. A longer-term systematic effort to identify more Blue Economy companies and projects would undoubtedly succeed in identifying a much larger number of projects and companies. In addition, if real funding were on offer, more companies would be motivated to engage in the effort. Further evidence of the potential of the Blue Economy sector could also be generated by i) a systematic evaluation of publicly listed Blue Economy companies, ii) a more detailed review of the investees of dedicated Blue Economy funds and generalist funds, iii) a review of the portfolios of banks that lend to Blue Economy sector companies and projects and iv) deeper engagement with larger corporates developing Blue Economy projects. Such an effort would provide further evidence of both the extent of demand and the returns available to investors in the sector.

Methodology - variations

The team has executed the project as originally envisaged in the Terms of Reference and has, in addition, with the support of the Metis consortium, made a special effort to ensure a strong outreach to SMEs and investors. Particular emphasis has been put on this point in order to ensure that the needs and challenges of the market were adequately captured and truly understood.

Additional Inputs to the Project

1. **Organisation of Matchmaking Events in Paris, Cardiff[5] and The Hague[6]** – in the original terms of reference the team accepted the suggestion to set up events that brought together investors and Blue Economy companies. It arranged three

[3] The team, in conjunction with DG MARE, agreed a set of standardised eligibility criteria to perform this initial triage.

[4] Similarly, an agreed set of weighted quality criteria were applied to each investment, resulting in a final score and ranking of the company or project propositions which had passed the eligibility filter. These were then further moderated by peer review.

[5] In co-operation with the Volvo Ocean Race 2018

[6] In co-operation with the Volvo Ocean Race 2018

substantial matchmaking events which complemented the Commission's own Blueinvest event, which was held in Brussels on May 17. In arranging and managing these events, the team surpassed the original terms of reference. This was felt to be merited because of the high value attached to direct feedback from attendee companies and investors as well as the positive impact on developing the Blueinvest brand, which can now be leveraged by the Commission beyond the scope and timescales of this project.

2. **Attendance of Blueinvest Brussels** – the full team attended and participated in the Blueinvest event. This was a great opportunity to meet directly with investors and companies, many of which were subsequently featured in the 35 selected to be presented as investment dossiers. The event also provided a great opportunity to directly witness the usefulness of presentations and B2B matchmaking as a means of enhancing linkages between investors and companies. The event directly inspired the way in which the team approached the organisation of the Cardiff and The Hague events in association with the Volvo Ocean Race.
3. **Contact with Fund Managers** – the team has added in an additional element to the project by reaching out to fund managers that are active in the Blue Economy. The project was conceived mainly as an outreach effort to SMEs but the team considered it essential also to open dialogues with fund managers and to produce a more detailed summary of the existing players in the market.
4. **Knowledge of Investor Community** – the project team already has a deep contact base and relationships with a number of relevant fund managers. It implicitly understands their perspective and their needs and this knowledge has been utilised to assess and recommend the appropriate investment platform structure. A full day of meetings was also held with EIB and EIF, in order to better understand their perspective on the Blue Economy as an investment theme.
5. **Attendance of a range of Industry Events** – the team travelled to attend a number of industry events during the course of the project. Attendance of these events was also over and above the terms of reference and the time and travel expense has been absorbed into the consulting budget for the project. The valuable exposure to industry trends and players was more than worthwhile the time and expense of attending these events. In addition, a number of very interesting companies were encountered at these events, including several companies that featured in the final 35 Investment Dossiers.
6. **General Promotional Activities** – The Team has also been active in promoting the Blue Economy theme and the work of DG MARE and the Commission through social media engagement and interviews.

In the drafting of the investment platform Recommendation, the work that was done under each of the above headings has been captured in the relevant annexes of the document, so that it is possible to go further into each source of information as desired.

Overall, the variety of contacts and inputs, and the great range of discussions that have been held during the project give us a high degree of confidence in the recommendation that is made here.

3 Existing Financing Platforms

3.1 Introduction

A comprehensive review of existing financing platforms has been carried out under task 8a. Financing platforms here are taken to include any kind of organisation that provides financial products to the market. This has drawn on the work that was carried out under deliverable D4, the Finance Report, and has drilled down in more detail into a wider variety of existing financing platforms, understood to have some level of interest in providing funding to the Blue Economy sector[7], to produce a more complete picture of the current financing environment.

A wide desk-based survey[8] of existing financing platforms was carried out and 115 relevant entities identified. A full listing of these platforms is included in Annex 2. These were then classified in terms of relevance to the Blue Economy, allowing the total number to be filtered down to 31 which were considered to be of significant relevance (high or medium). Although there are certainly other relevant players in existence and the survey was not exhaustive, this is considered to paint a clear and representative picture of the existing financing platforms in the Blue Economy sector. It represents a solid basis from which to consider financing gaps as well as opportunities to be addressed by the BEIP that is the subject of this document. The document in Annex 2 includes a detailed evaluation of type of finance provided, type of businesses supported, amounts typically invested and sectoral and geographical coverage.

3.2 Types of Existing Financing Platforms

The existing financing platforms with either high or medium relevance to the Blue Economy sector can be broken down into several categories:

- Investment Fund Managers – usually provide specific financial products via a broad strategy but can also be focused on stage, sector or geography (number in sample= 31)
- Investment Platforms – more diversified structures that provide finance and other services to their clients (4)
- Commercial Banks – usually providing loans across all sectors (6)
- Public Banks – usually provide loans across sectors requiring public finance, sometimes on concessional terms (9)
- Accelerators – groups working with very early stage companies and providing business development services to boost the growth of early stage companies (7)
- Crowdfunding Platforms – structures that draw together small financial contributions from retail investors (2)
- EU Financial Institutions or Associated Mechanisms – supply grants or other forms of concessional finance to Blue Economy players (12)
- Other

[7] Some institutions or funds that were mapped proved to have little or no relevance to the Blue Economy once more detailed assessment had been conducted.

[8] There are of course limitations to any such exercise including the scope of the assignment: mapping of the investment landscape was based on deliverable D4 (Finance Report) and limited additional research, primarily consisting of available information gathered from fund manager websites. It can therefore not be considered as a comprehensive mapping, but rather a targeted one, aiming to frame the establishment of an investment platform dedicated to the Blue Economy into a market context. Because of a shortage of data, the assessment of the relevance of each actor to the Blue Economy is not based on objective external criteria (e.g. share of the investment dedicated to the Blue Economy or absolute investment figures), but on a rapid assessment based on the scope of the study.

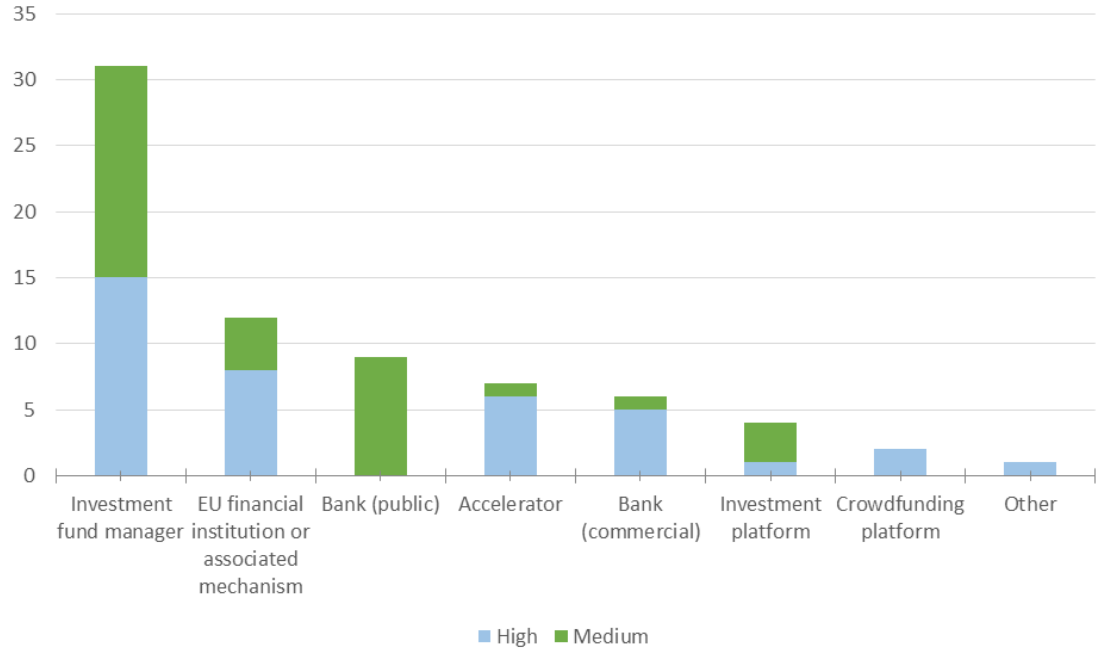
3.3 Summary of Existing Financing Platforms[9]

A summary of the landscape of existing financing platforms is set out below:

3.3.1 Types of Financing Platform

72 organisations were identified as being relevant for the Blue Economy (i.e. assessed as high or medium relevance).

Figure 7. Relevance of the identified organisations



Source: Project team, own considerations

Key points of analysis

- **Investment fund managers** represent the largest share (43%) of the organisations mapped, reflecting the study focus on high growth potential SMEs. The sectoral focus of this group of fund managers is very heterogeneous, with some organisations focusing on traditional maritime sectors such as shipping (see section on sector coverage below), while other have a particular focus on the sustainable Blue Economy. The form of funding provided by fund managers is typically equity investment with ticket size varying from EUR 0.2 to EUR 60 million, although some offer more complex financial products.
- Among the relevant investment fund managers there are a number of **'corporate advisory/management firms'**. These focus primarily on the shipping sector, providing clients with a mixture of complementary services including corporate advisory, fleet investment, fleet management and/or direct investment support. These players have in-depth industry knowledge and focus on the more traditional sector of the Blue Economy, i.e. maritime transport, infrastructure, extractive industries, etc. A series of these corporate advisory/management firms were established in the last years "in response to opportunities arising from the diminished supply of credit to owners and operators in the global maritime sector"[10], including Maritime Asset Partners (established in 2017), IPSA Maritime (2012), Maritime Equity Partners (2009).

[9] Commercial bank lending has generally not been included in this analysis due to the vast number of commercial banking activities in these sectors and sheer scale of an exercise to approach every commercial bank in Europe with a view re allocating sectoral loans into a new Blue Economy thematic

[10] http://maritimeap.com/

- The next largest identified groups were **EU financial institutions** and associated mechanisms (17%) (e.g. investment vehicles set up under the European Horizon 2020 InnovFin initiative as well as European Structural and Investment Funds (ESIF)) and public banks (13%) (e.g. National Promotional Banks (NPBs), such as bpi France), whose role is to catalyse more investment from the private sector within high growth potential SMEs. These public mechanisms often have a wider focus than just the Blue Economy.[11]
- The mapped **accelerator programmes** (10%) all have a specific focus on the Blue Economy and seek to generate a positive impact on companies participating in their programmes. As in other sectors, these accelerators typically combine small-scale equity investments (between EUR 10,000 and EUR 150,000) with an extended support programme in order to advance them to the next stage in their innovation journey and/or investment funding round.
- A number of highly relevant **commercial banks** were also identified during the mapping exercise, reflecting their appetite for different Blue Economy sectors. Although the mapping can certainly not be considered as comprehensive, it shows, for example, that the Netherlands has particularly active commercial banks focused on aspects of the Blue Economy (e.g. ASN Bank, Triodos Bank, Rabobank and ABN Amro).
- Only four relevant **investment platforms** were identified by the mapping (i.e. CDP Climate Change Risk Sharing Investment Platform[12]; Elite Basket Bond 1[13]; Green Metropole Fund[14] and ITATECH[15]). None of these investment platforms have an exclusive focus on the Blue Economy but they target relevant sectors (e.g. circular economy) and/or types of businesses (e.g. SMEs with strong innovation potential). It is interesting to note that three of these four platforms are located in Italy and one in the Netherlands.
- The **relative immaturity of the financing landscape** is demonstrated by the interesting observation that 65% of the investors identified as highly relevant for the Blue Economy were established in the last five years and 35% in the last three years. This shows how dynamic and attractive this landscape has become over the last few years, with a clear build up in momentum of funding vehicles coming on stream although the number of dedicated investment fund managers remain overall somewhat limited. This trend is confirmed by the recent EIF VC Survey 2018[16] which shows that although only 31 of the surveyed VC funds have a specific investee in the Blue Economy, 64 are likely or highly likely to develop such investees in their future portfolios. This represents a 100% increase or the highest rise among the sectors covered by the EIF survey – see section below for more detail. This dynamism should however not hide the fact that the absolute number

[11] Many blue economy firms and start-ups, in particular those active in high-potential but risky areas such as the blue bio-economy, have received financial support for their research, including from the EU's Horizon 2020 programme. Nevertheless, they often find it difficult to obtain sufficient investment funding to scale up their business operations. The Investment Plan for Europe, launched in 2014, focuses on removing obstacles to investment, providing visibility and technical assistance to investment projects and making smarter use of new and existing financial resources. The European Fund for Strategic Investments (EFSI) is helping to finance infrastructure and innovation projects as well as small and medium-sized enterprises (SMEs) and mid-cap companies. Mobilisation of private capital is a key feature of EFSI (DG MARE 2018). It is important to note however that EFSI does represent 'additional' funding to the EIB. EFSI is in fact not a fund as such but rather a structural guarantee to the EIB balance sheet allowing the EIB to take the portion of risk on projects that it would not normally finance, but has done so because of the EFSI guarantee. The EFSI guarantee is a capped portfolio default guarantee to the EIB balance sheet. Accordingly from a reporting point of view, EFSI operations are captured under EIB reporting. That being said not all Blue Economy activity is recorded as thus designation does not yet exist in the EIB reporting framework, and as such financings often will be reported under sectors such as renewable energy, shipping, fisheries etc.

[12] http://www.eib.org/projects/pipelines/pipeline/20160283

[13] http://www.eib.org/projects/pipelines/pipeline/20170079

[14] http://www.eib.org/projects/pipelines/pipeline/20170094

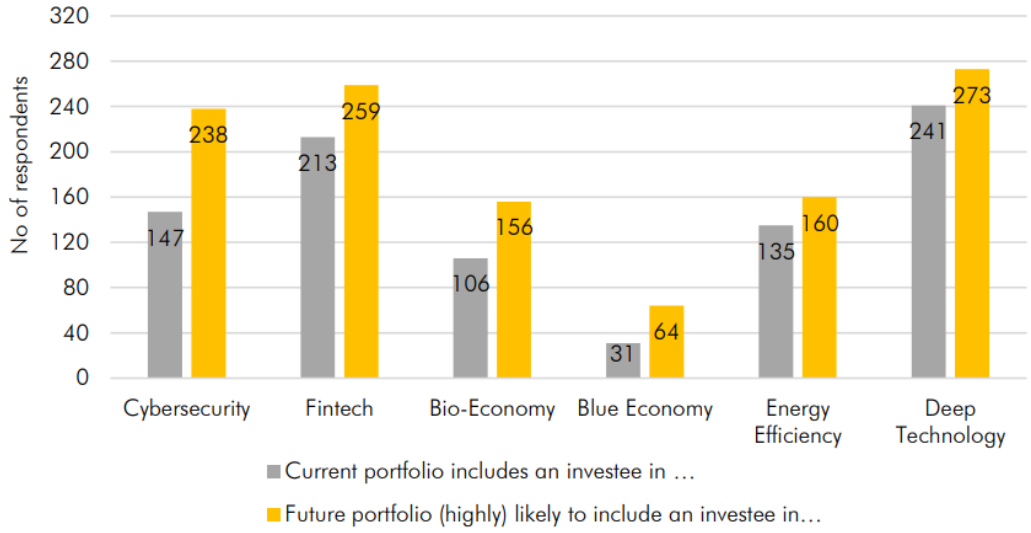
[15] http://www.eif.org/what_we_do/equity/news/2016/eif-npi-itatech.htm

[16] http://www.eif.org/news_centre/publications/eif-wp-48.pdf

of VC with dedicated Blue Economy investee remains very small compared to other sectors.

Although there are numerous good examples of successful large scale Blue Economy companies, the number that have transitioned through the entire investment cycle of a fund is limited, since many firms will still be in the early stages of investment (noting that investment funds will have a five investment phase and ten year managing out phase). Funds established in the past 2-5 years will have until 2023 to 2026 to fully understand the success (or otherwise) of their investment portfolio. Furthermore, it is currently not clear, due to a shortage of data, what is the actual scale of investment into the Blue Economy sectors.

Figure 8. Likelihood for portfolio to include an investee in specific industries – current vs. future portfolio



Note:
Cybersecurity: Cybersecurity, space and/or dual use (civil/defence) technologies.
Bio-economy: Bio-economy/Agriculture.
Blue-economy: Blue economy/Sustainable use of maritime resources.
Energy efficiency: Energy efficiency/Renewable energy.

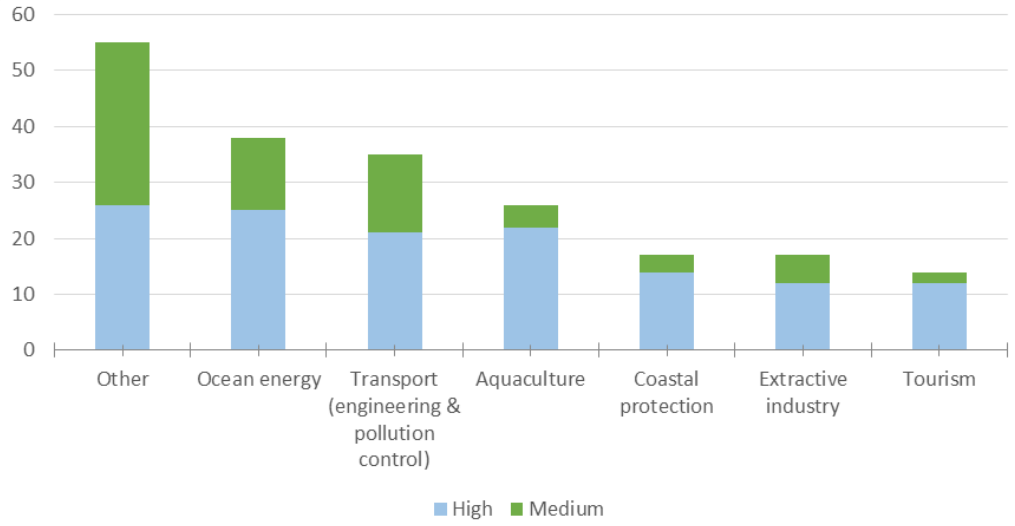
Q. Does your current investment portfolio include an investee in the area of …
Q. How likely do you consider it that your final portfolio will include an investee in the area of …

Source: http://www.eif.org/news_centre/publications/eif-wp-48.pdf

3.3.2 Sectoral coverage

The graph below illustrates the sectoral coverage across the financing platforms that have been assessed:

Figure 9. Sectoral coverage



Source: project team, own considerations

Key points of analysis

- The "Other" sector category is the most represented among the mapped organisations and reflects the fact that many investors do not have a specific focus on the Blue Economy. Instead, they cover a broad range of sectors including Blue Economy components (such as a focus on clean-tech and hence covering ocean energy investment opportunities).
- In fact, among the 72 organisations identified as relevant to the Blue Economy, only 17 have an exclusive focus on the Blue Economy – this includes some actors focusing exclusively on "traditional" maritime sectors.
- Based on the mapping and additional research, the table below sets out a number of conclusions that can be drawn regarding the availability of financing at a sectoral level within the Blue Economy:

Table 4. Availability of financing at a sectoral level within the Blue Economy

Sectors	Number of FI actors	Available financing
Aquaculture[17]	• Medium relevance: 4 • High relevance: 22 • Total: 26	• Relatively good availability of financing in certain geographies coming mainly from investment fund managers and a series of specialised accelerators – all established in the last four years. • The size of the investment funds varies between EUR 30 and EUR 100 million with average investment size of EUR 1 to EUR 10 million.
Extractive industries[18]	• Medium relevance: 5 • High relevance: 12 • Total: 17	• Limited number of actors identified. Difficult to draw conclusions.
Transport[19]	• Medium relevance: 14 • High relevance: 21 • Total: 35	• Reasonable investment capacities from a large number of actors including investment fund managers and EU financial institutions or associated mechanisms. This includes a series of publicly supported programmes with considerable financial

[17] Seafood Aquaculture, Aquaponics, Fishing, Processing, Distribution, Equipment/ Marine Biotech (VC area-can be here as it is harvested/renewable)
[18] Extractives Decommissioning Platforms, Servicing, and Equipment (note: sustainable criteria would exclude new exploration/drilling). Seabed Mining (also unsustainable)
[19] Transport Ship-Service, Ship-Building, Marine Tech, Marine Equip, Ports-Infra, Ports-Service

Sectors	Number of FI actors	Available financing
		capacities, e.g. Green Shipping Loan Programme (EUR 500 million) and Guarantee Programme (EUR 750 million). • In addition, a recent ESPO report estimated the annual investment capacity of the port managing bodies in the EU at around EUR 2.2 billion for the EU-27 based on current operations. [20]
Blue tourism[21]	• Medium relevance: 2 • High relevance: 12 • Total: 14	• Limited availability of financing from a small number of actors, i.e. mainly EU financial institutions or associated mechanisms (5), accelerators (2) and crowdfunding platforms (2). Commercial banks also provide financing to this sector.
Coastal protection[22]	• Medium relevance: 3 • High relevance: 14 • Total: 16	• Limited availability of financing from a small number of actors including investment fund managers (6 identified with average size of EUR 37 million and offering tickets of EUR 1 to 10 million) and EU financial institutions or associated mechanisms (5).
Blue biotechnology	• Medium relevance: NA • High relevance: NA	• Unclear level of financing available due to lack of data. • Ongoing efforts to build headline funds relevant to blue living resources are being pursued via the international Blue Forward fund and by the Bio Based Industries initiative (a public-private partnership fund of EUR 3.7 billion, 25 % H2020 funded).
Blue energy[23]		
Offshore wind	• Medium relevance:13 • High relevance: 25 • Total: 38	• Good availability of financing for "traditional" offshore wind plants, which is reaching maturity but still limited financing for emerging technologies such as floating wind turbines.
Ocean energy		• In the EU and between 2007 and 2015 alone, 2.6 billion euros have been invested in the ocean energy sector, 75% coming from private corporate investments.[24] • National investments in R&D have been growing slowly since 2011, stabilising at EUR 58 million per year in 2014 and 2015, accounting for 16 % of total investment in 2014 and 18 % in 2015. At EU level, a total of EUR 224 million was provided as support to the ocean energy sector during the period 2007-2015 (mainly through the ERDF, H2020 and previous research programme, NER 300 and the InnovFin EDP facility). With co-funding from beneficiaries, this led to total investments of EUR 336 million. The total commitment of the EU rises to EUR 550 million when counting the committed instruments for the period 2016-2019.[25]

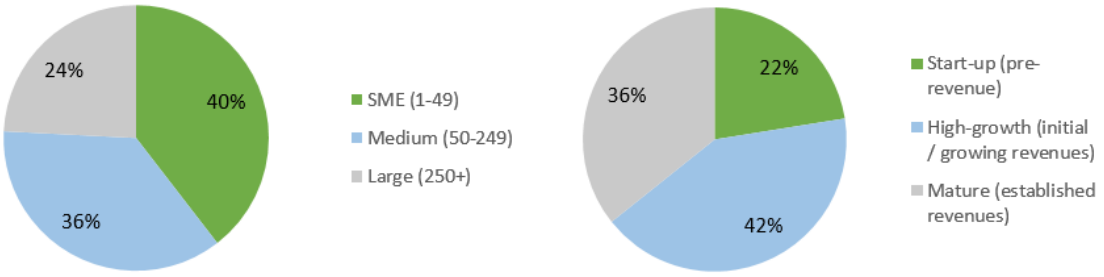
[20] https://www.espo.be/media/Port%20Investment%20Study%202018_FINAL_1.pdf
[21] Tourism-Coastal Tours, Hotels, Restaurants, Marinas (pleasure vs ports), Marine Parks (pay for access business operators),
[22] Coastal Protection (fisheries finance will be under seafood) Waste Mgt Waste collection, Recycling, Pollution-clean-up, Pollution-prevention
[23] Renewable Energy Offshore Wind (Floating offshore wind, Offshore Wind servicing and construction, Offshore Wind technical analysis), Tidal, Wave, Geothermal, Floating Solar, Shore-side power
[24] https://publications.europa.eu/en/publication-detail/-/publication/e38ea9ce-74ff-11e8-9483-01aa75ed71a1
[25] https://www.msp-platform.eu/sites/default/files/2018-annual-economic-report-on-blue-economy_en.pdf

It should be noted that the project has analysed the companies and projects on which it has focused using standard industry sector categorizations but that other definitions of investment themes are also in use, particularly in the investor community. Good examples include the circular economy, impact investors, enabling technologies, digital transformation and climate change (mitigation and adaptation). These definitions have been developed either to allow investors to express themes that are of interest to them (sustainability, impact etc) or to break free of the sectoral definitions that may seem to accentuate differences rather than similarities. In fact, the Blue Economy can be seen as an ecosystem with value chain and cluster dynamics around the spatial organisation of maritime activities. It is more than an agglomeration of sectors or technologies, with significant common features and synergies between the different (sub)sectors.

3.3.3 Nature of the targeted businesses (size and level of maturity)

The figures below illustrate the types of businesses which the financing platforms target:

Figure 10. Nature of the targeted businesses



Source: Project team, own considerations

Key points of analysis

- The mapping reveals an apparent continuum of financing across different business sizes and levels of business maturity, although start-ups at pre-revenue stage seem to be targeted by a smaller number of actors.
- If one looks at the sectors benefiting from less coverage (i.e. coastal protection and tourism), the picture is similar as these two sectors are also covered by actors covering multiple business sizes and business maturity stage.

A review of the documentation that was referenced in the original ToRs for this project is included in Annex 6. This includes detailed commentary on all of the relevant public sector finance facilities which provide an important backdrop to the recommendation on the BEIP.

4 Evaluation of Market Need

4.1 Background

The overall market need was estimated, using new research to substantially build upon the initial work done under 'D3 – Report on Market'. Additional work by the project team included consultations with investees, investors and fund managers. These perspectives are presented below. Each of the perspectives gathered has been considered as a means of identifying the best positioning for the BEIP. A detailed 'Lessons Learned' exercise was also carried out in interviewing investee companies, providing some very valuable feedback on the experiences of Blue Economy companies seeking funding in the market. The team conducted an extensive outreach programme through the events that it organised in Paris, The Hague and Cardiff (the latter 2 in association with the Volvo Ocean Race) as further outlined in Annex 3. A range of industry events were also attended as resumed in Annex 4.

4.2 Scale of the Investment Needs across the Blue Economy Sectors

The review of relevant sources identified the following estimates of the investment needs for the following Blue Economy sectors in Europe.

Table 5. Investment needed by sector

Sectors	Scale of investment needed	Type of investment needed	Private Sector Investors
Aquaculture[26]	No recent aggregated data available.	Lack of credit financing in the Mediterranean countries.[27]	Investments in aquaculture stem from the industrials active in the sector itself, from private investment funds or investors and from public sources. The fast growth of the sector attracts numerous private investors. Some examples of funds that specifically invest in aquaculture include: Oceanis Partners, AquaSpark Good Ventures, Watershed Capital Group, Fish 2.0;[28]
Extractive industries[29]	Decommissioning of offshore oil and gas exploitation platforms in the North Sea will require investment of **EUR 30 billion** over the next 30 years.[30]		Investments are currently driven by large companies or groups of investors. Examples are: • Large mining firms acting as investors (e.g. Nautilus); • Large generalist investors (e.g. Levi Levine and Namibia Marine Phosphate (NMP) for phosphorites); • Dredging companies and offshore construction companies. In most of the projects in international waters, the main contractors are governments (e.g. South Korea, Russia, and India) or companies sponsored and funded directly or indirectly by governments through public funding.
Transport[31]	European seaports (EU-27) currently face substantial investment needs of around **EUR 48 billion** (EUR 5 billion annually) for the period 2018 – 2027.[32]	Lack of investment capacity for technological development in the shipping industry.	In the case of shipping investment is usually privately financed by the shipping companies. For port terminals, PPP models are common.
Blue tourism[33]	No aggregated data available.	Tourism SMEs have limited or no access to credit for investments and innovation.	To attract and channel private investment in the sense of 'desired' developments remains challenging,

[26] Seafood Aquaculture, Aquaponics, Fishing, Processing, Distribution, Equipment/ Marine Biotech (VC area- can be here as it is harvested/renewable)
[27] https://stecf.jrc.ec.europa.eu/documents/43805/839433/2014-11_STECF+14-18+-+EU+Aquaculture+sector_JRCxxx.pdf
[28] Manta Consulting Inc.2013
[29] Extractives Decommissioning BEIPs, Servicing, and Equipment (note: sustainable criteria would exclude new exploration/drilling). Seabed Mining (also unsustainable)
[30] http://maribe.eu/download/2588/
[31] Transport Ship-Service, Ship-Building, Marine Tech, Marine Equip, Ports-Infra, Ports-Service
[32] https://www.espo.be/media/Port%20Investment%20Study%202018_FINAL_1.pdf
[33] Tourism-Coastal Tours, Hotels, Restaurants, Marinas (pleasure vs ports), Marine Parks (pay for access business operators),

Sectors	Scale of investment needed	Type of investment needed	Private Sector Investors
			Municipalities: often lack know-how to attract private investment in order to renew outdated marine infrastructures along coastlines
Coastal protection[34]	The environmental threats posed by climate change (e.g. sea level rises) call for big investments in coastal protection against erosion — the minimum cost of not adapting to climate change, for example, is estimated at **EUR 100-250 billion for the EU as a whole**.[35]		In terms of bioplastics private investments is currently based on large enterprises entering into this market (see above). For ocean cleaning some projects are triggered with crowd funding, but at a later stage private investors enter.
Blue biotechnology	No recent aggregated data available.	• Enhance industry interaction and investment, including the creation of dedicated public-private partnerships (PPPs) where marine biotechnology is recognized as an enabler of enterprise activity.[36] • Money for investment is available but scattered across various sources, so attempts to centralise funds are being made.[37]	Investor's perception on blue biotechnology as a good high-return investment is increasing.[38] The most important private investments are driven by pharma companies or cosmetic companies. In both cases investments are based on market growth expectations. SMEs mainly financed by their founders, with seed capital and some institutional investment (e.g. Aquapharm, BioAlvo, Nereus Aquapharm Sealife Pharma).[39] Nevertheless, private investment in Europe is still driven by entrepreneurs, business angels, crowd funding and venture capital.[40]
Blue energy[41]			

[34] Coastal Protection (fisheries finance will be under seafood),) Waste Management and Mgtcollection, Recycling, Pollution-clean-up, Pollution-prevention
[35] https://www.msp-platform.eu/sites/default/files/2018-annual-economic-report-on-blue-economy_en.pdf
[36] http://www.marineboard.eu/file/675/download?token=lxOXFhrM
[37] https://www.msp-platform.eu/sites/default/files/2018-annual-economic-report-on-blue-economy_en.pdf
[38] European Commission, MARE/2014/45, EASME, Final Report 2017
[39] PharmeSea 2014
[40] Eumofa 2018
[41] Renewable Energy Offshore Wind (Floating offshore wind, Offshore Wind servicing and construction, Offshore Wind technical analysis), Tidal, Wave, Geothermal, Floating Solar, Shore-side power

Sectors	Scale of investment needed	Type of investment needed	Private Sector Investors
Offshore wind	European offshore wind energy industry alone needs to attract **EUR 90 billion** to **EUR 123 billion** by 2020.[42]	• Although the sector is reaching maturity in Europe and the number of deals being signed is increasing, important investment are still needed to scale up emerging technologies (e.g. floating turbines) and the enabling infrastructures.[43]	Offshore wind is financed through established consortia of equity and debt investments. It is a relatively mature industry with well understood risks and returns.
Ocean energy	If we exclude tidal range, in an optimistic scenario, the investments until 2030 amount to **EUR 9.4 billion** in Europe, EUR 7 billion in a medium scenario and EUR 2.8 billion in a pessimistic scenario.[44]	• What is lacking is a critical mass of finance to further develop the sector and scale it up to a fully commercial dimension. Ocean energy projects are usually too capital-intensive for venture capitalists and too risky for private equity. By the same token, borrowing from banks is often too costly. As a result, private investment in the ocean energy sector often involves own financing.[45]	Most of the financial resources injected in the sector come from private investments. This becomes more evident as TRLs increase. European projects were mainly funded by public grants.[46] The grant component shrinks in favour of a higher proportion of debt, reflecting the fact that mature projects borrow capital from banks and lending institutions.[47]

Key points of analysis

The scale and type of investment needed varies considerably across the Blue Economy sectors of interest, indicating the need to develop tailored support mechanisms rather than an all-encompassing solution.

[42] https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/swd-2017-128_en.pdf
[43] https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/swd-2017-128_en.pdf
[44] https://publications.europa.eu/en/publication-detail/-/publication/e38ea9ce-74ff-11e8-9483-01aa75ed71a1
[45] https://publications.europa.eu/en/publication-detail/-/publication/e38ea9ce-74ff-11e8-9483-01aa75ed71a1
[46] European Commission DG MARE 2018, contract no MARE/2016/24
[47] European Commission DG MARE 2018, contract no MARE/2016/24

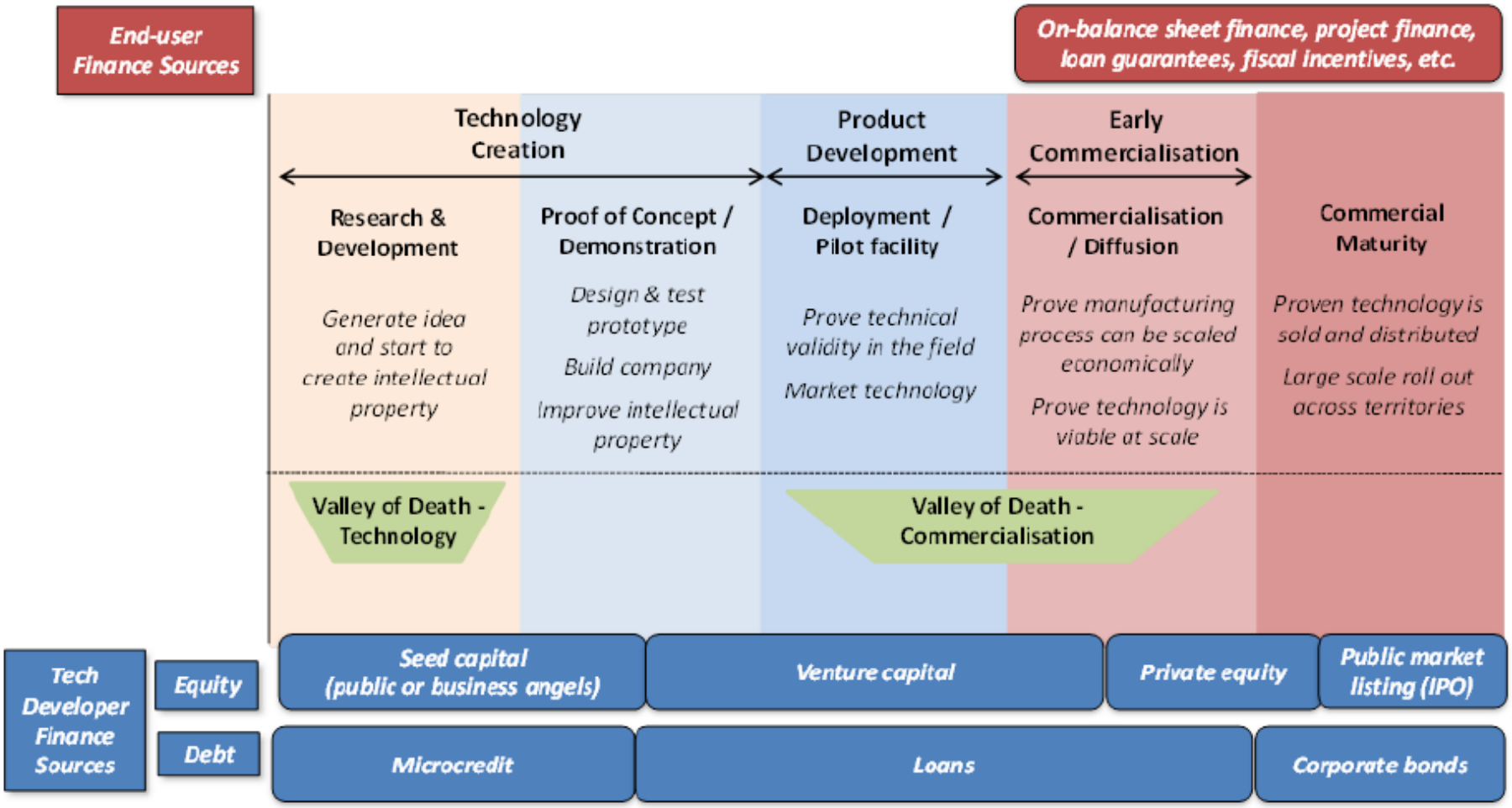
4.3 Investee Perspectives

- **Seed and Start-up Funding** – the Blue Economy is no different from other sectors, in that companies that have been able to obtain grants for the very early phase of their operations are then faced with a much more difficult challenge of attracting their first commercial investors. Seed and start-up funding is typically provided via friends and family or via business angels. We have seen that there exists in the financing continuum a number of risk capital sources that provide small amounts of capital to seed and start-up companies. These are diverse and range from provision of grants under Horizon 2020, to regional Blue Economy development funds, as well as impact investors and crowd funders. This results in a wide funnel of innovations being supported across the different subsectors in the Blue Economy. From our partial and pragmatic analysis, it seems that access to this form of capital is not a bottleneck in the short term, particularly due to the strong grant programmes.
- **Commercialisation 'Valley of Death'** – once prototypes have been successfully tested (often using grants), attracting commercial funding for the commercialisation and scale-up phase remains a challenge for many companies. The Valley of Death[48] (or Missing Middle) often becomes a trap for businesses that are unable to progress to attracting commercial investment. Venture capital funds remain reluctant to commit at this stage in the innovation cycle, because they sometimes do not understand the Blue Economy technology risk, market potential or potential upside well enough. Additionally, this stage is considered too risky for banks to commit, at least without some form of guarantee being offered to cover the high risk profile[49] and with potential capacity building to enable a better understanding of the risks associated with Blue Economy companies/projects. The larger amounts needed at this point require more thorough assessment of risks and opportunities.

[48] The phrase 'Valley of Death' refers to the gap between the development of scientific knowledge and the development of commercial products. Many institutions such as the European Commission in its Horizon 2020 attempted to use the Technology Readiness Level (TRL) scale to better contextualise and operationalise the concept of the "Valley of Death". However, there is no general agreement on which TRLs represent the "Valley of Death", with some authors placing it between 4 and 8, while others place it between 5 and 7. The concept of "Valley of Death" has been applied to both technology readiness and commercialisation readiness.

[49] The InnovFin Energy Demonstration Projects (EDP) facility is a good example of a publically-backed guarantee that is intended to crowd in commercial banks into the Valley of Death. See http://www.eib.org/products/blending/innovfin/products/energy-demo-projects.htm

Figure 11. Phases of commercialisation



- Benchmarks and other datapoints from similar investments are scarce or absent, which raises the perceived risk-level and this subsequently increases the related targeted IRRs for such an investment. Also, incentives for analysts and managers to explore these sectors are balanced off against easier investment opportunities in mainstream sectors and risk management that has grown more stringent in recent years. Industrial investors further down the value chain, often international corporations, are also reluctant for similar reasons. Innovations that result in cost-savings (e.g. diesel savings) or compliance with new regulations (e.g. reducing by-catch or new IMO-regulations for exhaust gas cleaning) are better off than innovations that might be game-changers in increased sustainability such as growing and processing of seaweed, or electricity powered boats.
- **Funding Sources** – A large amount of funding raised is concessional, and the predominant investment source has been government funded VC/Seed funding vehicles.
- **Additional Incentives** – Perhaps strategic investors and industrial investors (i.e. corporates) might become more interested if there were tax incentives or CSR-linked incentives.

4.4 Perspectives from the Funding Side

Perspectives and observations were gleaned informally from interactions during the course of the project from Fund Managers, and through a series of conversations and meetings with the EIB and EIF. Specific views were collected from these different stakeholders regarding their involvement, approach and view of the Blue Economy investment opportunity.

4.4.1 Fund Manager Perspectives

- Most emerging fund managers face a general shortage of capital in their funds and more established fund managers may be constrained in the extent to which they can undertake investments into emerging sectors. Both categories would clearly therefore like to see additional sources of Blue Economy capital so that they can increase their fund volumes to enable them to develop larger Blue Economy portfolios.
- The problem that fund managers face is not generally a risk-return problem, so they are not looking for subordinated investors to persuade risk averse investors to participate. More investors (institutions, foundations, family offices, national promotional banks etc.) need to be brought into the sector to enable funds to reach critical mass.

4.4.2 Institutional Investor Perspectives

- Institutional investors with a specific mandate for or interest in the Blue Economy are already investing directly into some companies in the sector. The success that the companies (from those sampled for this study) have had is evidence of this intervention, even if the total amounts invested remain low at the moment.
- Other investors are also looking for pooled vehicles through which they can diversify their risk, while still gaining exposure to the sector. Although there is a limited number of funds dedicated to the Blue Economy, a small number of investors (both public and private) have already demonstrated their interest in supporting the sector.

Sophisticated investors are conscious of the risks and opportunities of investing across different sectors. They have different motivations for wishing to obtain exposure to sectors such as the Blue Economy. For some, it is a desire to create a more diverse portfolio of holdings, while for others, it is a desire for exposure to a particular type of investment.

One of the attractions of investment fund structures is that they allow investors to benefit from the expertise of the fund manager (thereby avoiding a need to master

these skills themselves); it also allows them to spread their risk across a portfolio of investments. Nonetheless, funds require investors to pay fees, and the same investors are therefore constantly seeking ways of making their overall investments more efficient. They are therefore increasingly interested in getting access to co-investments alongside expert fund managers. These offer the best of both worlds; lower overall fees and reduced risk due to the presence of an expert investor. They may also address another disadvantage of a typical fund structure, which will have a lengthy lockup period (typically 8-10 years).

4.4.3 European Investment Bank

The team has had a number of interactions with the EIB Group (see Annex 7 for more detailed meeting notes). In summary the EIB Group is engaged in traditional lending in certain marine sectors. Equity investment are carried out by its subsidiary, the European Investment Fund (EIF) – see section 4.4.4 for more details.

Blue Economy Focus – the thematic area of the Blue Economy was confirmed as a good fit with the objectives of the EIB Group, particularly where there was a strong environmental or social impact. The Blue Economy theme has support at a senior level within EIB although it was understood that there are currently no explicit 'Blue Economy' objectives for the EIB Group., EIB Group has been active in Blue Economy lending and investment for many years.

Existing portfolio – the project team learned that the EIB Group has both a direct and indirect portfolio of investments and loans in the Blue Economy sector. EIB has been a major supporter of the development of the offshore wind industry, while the EIF has financed many SMEs that are active in the Blue Economy through its portfolio of fund investments.

Note on Blue Economy Categorisation - portfolio analysis is somewhat hampered because the Blue Economy is not recorded as a specific investment sector, so for proper analysis it would require a current and historic addition and categorisation evaluation to accurately assess the exact level of Blue Economy activity. At the European Commission level, the same is true. A good example is Agri Funding. It was previously thought that very little funding was provided for Agricultural Sector investments as the figures were directly sourced from budget allocations, but there is actually a reasonable number of investments through Horizon, COSME etc. – in fact more so than in DG AGRI.

Investment Structures – Caution was advised by the EIB regarding the integration of different risk tranches into an investment structure, since this has proved to have been problematic or simply not practical in the past. The EIB showed interest in accessing pools of concessional or grant money to bolster current initiatives already undertaken (FI Compass, EIAH), but rather as a dedicated pool of Technical Assistance (TA) money that could be specifically incorporated into a commercial fund structure.

Debt versus Equity, large versus small – The EIB focusses mainly on large debt transactions. Even in higher risk operations benefitting from the EFSI guarantee, the equity operations are intermediated. It was generally the view of the EIB that the proposed BEIP would be more closely aligned with the typical investment targets of the EIF, in terms of company size and growth stage.

Diversity of sectors and geography – The diversity of the sectors included in the Blue Economy was discussed at length. The EIB team noted that it may not be appropriate to propose a sector-wide investment platform due to differences between some (sub)sectors. The merits of an investment platform with a geographical focus was also discussed due to regional differences in Blue Economy opportunity.

EFSI – the EFSI covers higher risk operations and is delivered through direct lending and intermediated equity. EFSI 2.0 includes more Blue Economy sectors, although with an emphasis on large scale infrastructure requiring debt and intermediated equity. EFSI operations have included some 'Blue Economy' investments. However, these were not recorded as such and have fallen under the Energy Efficiency designation included in

the Act. For example, the funding by the REIB (guaranteed by EFSI) for building an energy efficient fleet by a large shipping company. The EFSI guarantee has not yet supported any specific Maritime Investment Platform. EFSI 2.0 will probably lead to more Blue Economy Investments given that Agri and Bioeconomy are explicitly included sectors. It would appear that there is a good potential fit between EFSI objectives and a structure such as BEIP.

4.4.4 European Investment Fund (EIF)

The study team has consulted several times with the EIF in order to assess the potential for partnerships with a future BEIP focused on supporting high-growth SMEs

Some key features of EIF illustrate the potential fit with BEIP as the EIF:

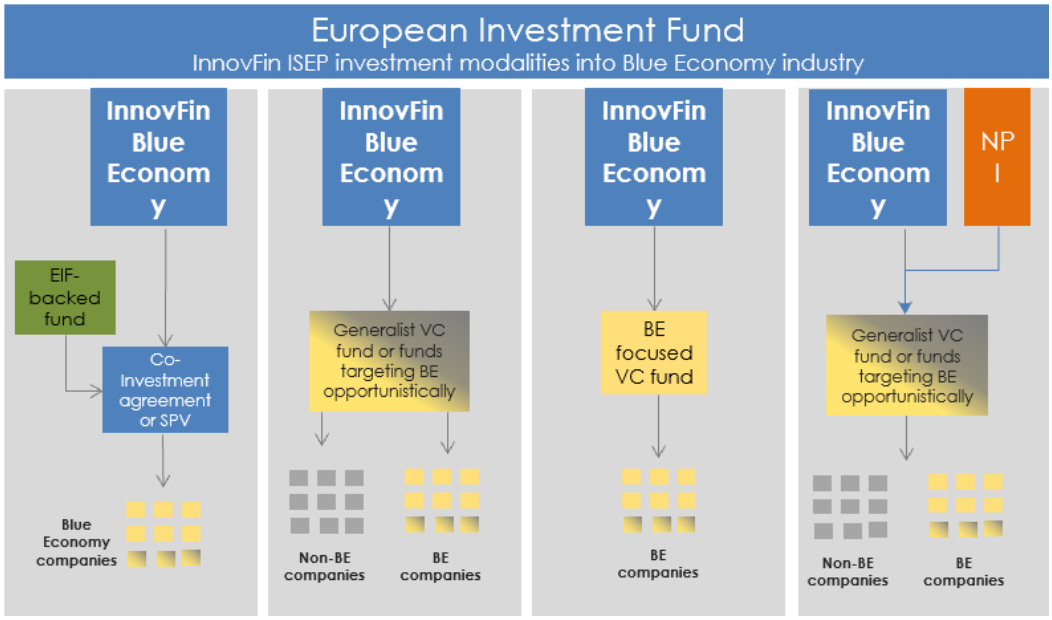
- Operates largely a fund of fund model, or platform funding model;
- Has the ability to provide equity (intermediated);
- Has increased its capital base as a result of EFSI; and,
- Offers new InnovFin funding structures which are creating useful benchmarks.

EIF is seeing more investment proposals in part or fully targeting the Blue Economy, including clean-tech investors. For example:

- 35 funds in which EIF is a limited partner have made around 40 investments into Blue Economy business;
- EIF receives one to five proposals per year for managers that focus on Blue Economy sectors.

Despite this activity, the Blue Economy remains a niche sector for the EIF. Furthermore, the EIF does not have a dedicated Blue Economy mandate or a dedicated sustainability mandate. Therefore, 'Blue Economy' Funds must compete for funding with any other thematic Funds. Additionally, there are no mandatory obligations to close a certain number of sustainability deals per year.

Figure 12. InnovFIN ISEP investment modalities into Blue Economy industry



Source: EIF

The EIF acknowledges that the 'Blue Economy' is a diverse ecosystem that they need to fully understand. Due to not having had a specific focus on the sector in the past and, importantly, because to date only a limited number of General Partners (GPs) targeting the Blue Economy sector have approached them, the EIF assumption has been that there was limited market demand.

The study team discussed with EIF how it might engage more actively in the market. The following points were made:

- It is crucial to note that EIF is a wholesaler – it searches constantly for products that fit the market. EIF needs to see demand from fund managers to be able to engage, going on to support fund structuring with GPs, including with first-time teams.
- EIF can technically undertake co-investments (i.e. on specific investments into portfolio companies). Indeed, it is an activity that is starting to gain some momentum.
- EIF has learned some hard lessons from its previous investments into the Clean-tech sector over the past ten years or more. Consequently, EIF is very careful about infrastructure financing models (i.e. capital intensive) and the time horizon associated with such investments. For this reason primarily, the marine renewables specifically might not be attractive to them as a thematic area within the Blue Economy.

As a fund of fund investor, the core requirements of the EIF are as follows (noting that they rarely see proposals that have all of these elements):

- A track record for the management team is very important, even if it does not come directly from the Blue Economy.
- Understanding the business model for the sector is critical for their approval.
- Understanding the team, their experience, the depth of the market in the Blue Economy (a very broad sector), the investment strategy is for entry and exit (stage, financial instrument, holding period, type of exit, etc.).

4.5 Lessons Learned from targeted consultations with investee businesses

Extensive work has been undertaken with the 35 high growth potential investee businesses targeted in this study to understand the lessons learned from their experiences of raising funds. While most of the companies targeted have been somewhat or highly successful in raising money, nonetheless, along the way, they have had to work very hard to raise money and for most it has not been an easy process. Investee businesses have therefore provided important lessons and insights which provide valuable benchmarking material for this study. A more detailed coverage of these findings is set out in a separate report for this project.[50]

4.5.1 Summary

The Blue Economy businesses consulted for this study have had varying degrees of success in attracting external funding. They offer valuable fundraising lessons that can inform the development and implementation of the BEIP.

For the businesses consulted, across all Blue Economy sectors, the common barrier to accessing public and private funding is perceived as a lack of investor expertise, both in respect of specific sectors and their potential for growth, as well as for the proposed innovations (which, in many cases, are 'cutting edge' and with few or no market precedents, making achieving a 'proof of concept' a challenging task).

Most companies consulted had been successful in securing significant levels of early funding – often up to €2m to €3m, first through family, friends and business partners, through business angels (a common route), as well as small-scale grants and loans. Getting to the 'next stage' of business growth is where the problems start to multiply and the conditions that are generally attached to funding (e.g. the valuations expected

[50] Study to support investment for the sustainable development of the Blue Economy – Lessons Learned

by private investors) can act as a deterrent, especially for family or entrepreneur-owned businesses.

While many of the businesses consulted had thorough and professional investor propositions, business plans and investor presentations, businesses reported a particular gap in the funding market for amounts between (approximately) €2m €15m, the latter amount being offered by some larger investors as a minimum level of investment. However, this is well beyond the levels that many businesses actually require, or as a loan/debt that can be serviced.

In many cases, there was a recognition that businesses need to do more, either to professionalise their approach, undertake the necessary research or prepare more thoroughly before seeking external investment, either public or private.

EU soft funding is welcomed but businesses in general were critical of a perceived lack of flexibility and complex rules and regulations. Both the lengthy timescales and the timing of public funding support were raised as key issues. For example, the length of time it can take to apply, process and receive funding (especially EU funding such as H2020) can be out of synch with business needs. While the time inputs from businesses, often by senior staff, including CEOs, and the impact that has on running and developing the business is also often a barrier. Some businesses use professional funding advisers. However, that does not replace the need for time inputs from the senior management and will often incur additional costs.

4.5.2 Findings and Implications

The strong activity amongst innovative start-ups, which are generally well supported by personal investment and grants, gives way to a more complex financing ecosystem beyond start-up and early growth phases. Some businesses benefit from being part of larger groups, by being acquired, or (in one case) being a university spin-out business. However, for all businesses consulted, raising finance can be challenging, time and resource consuming and frustrating. One entrepreneur stated that the technical inventions to realize his commercial opportunity were easier to realize than getting access to investment capital.

The lessons learned from the targeted companies indicate that the absence of financiers to bridge the 'valley of death', which exists in mainstream sectors, is also an issue in the Blue Economy.

Some investors are focused on specific sectors of the Blue Economy and consequently have a good understanding of the markets they operate in, although none covered in this study are known to cover all the Blue Economy sectors that would fall within the scope of the BEIP. At the same time, a number of investors that operate in mainstream SME-sectors, may also be able to look at, and take on, a small number of Blue Economy deals which fit with their investment strategies. The issue in these cases is a lack of sector knowledge on the part of the fund manager, introducing potential risks to the fund and to investors into the fund.

Based on the review of Lessons Learned from Blue Economy investee business experiences, some common conclusions are evident, the main ones being that:

- **Businesses have to be 'happy' with the investment process.** Not all will 'rush' into funding arrangements and some will resist external funding until it is absolutely required to go to another level, and then only on terms that provide a 'win-win' for both the business and the investor. The potential loss of equity and business control was a barrier for several businesses consulted, especially those that had grown organically, in some cases as family businesses. Whilst some businesses cited private investors, and banks in particular, as being 'risk averse', the same also applies for a number of the businesses we consulted. Some businesses, which may be classified as lifestyle businesses simply prefer slow, incremental growth.

- **Businesses also benefit from experience of investment funding.** In a number of cases, the CEO had extensive experience of bringing in funding (in some cases transferring experience from a previous company). Elsewhere businesses had brought in investment experts, or worked closely with independent experts. Longer-term partnerships with investors were often preferred, allowing the investor to 'get to know the businesses. A preference for more face-to-face contact with investors, or visits to company premises 'to appreciate what we do' was highlighted in several cases.
- **There is a dearth of expertise and knowledge amongst investors about the latest developments and market potential of some aspects of the Blue Economy.** This hinders risk-taking and slows investment; and, whilst some failures cannot be avoided, there is also a risk that some projects of potentially global significance could be missed. In some cases, it is not necessarily a lack of sectoral knowledge, rather an unwillingness to take risks with new (and in some cases 'cutting edge') technologies, more so in the aquaculture and bio economy sectors, but also marine engineering, shipping and in new areas such as wave and tidal stream power.
- **Businesses also lack some knowledge of where to go for investment** (or initially advise on investment). This applies particularly to those seeking external funding for the first time. Some of those businesses consulted reported a confusing array of public and private funds with differing rules and conditions, eligibility etc. Several had obtained funding from business angels, especially in early stages, and with some success. Often this results in incremental investment over a period of a few years (3-5 years was often mentioned), which suits the development path, and capacity to grow, of many businesses.
- **There is a growth of new, innovative funding approaches**, complementing traditional funding routes (e.g. banks, business angels, venture capitalists etc.). In at least one example, a business had used crowd funding to develop their technology.

Whilst there is a challenge in combining rigour with reduced timescales and less process, businesses can help to achieve this by being:

- better prepared and more professional in their case making;
- building up a track record of positive delivery;
- being active in business, cluster and other networks; and,
- testing new products and 'educating' investors etc.

In this way, failure rates can be reduced, and the prospects of successful and timely investment enhanced.

- All Blue Economy sectors share a number of characteristics due to their common links to the ocean and its business environment, but there are some stark variations in the market character and growth prospects of the different Blue Economy sectors covered by this study, including:
  - Aquaculture – projected market growth is very impressive but there are risks (climate, disease, weather conditions) and the market opportunities are not always fully understood. The – sometimes lengthy – time taken to grow product for market deters some investors.
  - Shipping – the high costs require large-scale and long-term investment. Technology advances are challenging for businesses and investors and there is strong competition from outside the EU. Some investors are put-off by what they see as a' stagnant or declining' market.
  - Energy – as with shipping, investment costs can be high and subsidies for renewables have declined, particularly in the offshore wind energy sector where the ramp up in capacity and advances in technological innovation have allowed project developers to significantly reduce their cost predictions as well as

reduce substantially the risk profile of the sector, enabling institutional investment to now become commonplace. The time taken to get to commercialisation is lengthy for the wave and tidal power sector, which lags well behind wind and solar power in terms of the development curve.

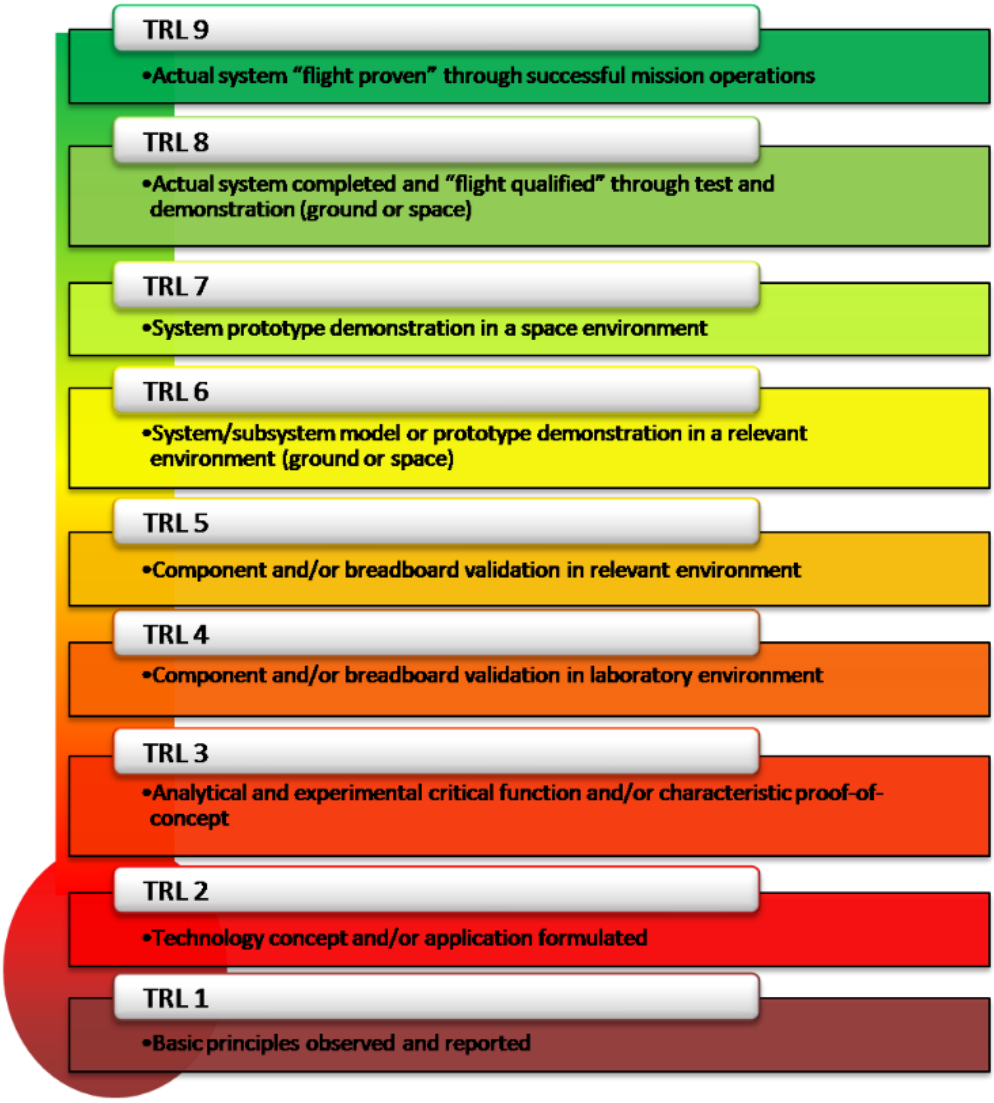
- Marine bio economy – regulations have been a barrier to growth, as has the compartmentalisation of the funding market, which tends to follow specific applications for products and end uses (e.g. cosmetics, nutraceuticals).

4.5.3 Implications for the design of the BEIP

Based on the lessons learned, we see the following implications for the BEIP design:

- The BEIP needs to satisfy the needs of (sub)sectors with some strong commonalities but in some cases substantially different characteristics. Above all it needs to bring expert knowledge of the Blue Economy, the technologies involved and the market potential to the attention of investors and their expert advisers.
- The platform design needs to consider developments at the EU level to guard against duplication and to be sure of the extent of complementarity. The idea behind InvestEU is to combine some funds (including EU financial instruments) in the interests of simplification and reduce potential market confusion (too many different funds with different rules etc.). However, InvestEU has a broad sectoral approach and is not a bespoke Blue Economy tool, although it should simplify the EU funding landscape, and help – through the InvestEU portal - better combine public and private funding by presenting options and case studies. Some of the companies consulted already do this, utilising EU Horizon 2020 monies alongside national (the Norwegian government is very active, as is Scotland in the UK) and or private funding.
- Better visibility of EU and government investment policy would help to provide comfort for businesses and investors. Often policy intentions are 'hidden' in documentation, and now is a good time to engage with policy makers given that the EU and Member States are focused on the post 2020 programmes and funding arrangements. At the same time the EU and Member States can assist with promoting opportunities for EU technologies in the Blue Economy in non-EU markets. This could be through bi-lateral programmes and trade agreements with non-EU countries (e.g. Canada) and EU programmes that extend to non-EU countries (e.g. EU Motorways of the Sea).
- The BEIP needs to be able to support relatively early stage companies as well as more mature companies that still require finance as they move to TRL9 (see below) and full commercialisation (and beyond to fund further expansion and development). A priority will be the 'middle ground' companies that have moved beyond personal investment and start-up grants.

Figure 13. Technological Readiness Level



Source: NASA

- Some companies need specific support in getting to proof of concept whilst some also have technologies with potentially global benefits (e.g. controlling sea lice, or restoring coral reefs) but struggle to get funding without extensive – and expensive – technology testing. For smaller companies these are critical periods in their development where funding could speed up processes and/or ensure technologies and products get to market.
- The financing landscape can be difficult to navigate, especially without experience of the available options and the requirements of investors. Some companies are able to get access to funding, but others suffer from slower growth than would be optimal, for themselves and for the Blue Economy. Getting companies better equipped to plan business growth and to make professional and thoroughly researched presentations will help, and should also lead to more streamlined investment processes.
- A BEIP should deal with the technical assistance and support needs of companies that require reinforcement, as well as the needs of investors to better understand the Blue Economy. Such support can lead to stronger and better evidenced investment proposals. There is extensive knowledge on a range of Blue Economy technologies, but much is not accessed by businesses.

4.6 Financial Frictions and Rationale for Public Intervention

- Firms operating in the Blue Economy seek external funds to finance the development of their products, technologies and processes, to expand their activities, and to gain access to new markets. However, available studies recognise that blue firms face constraints when accessing external financing.[51] In general, blue firms face similar financing challenges as firms in other economic sectors. It is the nature of the firm and the stage of its life cycle, and not necessarily its sector of activity, that determine its financing conditions.
- Small and medium-sized enterprises (SMEs) in particular face more difficulties in financing their activities because of higher levels of information asymmetry between them and investors, the lack of certain types of assets to pledge as collateral for loans, and investors' preference for larger financing deals due to economies of scale (World Bank Group, 2017a). We estimate the financing gap for EU blue SMEs to range between €60–€70 billion (i.e. about 15% of their annual gross value added).[52] This includes all types of financing (investment and working capital) and types of SMEs along a firm's life cycle (i.e., from early-stage to mature firms). It should not be confused with the gap between the current R&D investment in the EU (around 2% of GDP) and the target R&D investment of 3% of GDP by 2020, which the EIB (2016) estimate at €130 billion per year. We should recognise however, that financing gaps evolve with macroeconomic dynamics, as financial institutions tend to reduce its share of credit to SMEs in time of credit constraints, and vice-versa. The European Central Bank shows that SMEs in Europe have been benefiting from continuously improving financing conditions since 2014: access to external funds has increased more than the increase in the need for external financing, thereby reducing the financing gap.
- For similar reasons, early stage innovative firms also face financing constraints. Younger firms are more likely to struggle in a less-than-optimal credit environment because they have shorter credit histories and typically do not have established relationships with lenders. Moreover, financial markets do not generally internalise the social benefits of innovation, leading to under-investment in early-stage R&D. Banks' aversion to risk in a scenario of increasing capital requirements also justify lower-than-optimal financing of early-stage ventures.

4.7 Additional Market Elements

Grants – Although it may not be 'easy' to attract funding, there has been very little evidence of a structural shortage of grant finance for start-up and early stage companies in the Blue Economy sector. Most companies generally welcome grant finance because of its obvious advantages (no need to repay) and young companies in the Blue Economy generally do not feel that they lack access to grants. The BEIP does therefore not need to provide further grants to the sector. The number of successful businesses that break through into the growth phase of their development as a result of access to grants is evidence of the success of these programmes. This does not mean that grants should not be deployed alongside investment capital or loans. Indeed, there is good reason to

[51] Blanco (2009), van den Burg et al. (2017), Innovation Finance Advisory and European Investment Bank Advisory Services (2017), Kleih et al. (2013).

[52] We assume the value added of blue firms to be 5% of the European Union gross domestic product (EU GDP), as suggested by the European Commission (2012). Based on Eurostat figures for the EU GDP in 2017 (€15.3 trillion) and on European Commission (2017)'s estimate for the SMEs' contribution to the EU GDP (56.8 %), we estimate the value added of blue SMEs to be around €765 billion. The estimated range for the financing gap for SMEs in the EU (i.e., 15-20% of their annual gross value added) considers data from surveys of businesses conducted in recent years by the World Bank Group in 11 European Union middle income countries (World Bank [2017a]). We have revised this estimate downwards for all EU countries to account for lower financing gaps in higher income countries and based on the recently published ECB SME Survey for October 2017 – March 2018 in European Central Bank (2018). The World Bank Group's concept of SME financing gap is the estimate of how much financing SMEs in a country would have sought (willingness) and been able to obtain (ability) if they operated in a better institutional, regulatory and macroeconomic environment.

combine grants (possibly conditional grants) with investment capital to assist companies and investors in managing Blue Economy specific risks.

Blended Capital – Blended capital is when different risk-return profiles are combined into a single investment vehicle. There is an opportunity to enhance the BEIP's profile by introducing a tiered shareholder structure at the level of the BEIP. This could include a tier where public funding absorbs more risks or is more patient than private funding, but without the higher risk-adjusted return requirements. By doing so, the investment proposition could be made more attractive to private sector investors who benefit from this kind of structure. This should be looked at more carefully once the financial model for the fund has been developed to ensure that the BEIP is able to attract private sector investment.

Figure 14. Types of financing

Source: OECD

Investment Instruments – as in the wider financing world, a range of investment instruments could be applied to different tranches of the Blue Economy sector to create a good match with the specific characteristics of each company seeking finance. The work that has been carried out identifies the main gaps on the equity and quasi-equity (including mezzanine) side, rather than debt. Within equity and quasi-equity there are many subtle differences in the specific instruments that are available.

One of the strengths of the fund of funds approach is that it would provide an opportunity to review the suitability of the financial instruments for the targeted (sub) sector that a fund manager proposed to deploy at a detailed level prior to making a decision to commit funds to that manager. For example, a manager might propose an exclusively mezzanine-based fund, and would provide all of the arguments available to justify this approach to supporting Blue Economy companies and projects.

The Role of Corporates – While corporates are already present in the Blue Economy. (E.g. Unilever with MSC-fish), corporates could be encouraged to consider becoming more (pro)active and / or more actively pursuing investments in innovative SMEs. This would increase access to strategic investors and reduce the uncertainty for such SMEs in finding future clients. For those SME-led innovations (often business-to-business solutions) that require scale, engagement of such corporates is crucial and would also extend the value chain to include business-to-consumer markets. This might lead, as it has in other sectors, to more consumer-awareness of the development of a company. The sustainable innovations being developed and additional presence of corporates would also lead to more consolidation in the sector, as well as create merger and acquisition (M&A) opportunities, spin-offs and exit opportunities. This will help to reduce the risk profile for some potential investees into the BEIP. An example is Thyssen-Krupp who have an incubator programme that recently developed an advanced device to reduce bycatch in deep-sea fishing by gathering detailed sub-sea data and immediately sharing this with shipping vessels. A company has been established to own this

technology and will soon to be spun off once additional shareholders have been identified.

A quote from the CEO of a leading company presents the dilemma of large corporates: *"… [CEO] wants to ensure [the company] is at the forefront of innovation, but [CEO] does not want to get out so far in front where he dilutes investor returns but [CEO] does want to make sure [the company] is at the leading edge of transition [to lower-carbon economies]."*

State Aid - It is not within the the scope of this report to provide definitive legal comment on state aid issues, as this would necessarily have to be provided by a State Aid lawyer. However, the basic state aid considerations are mentioned for completeness purposes in this short footnote: A company (or funding vehicle) which receives government support gains an advantage over its competitors. Therefore, the Treaty generally prohibits State aid unless it is justified by reasons of general economic development. To ensure that this prohibition is respected and exemptions are applied equally across the European Union, the European Commission is in charge of ensuring that State aid complies with EU rules (http://ec.europa.eu/competition/state_aid/overview/index_en.html). State aid is defined as an advantage in any form whatsoever conferred on a selective basis to undertakings by national public authorities. Therefore, subsidies granted to individuals or general measures open to all enterprises are not covered by this prohibition and do not constitute State aid (examples include general taxation measures or employment legislation). To the extent that a platform offers some concessional finance to underlying companies, or receives concessional finance to deploy as a commercial actor in the funding market, and these funds have been sourced from members State coffers, this would suggest a state aid consideration. In general the European Commission requires evidence that the benefits of a state balance the costs of distortions created to competition. The EU has a methodology for assessing allowable state aid, and it looks for appropriate design of intervention, behaviour-changing incentives and proportionality. In the absence of a General Block Exemption a report or market analysis piece of work must be presented to the Commission that provides evidence on design rationale, incentives and benefits of the platform. To be State aid, the Fund would have to have these features:

- there has been an intervention by the State or through State resources which can take a variety of forms (e.g. grants, interest and tax reliefs, guarantees, government holdings of all or part of a company, or providing goods and services on preferential terms, etc.);
- the intervention gives the recipient an advantage on a selective basis, for example to specific companies or industry sectors, or to companies located in specific regions
- competition has been or may be distorted;
- the intervention is likely to affect trade between Member States.

4.8 Summary of Identified Needs

The results of the financing platform mapping identified a plethora of financing mechanisms (both private and private) relevant to the Blue Economy sectors and the type of businesses targeted (i.e. innovative companies and projects just prior to or beyond commercialisation). It is clear that a well designed BEIP would add tremendous value on a European perspective. It would be able to provide integrated services essential to stimulating growth of innovative SMEs, maximise cross-border opportunities, and leverage investment at a greater scale than can typically be achieved at regional level.

A considerable share of the investment landscape is comprised of new public and private initiatives (i.e. investment fund managers), many of which remain in the early stages of their lifecycles and are yet to become fully established. This illustrates the dynamism

of the sector which is confirmed by the recent EIF VC survey. Some key conclusions regarding the gaps by business stage, sector and geography are as follows:

Business Stage

There is an apparent continuum of financing across businesses sizes and level of business maturity. Feedback from Blue Economy businesses indicates potential gaps in funding between €2m and €15m, above which level larger investors (and some banks) are more interested in funding later stage opportunities with greater stability. The very early stages of a company's life and the needs of more mature companies are better catered for by existing sources of funds.

Sector

The table below is a preliminary mapping of the availability of funding across the different sectors of the Blue Economy. It indicates the largest funding gaps are in the Coastal Protection and Renewable Energy sectors with smallest funding gaps in the Extractive Industries and Transport sectors.

Table 6. Availability of funding across the different sectors

		Blue Economy sectors						
		Coastal protection	Extractives	Renewable Energy		Seafood	Tourism	Transport
	Notes			Offshore Wind	Ocean Energy			
Size of annual investment need	1,2,3,4,5	Medium	Low	Very High	Low	N/A	N/A	Medium
Annual investment need (Range €bn)		3.1 to 7.8	1	22.5 to 30.8	0.8			5
Typical investment need (€bn)		4.7	1	8.3	0.8			5
No of market actors	6	Medium	Medium	High	Low	High	Medium	High
Total actors mapped		17	17	38		26	14	35
Highly relevant actors		14	12	25		22	12	21
Medium relevant actors		3	5	13		4	2	14
General availability of funding	7,8	Limited	Uncertain	Good	Poor	Good	Limited	Good
Total Investment need / market actor (€m)		276	59	218	21	Uncertain	Uncertain	143
Scale of supply deficiency vs investment need	9	High	Low	High	High	Uncertain	Uncertain	Medium
Scale of allocation implied through BEIP	10,11	High	Low	Medium	High	Medium	Medium	Low

Notes: (1) Investment needs defined as Low (1bn or less p.a.); Medium (1-5bn p.a.); High (5-10bn p.a.); Very High (10bn+ p.a.)

(2) Estimates of investment need were not found for Seafood or Tourism

(3) Total coastal protection investment costs of €100-250bn annualised through to 2050 (from 2018, i.e. 32 years): note will cover much climate resilience rather than pollution control

(4) Total offshore wind investment needs of €90-123bn to €250bn annualised through to 2020 (from 2017, i.e. 4 years including base year)

(5) Total offshore wind investment needs of €9.4bn annualised through to 2030 (from 2018, i.e. 12 years)

(6) No of market actors defined as Low (<10); Medium (10-20); High (>20); Indicative figures for ocean energy funding providers based on market knowledge of study team

(7) General availability of funding based on sectoral overviews in D14 report; Typical fund sizes from mapping are €25m to €100m, but some e.g. for Transport are very large

(8) Indicative figures for ocean energy funding provision based on market knowledge of study team; Seafood: exception is lack of credit finance for aquaculture in Mediterranean countries

(9) Scale of deficiency in supply of finance vs implied need based on alignment of average investment need per typical fund sizes

(10) Scale of allocation implied through BEIP indicates the indicative level of additional funding required based on ability of actors to meet investment needs

(11) New innovations in the offshore wind market such as floating wind implies additional risk capital finance

Source: ICF

The scale and types of investment needed vary considerably across the Blue Economy sectors of interest flagging the needs to develop tailored support mechanisms rather than an all-encompassing solution. Some parts of the seafood, offshore wind and coastal tourism sectors may also need specific support. The Coastal Protection and Renewable Energy sectors should therefore be at the core of the design of BEIP.

Geography

The mapping exercise did not allow the team to draw strong conclusions in terms of geographical coverage of the available financing, since the vast majority of the investors identified are active on an international basis. Investor mapping at national level would be needed to obtain a more accurate picture. If one takes as proxy the recent investment trend in the "established" Blue Economy sector, it appears that the Investment platform should place special emphasis on providing capital to Southern Europe (with the exception of Italy which has already three relevant investment platforms), the Baltic States and Eastern Europe.

It should be pointed out that, on the basis of the work carried out, the arguments in favour of a special priority for these regions are not strong due to the limited sample size and probable bias towards some of the stronger Blue Economy countries because of better organisation, Commission contacts and a stronger network of the project team in these countries, amongst other factors. To illustrate this:

- The strongest countries in terms of number of eligible projects were Norway (13), France and UK (12 each), Sweden (9) and Italy and Spain (7 each).
- In the final list of investment dossiers, the strongest countries were France and UK (7 each) followed by Spain and Portugal (3 each).

This could broadly be taken to confirm that the northern European regions are somewhat better served than the southern and eastern regions, but as already stated, the evidence is somewhat weak. Hence, on the basis of this work, it would be hard to prioritise a particular geographical area over another.

Although the work undertaken in this project did not include an effort to identify companies and projects located in Outermost Regions or Overseas Countries and Territories, these are likely to provide a particularly interesting context for the growth of suitable Blue Economy companies. Many of these are located in locations with uniquely interesting geographic or climatic features that allow a product or service that could not be developed in Europe to tested and brought to market. They may also represent a captive market and a means of showcasing products or services in a particularly powerful way from a marketing perspective.

The market failure that this platform addresses is the shortage of supply of capital (mainly equity) to growth stage blue economy businesses. In comparison with the investment needs and the number of investment opportunities there are very few dedicated capital providers. As outlined above, the market failure is greater in certain sectors than others. The market failure stems from the low profile of blue economy sectors which is compounded by a lack of knowledgeable investors. This platform will provide the capital needed to encourage new fund managers to address the Blue Economy by boosting their fund raising efforts and will crowd in fund managers with a currently peripheral exposure to the Blue Economy. The advantage of the proposed platform is that it will be able to address the market failure in a highly nuanced way, deploying its capital into the most needed sectors, geographies and stages of investment via the fund managers with the most appropriate investment strategies to address each market failure.

5 Investment Platform Structures Considered

The project team has compiled a range of possible structures that could be implemented to satisfy the requirements of the Blue Economy sector and to ensure that as much as possible additional investment into the sector is facilitated. The options presented here are generic but once a particular structure has been selected it can be developed into a more sophisticated investment platform that takes account of the specificities of the Blue Economy.

The structures need to be able to accomplish a certain number of key objectives:

- Reasonable time to implementation.
- Possibility to leverage the financial resources of DG MARE and other parts of the Commission.
- Structure should avoid duplication and competition with existing players already in the market.
- Attractive to investors, and able to supply the funding needed by investees.

Regarding the question of competition, in establishing a BEIP, the Commission risks being accused of introducing unneeded sources of competition. For this reason, it would be preferable to create a structure that amplifies the efforts of existing and new players, rather than creating a direct source of competition. Where market gaps have been identified in Section 4 this risk is limited and a Commission-sponsored BEIP would have good legitimacy.

Note that in each of these structures, an Investment Manager would be associated with each the investment platforms. The usual legal structure involves a company that holds the assets of the investment platform which has an Investment Manager as an advisor.

5.1 Candidate Structures

A range of structures have been considered, including direct, indirect and co-investment structures. Each of these would be well understood by investors and therefore, subject to having a strong investment thesis, able to attract investment. Once the core financial structure has been selected, it can be enhanced by adding some of the features summarised in Section 5.4 (Associated Structures).

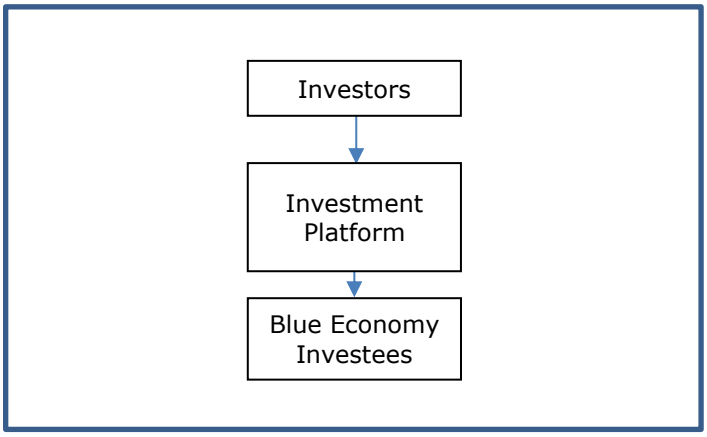
The structures considered are the following:

5.1.1 Dedicated fund with Blue Economy theme

Description – a central fund structure is established to serve the full range of Blue Economy businesses in all sub sectors: renewable energy, bio-economy, tourism, fisheries, aquaculture and marine technology. The fund invests directly into businesses in these sectors. Example: Fonds SPI – Sociétés de projets industriels, Circularity Capital Fund (UK)[53]

[53] Fonds SPI is a newly set up Fund, funded in part by EFSI. Circularity Capital is a newly established Scottish Based Fund manager, which has already made two successful investments (Winnow and Grover)

Figure 15. Dedicated Fund



Source: Project team, own considerations

Table 7. Strengths and Weaknesses – Dedicated Fund

Strengths	Weaknesses
Structural simplicity	Breadth of sectors to be covered would be a challenge for the fund manager
Transparency – all sub sectors can be covered fairly according to availability of deals.	Blue Economy opportunity may be a challenge to define in a coherent way to investors
Sub-sectors to be supported could evolve over time according to opportunity and need. More effective engagement with more diversified businesses due to wider sector knowledge.	Investors may not desire exposure to full range of Blue Economy sectors
	Would not allow support of other existing fund managers.
	Could become a competitive force to other fund managers (only if the market gaps have not been identified).
	Sector risk profile and size of investment might be too broad

5.1.2 Focused fund with Blue Economy sub-sector theme

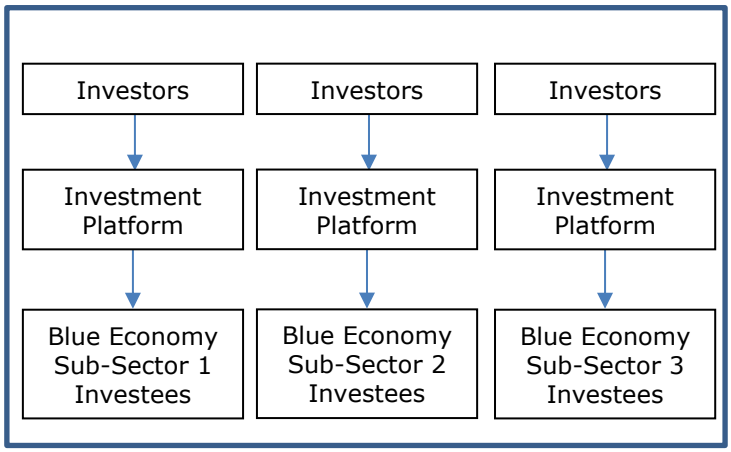
Description – one or more fund structures are established to serve businesses that are active in one or more specific Blue Economy sub-sectors according to the sectors that show the largest funding gaps and offer the best investment potential. The fund invests directly into businesses in these sectors.

A sub-sector theme may be one or more of the sectors that have been used in this project (coastal protection, seafood, transport, tourism, renewable energies or extractive industries) but could also be another label that would be applied in order to clearly identify a different sub-set or cross-cutting group of companies which represent a coherent and compelling investment theme in their own right. Good examples (as summarised in section 3.3.2 would be the circular economy, impact, enabling technologies, digital transformation and climate change (mitigation and adaptation).

There are 100s of private equity and infrastructure funds worldwide focused on specific sectors so examples here are not necessary. Any solar-only, or wind-only renewable energy fund would be an example.[54]

[54] This is an established Fund sector and increased investment (including EFSI) has been seen in the last 2 year sinto these types of Fund. Funds vary from smaller fund managers like Oxford Capital, Ingenious,

Figure 16. Focused fund with sub-sector theme



Source: Project team, own considerations

Table 8. Strengths and Weaknesses – Focused Fund with sub-sector theme

Strengths	Weaknesses
Good focus possible at fund manager level.	Would not allow support of other existing fund managers.
Deep sub-sector expertise could be developed and applied.	Could become a competitive force to other fund managers (only if the market gaps have not been identified).
	Public sector support would be seen to favour Blue Economy sub-sectors
	Not flexible to sectoral adaptation over time

5.1.3 Focused fund with stage orientation

Description – one or more fund structures are established to serve Blue Economy businesses at one or more specific stages of maturity (e.g. incubators, accelerators, start-up, venture capital, early stage, growth, expansion etc.) according to where the largest funding gaps are identified. The fund invests directly into businesses at these stages.

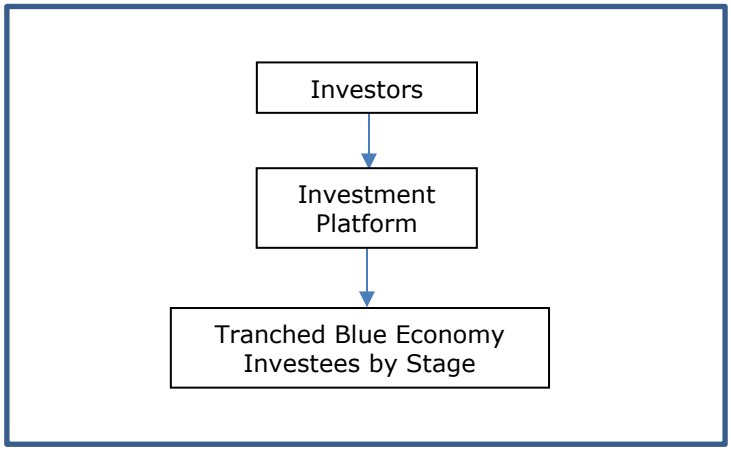


Figure 17. Focused fund with stage orientation

Source: Project team, own considerations

Foresight, Green sphere, to larger infra players such as CIP. to the larger Because of the competitive nature of the market, and maturity of technologies of Wind, Offshore Wind and Solar, IRRs on underlying assets have dropped in most markets.

The US market has a proliferation of examples of stage-based funds in the technology sector using the nomenclature of the stage of investment. Seed Funds, Series A and B funds, Venture Funds, Mezzanine Funds are all common names of funds focussed on investment stage.

Table 9. Strengths and Weaknesses – Focused Fund with stage orientation

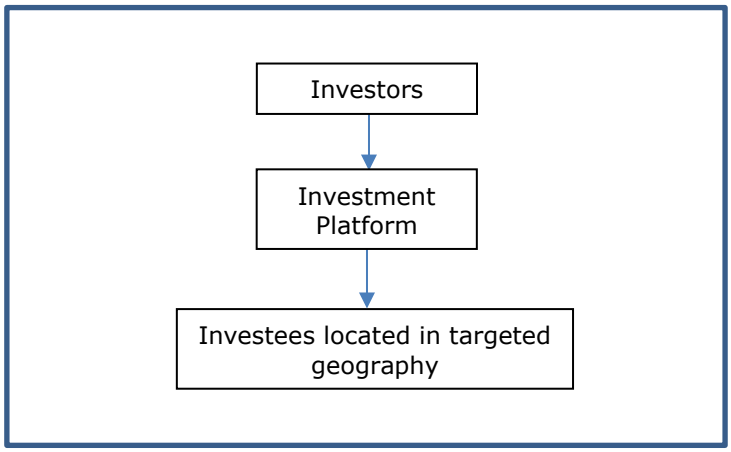
Strengths	Weaknesses
Fairness – all companies would have access at appropriate development phase	Would not allow support of other existing fund managers.
Allows capital to be deployed at stages where funding gap is greatest	Could become a competitive force to other fund managers (only if the market gaps have not been identified).
Investors think naturally in terms of company maturity	Would not allow support of other stages over time

5.1.4 Focused fund with geographical orientation

Description – one or more fund structures are established to serve Blue Economy businesses located in specific geographical areas (e.g. north, south, east or west Europe, Scandinavia, Mediterranean, ports, clusters[55] etc.) according to where the largest funding gaps are identified. The fund invests directly into businesses located in these places. A regional platform would be particularly suitable for regionally focused investors (such as regional public banks, financial instruments set up by regions, regional foundations, etc.

A geographic and generalist sector fund are common platforms used in public financing and in fact EFSI has anchor funded a number of such platforms to date , such as the MidCap Loan programme for Southern Europe, piloted through InnovFin.[56]

Figure 18. Focused fund with geographical information



Source: Project team, own considerations

[55] An example of an initiative to generate innovative sustainable business around a cluster is the Port Tech Clusters initiative of the Portuguese Ministry of the Sea. The Port Tech Clusters will work as technology accelerators for the new maritime and blue industries, by joining in the same place science, R&D and business capabilities. Infrastructural conditions will be developed so that research centres can be installed in ports, alongside with mature blue industries and start-ups (Blue Invest Study DG MARE. Port Tech Clusters).
[56] See EIF.org for specific Fund of Fund reporting on underlying funds.

Table 10. Strengths and Weaknesses – focused fund with geographical information

Strengths	Weaknesses
Would enable focused operations of fund manager	Would be considered unfair by Blue Economy participants not located in the targeted area (if some geographies not included)
Would allow and closer proximity and greater support to investees through direct presence and clusters.	Would not allow support of other existing fund managers.
Geographies / locations targeted could evolve over time.	Could become a competitive force to other fund managers (only if the market gaps have not been identified).
Investment instruments would be focused on specific needs of the stage targeted.	

5.2 Umbrella Structures

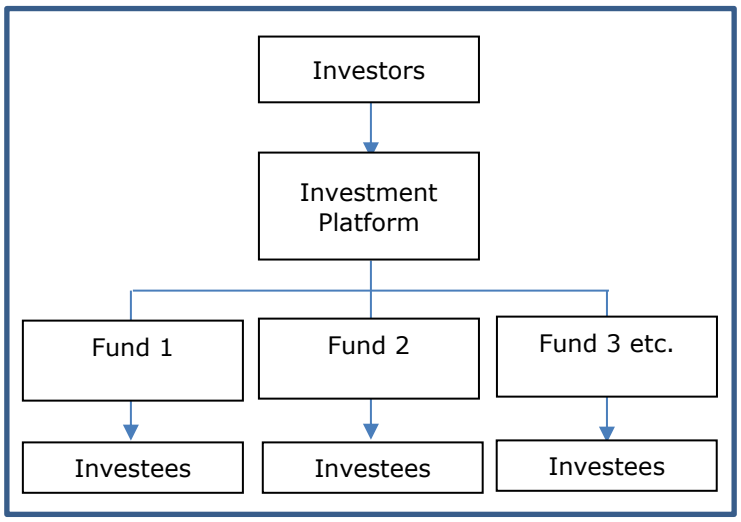
5.2.1 Blue Economy Fund of funds

Description – a fund of funds is an umbrella structure that would invest into existing funds that target the Blue Economy and could also be used to invest into new funds that are established. It would cover the full Blue Economy sector and would be able to support funds with the strategies considered to be most relevant to achieving the investors' goals.

Catalysing innovation requires a long-term strategy with mandates and priorities that will develop over time, with subsequent variation of financing terms and conditions as a result. A financing structure needs to reflect these considerations. A fund of funds may be an adequate structure to deploy capital accordingly. A fund of funds can have a single tranche of finance or blend together different tranches of seniority. It would typically be of interest to investors seeking exposure to the Blue Economy opportunities with a well-diversified risk. All investor categories could be interested in this. An example of a similar structure is the Pan-European Venture Capital Fund-of-Funds. In fact, this is a common structure in a number of developed and developing economies where government funding of equity positions is intermediated. Further examples internationally include the NZ Venture Investment Fund, Korea Investment Corporation, Fondo de Fondos in Mexico, SIDBI in India, Inovar in Brazil. The UK Green Investment Bank also created a Fund of Funds vehicle for disaggregated and difficult markets culminating in 12 FoF investments

The Fund of Funds could allow first come first served basis for the existing market, but it could also combine this strategy with specific calls for geographic, sector or stage fund managers to be procured to fill a specific investment gap or needs (such as underdeveloped but promising sectors e.g. aquaculture, or a geography that shows common sector and stage orientation e.g. a Nordic Blue Economy Fund).

Figure 19. Fund of funds



Source: Project team, own considerations

Table 11. Strengths and Weaknesses – Fund of funds

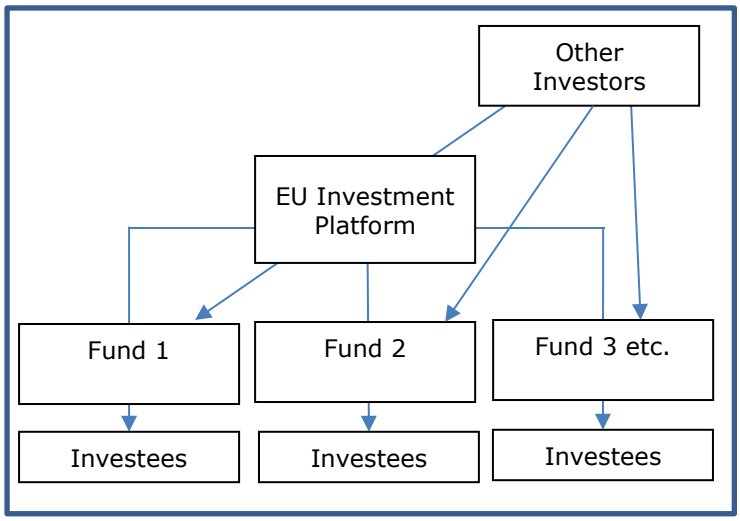
Strengths	Weaknesses
Enables full coverage of the Blue Economy	Introduces an additional layer of cost
Strengthens the activities of existing fund managers by providing additional funds	Requires sufficiently large base funding to justify multiple fund allocations
Provides selective diversification by investing into most promising investment strategies	
Ensures that each niche is addressed by a fund manager with specialist skills	
Allows start-up fund managers targeting strategic niches to be encouraged.	
Enables boosting of Blue Economy activities of more generalist fund managers.	
Allows blended finance approach to be deployed more easily for public and private investors	
Can support different instruments such as debt, equity, guarantees according to needs of targeted niche.	

5.2.2 Virtual Blue Economy Fund of funds

Description – a virtual fund of funds structure accomplishes a similar end result to the fund of funds structure above but achieves leverage of the EU financial resources that are committed on a fund-by-fund basis instead of through a single vehicle. The EU Investment platform gathers together financial resources from EU institutions such as relevant DGs, EFSI, EIF etc. The funds collected in this 'EU BEIP' are then on-invested into specific funds on condition that each recipient fund manager succeeds in raising a certain minimum amount (for example 30-50%) from other public and private sources. This creates a virtual fund-of-funds by ensuring that money from a range of sources is blended at the level of each supported investment fund without the need to establish a dedicated fund of fund structure. This in turn means that this particular structure could have attractive cost characteristics. This principle was utilised in part in the recent

creation of the SME Fund of Funding vehicle of the Public Investment Fund (Sovereign Wealth Fund) of Saudi Arabia.[57]

Figure 20. Virtual Blue Economy Fund of funds



Source: Project team, own considerations

Table 12. Strengths and Weaknesses - Virtual Blue Economy Fund of funds

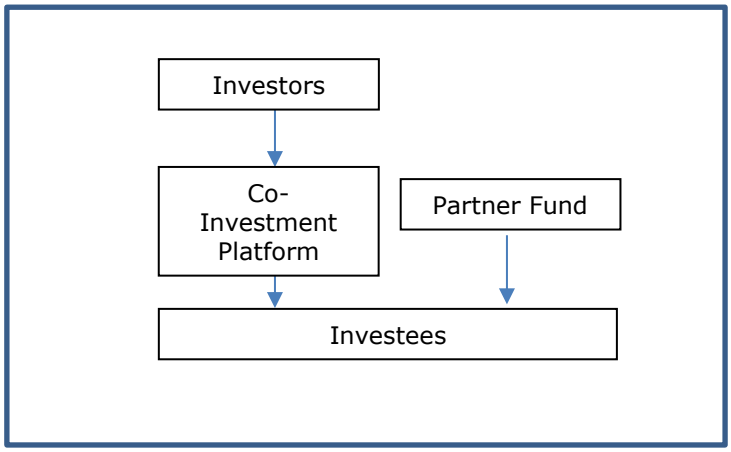
Strengths	Weaknesses
Enables full coverage of the Blue Economy	Requires sufficiently large base funding to justify multiple fund allocations
Strengthens the activities of existing fund managers by providing additional funds	Matching funds need to be raised on a case by case basis.
Provides selective diversification by investing into most promising investment strategies	
Ensures that each niche is addressed by a fund manager with specialist skills	
Allows start-up fund managers targeting strategic niches to be encouraged.	
Enables boosting of Blue Economy activities of more generalist fund managers.	
Allows blended finance approach to be deployed more easily for public and private investors	
Can support different instruments such as debt, equity, guarantees according to needs of targeted niche.	
Fundraising is effectively delegated to each recipient fund manager	

[57] The Saudi Exmaple cited above is in set up stage, but was partly based on the Mexican Model (Fonda de Fondas, which has made numerous successful investments. The Fund of Funds firm is an investment firm specializing in private equity funds. During the first 10 years of existence they have been the driving force, not only in Mexico but Latin America, behind productive investment to support the development and competitiveness of small and medium enterprises. They have numerous Fund of Fund vehicles, similar to the EIF structure, and have deployed a capital close to $1bn.

5.3 Co-investment vehicle

Description – a co-investment vehicle is designed to deploy funds as a co-investor alongside other investor. It is therefore a direct investor but does not have the same deal sourcing and structuring ability as other investors. It can therefore be operated on a lower budget but is dependent on being able to identify and add value to deals led by other investors. An example of this structure is the Coparion Equity Fund that invests in young technology-oriented companies as a co-investment fund together with private-sector lead investors at the same commercial conditions (pari passu).

Figure 21. Co-investment



Source: Project team, own considerations

Table 13. Strengths and Weaknesses – Co-investment

Strengths	Weaknesses
Inexpensive way to deploy funds	Dependent on other investors for leads
Neutral in terms of being able to co-invest with any eligible investor	

A co-investment function can easily be built into a fund of funds structure and is indeed a regular feature of fund of funds that seek to differentiate their services from other plain-vanilla fund of funds managers.

5.4 Associated Structures

Alongside the main financial vehicle, there are several features that could usefully be incorporated into the BEIP. These would strengthen and add value to the core functionality of the platform by addressing risks and by improving the outreach and impact of the overall initiative.

Any associated structures would need to be financed separately to the main investment vehicle. The fees derived from the management of the fund itself could not be used to cover costs of any associated structures. It would be simplest if the presence (or not) of these features was decided prior to the establishment of the BEIP, but they could also be subject to further evaluation and discussion with the selected manager of the BEIP and implemented at a later stage. The availability of funding to cover costs would be a key determining factor in timing of the implementation of each element.

5.4.1 Technical assistance facility

There is a clear role for a technical assistance facility in the BEIP structure. A technical assistance facility would be funded by grants and would be applied to strengthening the underlying companies to which the BEIP provided capital (indirectly) and could also be used to strengthen the efforts of the fund managers supported by the BEIP. It would therefore have a positive effect on the risk of the underlying portfolio by addressing weaknesses in end recipients of funds as well as strengthening the capabilities of fund managers selected by the BEIP to operate in the Blue Economy. An example is the

Technical Cooperation Funds Programme of the European Bank of Reconstruction and Development. Other examples include the TA facility of the Green Climate Fund and numerous TA support mechanisms accounted for under Official Development Assistance programmes of Donors who are DAC members of the OECD, such as SEFA, RECP, ACEF, AREF, SCAF etc

Activities of the Technical Assistance Facility could be:

- Support to companies in preparing investment cases to provide to investors.
- Support to companies in identified areas of weaknesses
- Support to fund managers needing additional skills to address unfamiliar Blue Economy sectors.

One existing source of TA is the European Investment Advisory Hub (EIAH or the Hub) - a partnership between the European Investment Bank Group and the European Commission as part of the Investment Plan for Europe. The Hub is designed to act as a single access point to various types of advisory and technical assistance services. It supports the identification, preparation and development of investment projects across the European Union. Its advisers work directly with companies to prepare a tailor-made advisory package to support your projects. Services via the Hub include project development support throughout all project stages, as well as upstream or policy advice. Financial advice is also provided to enhance companies' ability to access adequate sources of financing. The proposed TA Facility could be designed to be complementary to the EIAH, for example, by focusing on capacity building for fund managers aiming to make Blue Economy sector investments or directly supporting strengthening exercises for Blue Economy investees in the post investment phase.

5.4.2 Match-making structure

The BEIP could consider including a match-making facility which would have a general aim of stimulating interactions between sources of capital and companies that need access to capital. An example is the European Investment Project Portal. It could include activities such as:

- Compiling a database of investors
- Active registration and / or selection of companies seeking finance.
- Presentation of business plans
- Active matchmaking and transaction advice

The above activity would not be compatible with the BEIP if it is structured as a fund but would be compatible if it is structured as a fund of funds. An infrastructure for holding Matchmaking sessions was tested by the project team (see Annex 5 for more information).

For example, the Blueinvest events run by the Commission and the study team or the subsidiary programme 'Financing Catalyst' within the EU Africa RECP programme inter alia provides this service to Investors and Renewable Energy project developers across the African continent.

5.4.3 Shareholder Engagement

The role of institutional investors as major shareholders in larger companies is crucial. As in previous successful examples (human rights, weapons, tobacco, and the wider sustainability agenda) they have influence in the board room and can (eventually) have their shares speak and require corporates to be more pro-active in supporting SME-led innovation in the Blue Economy. Shareholder engagement can also positively influence engagement on non-financial objectives.

An additional element of the platform could be to provide resources for shareholders, or their professional associations, wishing to engage companies on Blue / sustainable issues. These resources could include general industry information, sustainability information such as that provided by Fish Tracker, toolkits on how to exert influence as an active shareholder and practical guidance on how corporates can support innovation.

Following our interaction with the leading Dutch association of institutional investors (VBDO), they are considering the Blue Economy as one of their priorities for next year's campaign.

6 Recommended Structure(s)

6.1 The Investment Platform

In the evaluation of the different available structures against the needs of the market, the strongest performing structural option is the Blue Economy Umbrella Fund structure. One particular strengths of this structure is that it would allow the support of wider focus funds that focus on commonalities between Blue Economy sectors as well as funds that focus on niches requiring more specialist sector and / or investment knowledge. The umbrella fund could be brought to life as a classical fund of funds structure, or the virtual fund of funds structure, according to the implementation partner identified. For example, the virtual fund of funds structure would better fit the requirements of public bodies such as the EIF Innovfin platform.

This recommendation is made on the basis of the observed market need. Additional considerations may also need to be included, including the constraints faced by DG MARE in how it is able to deploy the funds that it has available. These considerations might require adjustments to the structures proposed here at a more detailed level or might invalidate certain options.

The Umbrella Fund structure would be able to invest in each of the structures presented in sections 5.1.1 to 5.1.4 and 5.3 according to the recommendations of the manager of the Fund of Funds and the decisions of its Investment Committee. Subject to any constraints imposed by the Commission, for example in terms of eligible sectors, stages or geographies, the Fund of Funds would also be able to consider other structures, including hybrids or other variants of the above options on a case by case basis. The allocation of the funds that are raised for the Fund of Funds would be subject to an investment strategy to be agreed with the manager. It is therefore a powerful and flexible way of ensuring that funding reaches both the most promising recipients as well as areas that the Commission judges to be most in need of additional funding.

In the event that a Fund of Funds structure was found not to be a suitable structure for DG MARE to support, a secondary recommendation would be to provide funding to another option such as a dedicated finance platform structure (such as 5.1.1 to 5.1.4) or a co-investment vehicle (5.3).

These alternative structures have the strengths and weaknesses as outlined in the relevant sections above and would also have the capacity to deliver a strong boost to the European Blue Economy and improve the supply of finance to innovative growth companies. They would also normally be managed by independent managers with the principal differences being the removal of one layer of intermediation and a corresponding reduction in the ability to apply funds in a targeted way. Options 5.1.1 and 5.3 would retain the feature of providing broad support to the Blue Economy whereas selecting one of the other options would result in a sectoral, geographic or stage preference.

6.2 Amount of Funding to be Mobilized

There are today over 100 relevant actors deploying capital into parts of the Blue Economy out of which around 30 fund managers. Total Capital available is EUR 10bn with EUR 2,5bn being via fund managers. The fund managers have funds ranging between EUR 25m EUR 1bn in size. The larger funds are deployed mainly into other sectors with a limited portion going to the Blue Economy.

The amounts to be invested into end recipients by the supported funds would typically be between EUR 2m and 15m with an average size somewhere below the middle of this range due to a likely larger number of smaller companies requiring investment, probably around EUR4-6m. A typical investment fund making 10-12 investments would therefore be approximately EUR 50 – EUR 100m in size. If the fund of fund structure was to support 10 funds of average EUR 75m in size and provide 25% of the capital, this would give a fund of funds size of approximately EUR 180m.

6.3 Additional Features of the BEIP

The core activity of the BEIP will be to deploy capital to businesses active in the Blue Economy. However, it is also recommended that the BEIP includes other features that will enhance its relevance, reduce the risk of the investments made and facilitate growth of Blue Economy businesses in general.

Specifically, efforts should be made to build the following features into the BEIP:

Technical Assistance – an associated technical assistance facility should be included in the scope of the BEIP.

Advocacy – a grant-funded advocacy function could add value in a sector that still requires much strengthening in terms of regulations and overall business dynamics (including the balance between profit and impact).

- Advocacy to institutional investors to engage them in shareholder voting such as at one point with anti-arms, child labour and similar, and recently with sustainable business (SDGs – good health and well-being (3), clean water and sanitation (6), affordable and clean energy (7), industry, innovation and infrastructure (9), responsible consumption and production (12), climate action (13), life below water (14).
- Advocacy to corporates to illustrate that their license to operate in this society is informed by their pro-active attitude towards sustainable blue growth, and just by meeting minimum requirements set by the International Maritime Organisation (IMO). As the Blue Economy is a truly global sector, this needs to be on EU or even UN scale to maintain level playing field.

The fund manager should be encouraged to build connections with professionally managed clusters, accelerators and marine hubs, which are likely to be the best sources for deals and for co-investment, and therefore to help build the pipeline of projects. This could entail a call for proposals that would share costs of accelerator programmes for blue ventures that will feed the BEIP. Accelerator programmes are more likely to connect start-up companies to markets, which is crucial for their sustainability. This can provide valuable experience for the BEIP.

To reduce the incentives for the fund manager to neglect smaller projects, the BEIP could allow bundling of small projects of similar nature into a security that can be purchased by large investors (and eventually traded in a secondary market).

The BEIP should consider de-risking solutions for private investors through which public resources in the investment platform are leveraged by using first or second loss guarantees to cover idiosyncratic risks that are specific to the different sectors of the blue economy. Blue firms and their investors are less likely to find hedging opportunities in the market to protect from these risks.

The BEIP could also provide critical information to other EU initiatives that can support innovative blue firms, such as challenge grants for research and development to create public goods that address specific marine challenges faced by blue firms supported by the BEIP. We stress, however, that we do not foresee that the BEIP should be responsible for these other initiatives.

7 Next Steps

The work done to date has not included consideration of the strategic, legal or structural aspects of a possible fund of fund structure. Detailed terms of reference should be drawn up in order to solicit bids for a professional fund manager to establish and manage the selected BEIP.

A classical evaluation process of the received bids could then be carried out, followed by discussions and negotiations with the preferred candidate. Once a preferred candidate has been selected, investment documentation would be prepared (led by the selected candidate) and used to launch a fundraising effort.

The promising dialogue that has been established with EIF should be pursued in parallel to the above. The EIF has expressed an interest in utilising the Innovfin platform to create a Blue Economy sector oriented fund of funds structure.

As outlined in the document, we believe that a strong case exists for investing additional capital into the Blue Economy. The market review that was carried out provides information on the size of the investment gap, and the investment dossiers provide ample evidence of the vibrant business environment and the number of innovative businesses in the various Blue Economy sectors.

The case for investing in the sector would be further strengthened by adding in further information as follows:

- **Review of listed companies:** compiling a list of companies operating in the Blue Economy sectors that are already quoted on European stock exchanges and carrying out a simple analysis of the market values would provide ample evidence of the capacity of the sector to support business activity. Case studies of some of these businesses that have followed a classical innovative business growth trajectory would complement the investment dossiers. If these same businesses had produced good returns for their investors, these would be particularly powerful. A filter would need to be applied to ensure that the businesses highlighted also satisfy blue growth objectives, but this should be straightforward. This analysis could be fortified with a review of M&A and Private Equity activity across the Blue Economy sectors, such as the recent Middle Eastern Sovereign Wealth fund activity in aquaculture investment.
- **Review of exits achieved in the Blue Economy:** A review of successes already achieved by investors in the Blue Economy would also be a powerful complement to the Investment Dossiers. This would best be done by addressing the fund manager community and seeking out case studies of companies in which they have invested, and which have subsequently been successfully sold on. The fund managers would normally be pleased to support this kind of work because, in the case of successful exits, it would provide them with positive coverage.

Annex 1 – Landscape for a New Investment Platform – Blue Economy Investors[58]

	Source	Relevance for blue economy	Type of actor								Type of financing				
Name	CASE / Acacia	Relevance	Bank	Bank (public	Investmen	Investme	Accelerat	Crowdfundi	EU financial	Other	Gra	Cred	Equ	Guarante	Year
500 Startups	Acacia	Medium			1								1		2010
8F Investment Partners	ICF	High			1								1		2016
Ace Management France	Acacia	High			1								1		1998
Alimentos Ventures	Acacia	High					1						1		2016
Aloe Private Equity	Acacia	Medium			1								1		2003
Althelia Ecosphere (part of Mirova and Natixis)	Acacia	low			1							1	1		2011
AMA Capital Partners	Acacia / CASE	Medium	1									1	1		1987
Aquaspark	Acacia	High			1								1		2013
A-Spark	Acacia	Low			1								1		2005
Baillie Gifford & Company	Acacia	Low			1							1	1		1908
BGK	Acacia	Low		1								1			1924
BGK Mid-Cap Investment Platform	CASE	Low				1					1	1			1924
Blue Economy Fund	Acacia / CASE	High						1			1	1	1		2017
Blue Ocean Capital	Acacia / CASE	Medium			1								1		2005
Bonafide	Acacia	High			1								1		2009
bpifrance	ICF	Medium		1							1	1		1	2012
British Business Bank	Acacia	Low		1							1	1			2014
Brookfield Investment Management	Acacia	Low			1								1		1989
CAP TRI IN NORD-PAS DE CALAIS	CASE	Low							1				1		
Catch Invest	CASE	High			1							1	1		2017
Caisse des Dépots	Acacia	Low		1								1	1	1	1816
CDP Climate Change Risk Sharing Investment	CASE	Medium				1						1		1	2016
CDP IP Mid-caps	CASE	Low				1						1			
Circularity Capital	Acacia / CASE	Medium			1								1		2015
CIT Group	CASE	Low			1							1	1		2002
Clarmondial AG	CASE	Low			1									1	2016
Clearwater Marine Investments	Acacia / CASE	Medium			1								1		2002
Connecting Europe Facility	CASE	Low							1						
Continental Advisory Services	Acacia / CASE	Low				1						1	1		2002
Coparion Equity Fund	CASE	Medium			1								1		2016
Copenhagen Infrastructure Partners	Acacia / CASE	low			1								1		2012
COSME	CASE	Low			1							1	1	1	2014
Cowen	Acacia / CASE	Medium		1								1	1		1918
CRX Markets	CASE	Low				1				Trading platform		1	1		2012
Devonian Capital	Acacia	High			1							1	1		2017
Diorama Hellenic Growth Fund	CASE	Medium			1								1		2015
Ekosea	ICF	High						1							2015
Elbe Financial Solutions	Acacia / CASE	High			1								1		
Elite Basket Bond 1	CASE	Medium				1						1			2018
Encourage Capital	CASE	High			1								1		2014
Ernst Russ	Acacia / CASE	High			1							1	1		1985
Eurofin Group	Acacia / CASE	High	1									1	1		1984
European Agricultural Fund for Rural	CASE	Low							1						
European Business Network	Acacia	Low							1						
European Maritime and Fisheries Fund	ICF	High							1		1		1	1	2014
European Social Fund		Low							1						
European Regional Development Fund	CASE	Medium							1		1	1	1	1	1975
FOND-ICO Global	CASE	Low			1							1			2016
Fortitude Capital, LLC	ICF	Low			1							1	1		
Fonds SPI – Sociétés de projets industriels*	CASE	Low		1								1	1		
FornyBar AS (new Norwegian Green	Acacia	Medium		1											
French Overseas Territories (RUP) Infrastructur	CASE	Low		1								1			
Global Maritime Investment Fund II	Acacia / CASE	Medium			1								1		2010
Green Climate Fund	CASE	Low								1		1	1		2010
Green Investment Group (Macquarie)	Acacia / CASE	low	1									1	1		2012
Green Metropole Fund	CASE	High				1						1	1		2017
Green Shipping Loan Programme	ICF	High							1			1			2016
Green Shipping Guarantee Programme	ICF	High							1					1	2016
Greenbackers Investment Capital	Acacia	Low			1								1		
GreenBridge	Acacia	Low			1										2012
Growth Equity Fund Mid-caps	CASE	Medium							1				1		1996
Het Limburgs Energie Fonds	CASE	Medium		1								1	1		2013
InnovFin Energy Demo Projects Pilot	ICF	High							1		1		1	1	2014
InnovFin Large Projects	ICF	Low							1						
InnovFin MidCap Growth Finance	ICF	Low							1						
InnovFin MidCap Guarantee	ICF	High							1					1	2014
InnovFin SME Guarantee (InnovFin SME and	ICF	High							1					1	2014
InnovFin SME Venture Capital (Horizon 2020)	ICF	High							1				1		2014
International Finance Corporation	Acacia	Low		1								1	1		1956
IPSA Maritime	Acacia / CASE	High			1								1		2012
Italia Venture I Fund	CASE	Medium		1									1		2015
ITATECH	CASE	Medium				1							1		2016
Katapult Ocean	ICF	High					1						1		2018
KfW Ipex-Bank	Acacia / CASE	Low		1								1	1	1	2008
KredEx	Acacia	Low		1							1	1		1	2001
Kreditech	CASE	Low	1									1			2012
Marine Capital Ltd.	CASE	Medium			1								1		2003
Maritime Asset Partners	Acacia / CASE	Medium			1							1			2017
Maritime Equity Partners	Acacia / CASE	Medium			1								1		2009
Maritime Investment Fund	Acacia / CASE	Medium			1								1		2010
Masdar	CASE	Low			1							1	1		2006
Meloy Fund for Sustainable Community Fisherie	CASE	High			1							1			2016
Mermaid Investment	ICF	High			1								1		2017
MTBS	CASE	Low								1					2005
Mubadala Investment Company	Acacia	Medium		1									1		2017
Multi-Country Investment Platform for SMEs Sec	CASE	Low				1									
Nantes Atlanpole	Acacia	Low					1			Science Park/ Incubator.					2015
Neptune	CASE	High					1				1	1	1		2015
NER 300	ICF	High							1		1				2013
New Enterprise Associates	Acacia	Medium			1								1		1977
Nordic Investment Bank	Acacia	Medium		1								1		1	1975
Northern Shipping Fund	Acacia	High			1							1	1		2008
Ocean Solutions Accelerator	CASE	High					1						1		2015
Oceano Azul	Acacia	High					1						1		2015
PMV	Acacia	Medium			1							1	1	1	1995
Port XL	CASE	High					1					1	1		2015
ProVenture	CASE	Medium			1								1		2007
Rotherdam Port Fund	Acacia	High			1								1		2016
Scottish Enterprise	Acacia	Low		1								1	1		1991
Scottish Equity Partners	Acacia	Medium			1								1		2000
Scottish Investment Bank	Acacia	Medium		1								1	1		1991
Scottish Investment Fund	Acacia	Low		1											
Seabury Capital	Acacia / CASE	Low			1								1		1996
Seedrs	CASE	Low						1					1		2009
Sky Ocean Ventures	ICF	High			1								1		2017
Strategic Banking Corporation of Ireland	Acacia	Medium		1								1			2014
Swedbank	Acacia	Low	1									1	1	1	2006
Televentures	Acacia	Low			1								1		1993
The Yield Lab	Acacia	Medium					1						1		2014
Triodos Bank	ICF	High	1									1	1		1980
Scottish-European Growth Co-Investment	ICF	Medium							1				1		2017
Baltic innovation fund	ICF	Medium							1				1		2012
Innoenergy	ICF	High								1			1		2008
ABN AMRO	Acacia	High	1									1	1		1991
Rabobank	Acacia	High	1									1	1		1972
ASN Bank	ICF	High	1									1	1		1960

[58] The complete table is available in Annex.

Annex 2 – Investment Platform Recommendations: Funding gaps

The database of 678 investment projects was divided along three dimensions: size, age, and sector. Table 1 presents description of data (categories do not sum to 678 because of missing data points).

Table 14. Investment projects by size, age, and sector

Companies		Number of Companies
Size	Micro enterprises[59]	56
	SMEs[60]	78
	Large enterprises, groups[61]	20
	Others[62]	25
Age[63]	Less than 3 years in operation or not yet established	67
	More than 3 years in operation	188
Sector	Bioeconomy	99
	Renewable energy	110
	Transport and shipbuilding	73
	Others	89

As the next step, investment projects for which data on financing needed and sales was available were selected. Table 2 below presents the average, median, and range of financing needed among blue economy companies compared with their sales (by size, age, and sector).

Keeping the disaggregation by size, age, and sector, available data were used to calculate the financing to sales ratio (expressed as percentage) to assess the financing standing and requirements of these projects (see Table 3 below).

Large blue enterprises seem to require much less financing (57% of annual sales) than micro blue enterprises (357% of annual sales) or blue SMEs (273% of annual sales). This confirms the well known finding that financing constraints are more binding to MSMEs. Established blue companies also seem to require relatively less financing than young companies (226% of annual sales vs. 373% of annual sales). This suggests that financial market failures are more binding for micro enterprises and SMEs, as well as for young companies, pointing that the forthcoming investment platform should place a strong emphasis in these segments.

Since the database does not have information about the type of "Financing needed" required by the project sponsors (i.e., equity, debt, or even grants), we cannot make direct comparisons with existing benchmarks of financing gaps since these typically use debt financing measures. Still, we can expect that most of projects would not be financially viable without a significant portion of external equity financing, considering that the financing-to-sales ratios are well above standard debt-to-sales ratios.[64]

We have also used additional qualitative data on the type of investment (available for 64 projects) and data on investors and shareholders (available for 44 projects), which we present in the last column of Table 16. From an analysis of this small sample, it seems that companies of all sizes and sectors and from both age groups use grants and subsidies in their financing mix. Those instruments are sourced from EU institutions (e.g. the SME Instrument under H2020), governments (e.g. the French Environment

[59] Includes the following data labels: individual entrepreneur, micro enterprise, micro-sized business.
[60] Includes the following data labels: small enterprise, SME.
[61] Includes the following data labels: large enterprise, group of enterprises.
[62] Includes the following data labels: higher education/university, research center + company, other.
[63] In absence of data about the month of establishment for many entries, we included companies established in 2015 in the category "Less than 3 years in operation or not yet established".
[64] For example, World Bank Group (2017a) found that average debt-to-sale ratios in developed economies range from 25%-34% for young micro enterprises to 19%-32% for mature large enterprises.

and Energy Management Agency), and non-governmental organizations (e.g. Stavros Niarchos Foundation). In addition, micro enterprises and young companies also make use of seed funds, and the capital of founders, friends and family, while larger and more established companies make more use of debt. Most categories of companies also use (or would be open to) venture capital or other types of private equity.

Several remarks are in order. First, we do not consider the sample to be representative of the universe of EU blue firms, so we cannot make overall conclusions about the financing or investment gaps in the EU blue economy. This sample could be representative of the sub-universe of blue firms or sponsors that are planning to invest and could be seeking external financing, which may still be relevant for the forthcoming EU-sponsored investment platform for the blue economy. However, the sample size is small since most sponsors of the investment project ideas did not provide the necessary information, and therefore these conclusions need to be taken with caution.

Second, the database of investment projects does not include any data on potential profitability and therefore does not allow us to assess the economic viability of the projects. We cannot rule out that a substantial share of these investment projects are not economically viable.

Table 15. Financing needed and sales (1),(2)

	Financing needed – average (€ million)	Financing needed – median (€ million)	Financing needed – range (€ million)	Number of companies with data on financing needed available	Sales – average (€ million)	Number of companies with data on sales available
Size						
Micro enterprises	2.6	1.2	0.1 - 20	24	1.2	8
SMEs	25.9	6.25	0 - 350	40	23.7	17
Large enterprises, groups	208.3	112	0.07 - 1000	7	13.6	3
Others	373.6	276	6.7 - 2,197	15	N/A	0
Age						
Less than 3 years in operation or not yet established	12.9	1	0.07 - 150	14	1.5	6
More than 3 years in operation	46.8	5	0.05 - 1000	57	21.8	19
Sector						
Bioeconomy	7.5	2.9	0.04 - 35	40	24	15
Renewable energy	112.5	8.65	0.5 - 130	24	21	1
Transport and shipbuilding	219.8	28.25	0.07 - 2,197	26	36.65	7
Others	79.5	11	0.07 - 1000	26	0.6	5
Total	**92.1**	**7.1**	**0 - 2,197**	**117**	**22.2**	**28**

Notes:

When only a range of values was provided, we use the mid-point value.

In cases of investment projects that have not yet been established, we use the projected sales.

Table 16. Projects by the ratio of financing needed to sales and the structure of financing

	Financing needed/sales (%) (1)	Number of companies with data on both financing needed and sales available	Structure of financing
			Size
Micro enterprises	357%	7	Grants and subsidies (government, UE – e.g. Climate-KIC (EIT), SME Instrument (H2020), NGO), private equity, venture capital, seed fund, FFF, founders
SMEs	273%	14	Bank loans, venture capital, equity, PPP, grants and subsidies (EU - e.g. EASME, SME Instrument (H2020))
Large enterprises, groups	57%	2	Grants and subsidies (e.g. EIB, French Environment and Energy Management Agency (ADEME)), equity, debt
Others	N/A	0	Grants and subsidies (e.g. FP7-OCEAN-2013), PPP
			Age
Less than 3 years in operation or not yet established	373%	3	Grants and subsidies, private equity, FFF, founders
More than 3 years in operation	226%	16	Private equity, venture capital, PPP, grants and subsidies, equity, debt
			Sector
Bioeconomy	308%	13	Loan, equity, grants and subsidies (e.g. SME Instrument (H2020)), founders, business angels
Renewable energy	484%	1	Grants and subsidies (e.g. EIB, French Environment and Energy Management Agency (ADEME)), venture capital
Transport and shipbuilding	78%	5	PPP, equity, grants and subsidies (e.g. SME Instrument (H2020)), venture capital, loans
Others	388%	4	Grants and subsidies, private equity, venture capital
Total	**280%**	**23**	**-**

Notes:

The result is not a quotient of entries in columns 2 and 3. Instead, due to low availability of data, it is an average of quotients at the level of individual companies.

Annex 3 – Summary Organised Workshops and Events

Paris

BlueInvest Paris - May 3, 2018:

Event Review

BlueInvest Paris - or, Investir dans l'Economie Bleue - was a half-day event organised by Ocean Assets Institute with co-sponsors European Commission - DG MARE, Norton Rose Fulbright (host), French Maritime Cluster and Armateurs de France. Over 70 delegates attended the invitation-only event. Even train strikes did not prevent us from achieving our desired audience. Delegates were financiers (both institutional and private investors), entrepreneurs, maritime leaders and policy-makers. While the seminar was entirely in French, we welcomed delegates from across Europe as well. Our generous hostess, Christine Ezcutari of Norton Rose Fulbright, opened the seminar and moderated the first panel. A luncheon buffet, sponsored by Metis Gmbh (lead partner on the EC Blue Economy BEIP), concluded the event and provided ample time for networking among the high-level audience.

Industry Panel: Where are the Opportunities?

Bernhard Friess, Director, DG MARE, shared results of a 10-year data series on the Blue Economy and his vision for the EC's Blue Economy BEIP led by his group. The President of the French Maritime Cluster described the strategies for renovation and innovation across all of the maritime sectors. CEO of Louis Dreyfus Armateurs, gave insights into the new challenges facing ship owners, from sustainability to global competition. The Manager of France Filiere Peche, described the seafood value chain and the opportunities, as well as risks, for investors. Questions from the audience stressed the need for French and EU public investment to support maritime innovators on a massive scale in order to successful compete on a global basis.

Finance Panel: How to Access the Opportunities?

Moderator: I was pleased to lead this panel of financiers active in Blue Economy investments. A Research Analyst from Kepler Cheuvreux, shared conclusions from his pioneering report on sustainable maritime investment: A Deep Dive into the Blue Economy. Investment Director at Ace Management, described his firm's investment approach in the maritime sectors first dedicated private equity fund. The Founder of Ekosea, gave an exciting presentation on the opportunities for early-stage investment with his platform connecting investors with maritime innovators. Questions from the audience affirmed the need for blended capital approaches (public, private, venture, lending, grants, etc.) to help enterprises of all stages succeed in the Blue Economy.

Innovation Panel: Who are the Maritime Leaders of Tomorrow?

Moderator: Eric Marty, Partner - Venture Capital, Demeter Partners

The CEO of Algaia, described his company's achievements since 2014 and vision for the future where algae is the source for food, medicines, cosmetics and energy. The Manager of Sabella, shared its solutions for clean offshore power generated by waves and currents under the sea. The CEO of OFW Ships, presented his Blue Gold business: extracting, filtering, bottling and distributing fresh water from the ocean to a world facing acute water shortages. The CEO of SerEnMar, gave us an inside view of the changing Blue Economy and what his company is doing to meet the need for optimal fleet management, the CEO, Advanced Aerodynamic Vessels, showed how his company's designs will cut workboat fuel consumption in half while doubling their speed. The CEO, Geoflex, described his improvements to global navigation satellite with enhanced positioning in real time - with growing demand from sea and land-based markets.

Cardiff

Event review: Cardiff Matchmaking and networking, June 5th 2018

In Cardiff, on June 5th, we organized a matchmaking event where entrepreneurs, non-profits, public sector and financiers could meet to network around the theme of financing innovation in the Blue Economy.

The ambiance of the Volvo Ocean and the content of the Oceans Summit provided strong support in marketing the events in Cardiff and The Hague, but it seemed that the time available to prepare the event in Cardiff was probably a bit short, and that in particular for financiers the location of Cardiff may have created an extra hurdle.

Prior to the Matchmaking session there was a panel discussion on ocean plastic. This panel put particular emphasis on stimulating philanthropic investment, convincing industry to use less plastic and using publicity generated by sporting events to highlight environmental issues. Unlike our impact assessment for single use plastic which focused on reducing plastic in the ocean, the panel also considered the impact on carbon emissions generated during the production of plastic from feedstock.

We had invited a long list of potential participants from the various databases, such as the pipeline database and the networks of the members of the Blue Invest team. Participants were encouraged to pre-register with a company profile and to invite other participants for 'speed-dates' of 20-minute sessions to make an initial contact, and a subsequent networking opportunity with drinks and snacks.

The event was hosted by the Volvo Ocean Race, who had kindly offered the meeting venue of the Ocean Summit, in the Volvo Ocean Race village, and its facilities.

Around 25 people participated. Several interesting and relevant companies, all SMEs, attended and this led to informative conversations with these companies. It also gave the Blue Invest team and the EC a flavour of the business activity that our work connects with.

The limited number of financiers may partly be the reflection of the fact that innovation by SMEs in the Blue Economy yet needs to gain momentum of many commercial and impact investors.

The relatively informal atmosphere allowed some interesting conversations with:

1. the Irish W1DA company who build environmentally friendly boats from sustainable material powered by an electric motor charged by the sun and wind.
2. the Fishyfilament enterprise from Cornwall who recycle nylon fishing nets into filament that can feed 3-d printers.
3. Greenseas Resources Ltd, a seaweed producer from West Wales who are looking to expand the market for the seaweed that is gathered from the Pembrokeshire coast beyond the traditional laverbread.
4. Natural Resources Ltd who are in an advanced stage of negotiations with clients for their biodegradable bottles made from pulp paper which is supported by the EU's eco-innovation initiative.
5. Planetcare from Ljubljana who have developed filters to remove the microfibres from washing machine outlets that make their way to marine sediments. The filters would need to be changed every 20 washes.
6. Morlais Marine Energy who are working on consenting procedures for a £4.5 million tidal energy demonstration project off the coast of Anglesea. £4.2 million of this comes from the European Regional Development Fund.

These are all in our project pipeline.

There were a number of questions as to whether the EU could help in ways other than investment. This included:

1. standards or energy labels for recycling or washing machines. The large companies can develop their own but smaller companies cannot

2. data for consenting procedures- particularly on marine life
3. tax advantages for environmentally-friendly leisure boats

The Hague

Event review: The Hague Matchmaking and networking and panel session on Blue Invest, June 28th 2018

In The Hague, on June 28th, we had organized two sessions in the context of the final étappe of the Volvo Ocean Race:

Matchmaking event

During the morning we had organized a matchmaking event where entrepreneurs, non-profits, public sector and financiers could meet to network around the theme of financing innovation in the Blue Economy.

Similar to our event in Cardiff, we had invited participants from the pipeline database and the networks of the members of the Blue Invest team. A total of 51 participants had pre-registered with a company profile and had invited other participants for 'speed-dates' of 20-minute sessions to make an initial contact, and a subsequent networking opportunity with drinks and snacks. The sessions started at 10.00 and the last session ended 12.30, when the event was closed with lunch.

The venue was the Zuiderstrandtheater in Scheveningen and was hosted by the Volvo Ocean Race, who had kindly offered the meeting venue of the Ocean Summit, in the Volvo Ocean Race village, and its facilities.

Companies, financiers and non-profits enjoyed a lively morning session with exchanges of ideas and networking opportunities.

As we had sufficient time to prepare and given the central location of Scheveningen (The Hague) attendance was good and participants expressed their satisfaction that meetings had met their expectations, and that networking had been very productive.

Afternoon – panel session on Blue Invest during The Ocean Summit The Hague

During the 2017-18 Volvo Ocean Race, a series of Ocean Summits have been organised at a range of stopovers as a key part of the Volvo Ocean Race sustainability programme. The seven Ocean Summits are bringing together the worlds of sport, industry, government, science and ocean advocates, to showcase innovative solutions and offer a platform for new announcements to combat the global crisis of ocean plastic pollution.

"The Future of the Ocean" was the grand finale of the series, organized by Volvo Ocean Race and the Dutch Topsector Water & Maritime. The purpose was to bring together work with inspired people and organisations developing workable solutions to the plastic crisis, ocean health and zero emission shipping. Throughout the program, speakers inspired delegates to explore solutions to the problem of climate change, empowering them to examine alternative strategies and realise ocean-inspired innovations and make use of ocean resources in a sustainable way.

The Volvo Ocean Race 2017-8 sustainability campaign is focused on ocean health. Our mission is to help "Turn the Tide" on the critical problem of the rapidly growing amount of plastic pollution in the oceans. Dutch Topsector Water & Maritime works on water challenges with a mission to increase prosperity. Teams from Dutch industry, science and government, provide support for innovative entrepreneurs.

We were invited to organize a panel session on Blue Invest, which was quickly sold out with around 100 registered participants.

The session consisted of concise introductions by entrepreneurs and financiers, highlighting their views on what is available and what is needed in terms of financing for more Innovation in the Blue Economy. Presentations were made by:

1. Tocardo. Tidal energy; www.tocardo.com; The Netherlands.

2. ABN AMRO; The Netherlands.
3. Ocean Assets Institute. Sustainable investment research on seafood, shipping, ocean energy; www.oceanassets.org.
4. Edorado. Eelectric powered speed boat; www.edoradomarine.com; The Netherlands.
5. Katapult Ocean. Blue economy impact investor, www.katapultocean.com; Norway.
6. Oxeanpedia. Device to reduce bycatch oxeanpedia.de /en; Germany.
7. Sea Ranger Services - http://www.searangers.org/en/; the world's first maritime ranger service; The Netherlands.
8. European Commission, DG MARE

The introductions were followed by a lively discussion with the audience.

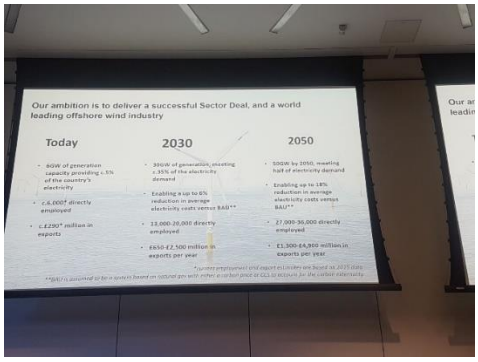
A farewell reception concluded the day.

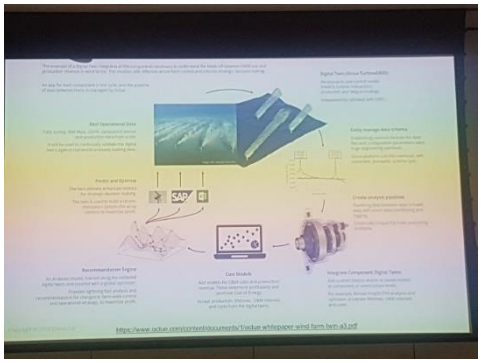
Annex 4 – Summary of Events Attended by the Project Team

Event 1 - Offshore Wind conference hosted by Offshore Renewable Energy Catapult (previously called Innovate UK) and Scottish Renewables

January 29 and 30th

Glasgow Strathclyde University Technical Innovation Centre





Key takeaways

- Offshore Wind continues to be a growing market and is expected to generate significant economic activity in Europe as a consequence, especially in the UK
- Cost reductions in the industry in terms of LCOE has been staggering in the last couple of years and it now is the most promising large scale renewable energy source
- Northern European sea conditions are ideal for large scale innovation development (deep waters close to shore)
- Future of the market – key market innovations for investors to watch out for:

Short term

1. Data analytics - sophisticated data analysis and presentation layers to assist O&M, generation predictions etc., including digital twin models using combining up to date operational data with component digital prediction models
2. Remote monitoring devices (monitoring robotics)

Medium Term

1. Ferrit magnet generators – as the chase for rare earth metals continues and is dominated by Chinese players, other OEMs will focus on more cost effective ferrit magnet generators
2. Artificial intelligence – advanced robotics enabling self-service turbines, automated repair and inspection

Long Term

1. Floating wind: deployment above 5GW will lead to significant cost reductions as tech goes global
2. Airborne Wind energy systems: Kites and non-fixed wings – multi rotor, or large vertical axis could radically change market beyond 2030

Face to face meetings

Pipeline development:

1. ORE Catapult have agreed to share and chat through their past and future investible pipeline of SMEs. I will be making contact early next week to pursue. ORE Catapult is the UK's technology innovation and research centre for advancing wind, wave and tidal energy. They aim to reduce the cost of offshore renewable energy and with industry and academia to develop and introduce new technologies and ways of working to reduce risk and cost and deliver business growth. They have a number of world-leading test and demonstration facilities and an engineering and research team They also facilitate access to industry and funders, to develop, de-risk and support the journey of bringing new technologies to market, on behalf of SMEs
2. Scottish renewables – representative body of Scottish Renewables industry players. Have agreed to chat further but probably won't deliver pipeline that additional to ORE as they are focused across industry and less so on SMEs
3. Interesting companies
   - Octue – digital twin data platform for offshore industry Cambridge based, early beta phase no current need for financing
   - Windcat workboats – Dutch firm which might need above $50 million to replace fleet of offshore service vessels. Financing opportunity
   - Limpet – electronic hoist innovation – no current need for financing but might need support and financing in 6-12 months for international expansion after launch in UK

- Ecosse subsea systems – drenching and trenching innovation – no need for financing but possible need in 12 months after international launch of subsea mechanical trench innovation
- Flintstone – small floating link innovation – no current need for financing but after launch might require for international expansion
- Manor renewables – full service O&M contractor – future financing for fleet required (contract dependent)

Event 2: Danish Maritime Days / Opening Oceans Conference, COPENHAGEN 2-3 MAY 2018

The Danish Maritime Days are a trade fair for shipping companies and other marine and maritime business. This general trade fair represented a few companies, SMEs mostly, around waste water management and cleaning of exhaust gases ('scrubbing') with products and services to enable the shipping sector to comply with regulations from the international Maritime Organization (IMO). Innovations displayed were often improvements of existing products and not particularly innovative or ground breaking for the maritime sustainability agenda.

When asked the larger companies were aware of innovations around the theme of maritime sustainability, but much of that seemed still to be in the pre-commercial incubation phase, or yet driven by corporate social responsibility instead of direct commercial interest.

Opening Oceans Conference

Parallel to the trade fair was the Opening Oceans Conference. This event has a rather general business focus, to help maritime and ocean industry players realise the unique business potential of the ocean space. We participated in a think-tank session on the financing of innovation. It was very interesting to see the focus on the innovations required for a sustainable development of the oceans, and the need for strategic alliances and access to investment capital. Most of the innovative companies presenting were SMEs, and part were start-ups or pre-earnings companies. Next to waste management and shipping related solutions, various initiatives on sustainable sea farming were present.

We made contacts with two incubators including Start up wharf which generated the digital maritime Start-up that was shared in our network, and we sourced a couple of interesting companies for our pipeline.

Event 3 – Oceanology – http://www.oceanologyinternational.com/ **Event 4 - Global Seafood Expo** – https://www.seafoodexpo.com/global/

Event 5 - Opening Oceans – NorShipping – http://nor-shipping.com/opening-oceans/

Event 6 - European Fisheries Forum – https://www.sustainablefish.org/Programs/Industry-Partnerships/Events/European-Fisheries-Forum-2018

Event 7 – Ocean B2B (https://oceanbtob-2018.b2match.io/)

Feb 8, Bretagne

- Organised by Pole Mer Bretagne Atlantique link. Good info on both of these links.
- Pole Mer has members from all maritime sectors plus finance.
- Funding and tech support for new and established companies.
- We met several companies worth adding to our universe - digital/tech and marine energy.
- Also met some of the major bankers to maritime sectors.

- H2020 was pitching their funding program for SMEs - sounds good but requires min 2 companies operating as partners for project. That's not feasible for most SMEs so we have an opening there. But very active bankers and PE firms in France maritime, plus regional funding, means that best opportunities will not need finance.
- Update: We got 2 final projects from this event: Foil & Co, SeaProven. Plus several that did not make it to final group but passed eligibility screen and are in Metis dbase.

Annex 5 – Blueinvest B2Match Platform

The project team purchased a license for the B2Match platform and use the software to create an event management system for the Cardiff and Hague events.

The team also developed a marketing database of over 2000 individual senior players in the investment market who currently have an interest or a potential interest in the Blue Economy Investment Sector.

Through a targeted email campaign in conjunction with a third party digital firm the team marketed the two events using the mail database and the B2Match software to rapidly create a side events to the Volvo Ocean race events where investors and businesses could interact in a rapid speed dating type environment.

The electronic infrastructure used for these events is now available to the Commission for further exploitation.

A screenshot of the website is presented below:

Annex 6 – Review of Relevant Blue Economy Literature

See separate document – Blue Economy Project Documentation Summary

Annex 7 – Notes on Visit to EIB / EIF

Meetings with European Investment Bank and European Investment Fund

Luxembourg 11th and 12th April 2018

Project Team Meeting Notes

Martin Poulsen and Gregor Paterson-Jones went to the EIB offices in Luxembourg to present the Blue Economy project to EIB. Meetings with a wide range of EIB and EIF staff. Additional meetings with some of the teams were set up following the main presentation.

Blue Economy Project Objectives – the project team gave a detailed presentation of the Blue Economy project. The main deliverables are i) a set of investment dossiers which provide examples of successful Blue Economy businesses and ii) a proposal for the structure of an investment platform. The project runs until the end of July. The team explained that few explicit constraints had been given to the team by the Commission and that the findings would be totally driven by what is learned through the team's activities. In terms of scale of targeted initiatives, the team confirmed that big infrastructure was not included in the scope of the project.

Objectives of Meetings with EIB Group – the team's objectives from the meetings were to learn about EIB's prior activities in the Blue Economy sector, understand its objectives and obtain expert guidance relating to the project objectives. The team explained that at the current stage of the project it was too early to present specific companies or conclusions but offered to return to Luxembourg to present these at a later date.

Blue Economy Focus – the thematic area of the Blue Economy was confirmed as a good fit with the objectives of the EIB Group, particularly where there was a strong environmental or social impact. The Blue Economy theme has support at a senior level within EIB, including from VP Taylor. Although it was understood that there are no explicit 'Blue Economy' objectives for the EIB Group, it was noted that EIB Group has been active in Blue Economy lending and investment for many years. This has not necessarily been under and explicit Blue Economy support objective, but has come about as a result of, for example, supporting renewable energy in the offshore wind sector, in fisheries and in shipping. EIF was expected to have a similar situation and in addition some investments might not be recorded as part of the Blue Economy sector. For example, a shipping tech innovation might be treated as an IT investment as opposed to a Blue Economy investment.

Existing portfolio – the project team learned that the EIB Group has both a direct and indirect portfolio of investments and loans in the Blue Economy sector. EIB has been a major supporter of the development of the offshore wind industry, and EIF has financed many SMEs that are active in the Blue Economy through its portfolio of fund investments. Several notes have been compiled over time to summarise the Bank's activities in the Blue Economy. Notes describing the Bank's circular economy work have also been compiled in the past.

Note on Blue Economy Categorisation – portfolio analysis is somewhat hampered because the Blue Economy is not recorded as a specific investment sector, so for proper analysis it would require a current and historic addition and categorisation evaluation to accurately assess the exact level of Blue Economy activity. At the European Commission level, the same is true. A good example is Agri Funding. It was previously thought that very little funding was provided for Agricultural Sector investments as the figures were directly sourced from budget allocations, but there actually a reasonable number of investments through Horizon, Cosme etc. – in fact more so than in DG Agri.. The opposite is also true. The learnings are therefore relevant for current activity but also for setting up a new fund – even though it might appear that there exists funding for a

specific area (say fishing – EMFF) eligibility might exclude such a large percentage of real investment opportunities that a funding gap still exists.

Grants vs Investment – there was a good discussion around grants vs investment capital. The team clarified that investment platforms could include a separate purely grant-funded element (a technical assistance facility). In addition, it is possible to include a grant or first-loss piece within a fund to provide protection to more risk-averse investors, although caution was advised regarding different risk tranches in an investment structure as this has been problematic or simply not practical in the past. The EIB showed interest in accessing pools of concessional or grant money to bolster current initiatives already undertaken (FI Compass, EIAH), but rather as a dedicated pool of TA money that specifically incorporated into a fund commercial fund structure.

Debt versus Equity, large versus small

The EIB focusses mainly on large debt transactions. Even in higher risk operations benefitting from the EFSI guarantee, the equity operations are intermediated. There was discussion around the current group of projects being evaluated and their financing needs. Some would most likely fit better with EIB lending activities and others would be closer to EIF in terms of size and stage. The team learned that the EIF has, for the first time through its Fund if Fund operations initiated a 4th pillar of investment operations sourcing private sector pension and insurance company money into a Fund of Fund, which could act as a template for the Blue Economy project (if a FoF is the recommended BEIP structure).

EFSI – EFSI operations have included some 'Blue Economy' investments but which were not recorded as such and have fallen under the Energy Efficiency designation included in the Act, for example the funding by the REIB (guaranteed by EFSI) for the building an energy efficient fleet by a large shipping company. The EFSI guarantee has not yet supported any specific Maritime BEIP. EFSI 2.0 will likely start to see more directly Blue Economy Investments given that now Agri and Bioeconomy are included sectors, which were previously not supported.

Summary of Input Provided

A wide range of helpful suggestions were made during the discussions:

Compiling the Investment Dossiers

- Everyone agreed that concrete examples of strong Blue Economy companies would be very interesting to review. The importance of seeing example of successful fundraises and exits in the sector was also highlighted.
- The team was encouraged to develop a clear summary of the selected companies by sector and geography, to be able to better profile the selected set of companies.

The Blue Economy Investment Platform

- The diversity of the sectors included in the Blue Economy was discussed at length. The team noted that it may not be appropriate to propose a sector-wide investment platform.
- An investment platform with geographical focus is worth considering due to differences in identified financing gaps on a regional basis.
- Overall the depth of dealflow in the Blue Economy was questioned and further proof of this would help to strengthen the case for dedicated Blue Economy investment initiatives. The possibility of close association with existing initiatives in related sectors could be a solution to this issue.
- Regarding technical assistance, the team was encouraged to bear in mind that intermediaries may also be valid recipients of technical assistance, not just end beneficiaries.
- There was a long discussion around additionality, and this was taken on board by the project team. One of the drivers of the investment platform design will indeed

be perceived gaps in the funding market for Blue Economy companies. Also, ensuring that fund managers actually need public money was also recommended.

- The team was reminded to make sure that it takes good note of other relevant programmes, including those that are being developed by other Directorates. Developing a clear USP for this initiative to make it distinctive was also recommended. A comparable initiative by DG RTD / DG Agri targeting the bio-economy with a first loss tranche of EUR100m was mentioned by way of example.
- The possible role of guarantees should also not be forgotten (e.g. Innovfin, COSME guarantee programme)
- Retaining a relatively simple structure was recommended. The example of a complex tranched fund with mixed results (the Broadband fund) was cited as a case in point of too much complexity.
- As the investment platform might include some money from the Commission, the team was advised to check any restrictions that might apply as a result of using Commission funds.
- Maintaining a strong focus on the ESG elements was also felt to be important by those present.
- Access to the EIB pipeline was offered and would be a good way of building connections between fund managers and the EIB group.
- It was agreed that, in order to succeed, the BEIP would need to be formatted in a way that would suit public sector investors.
- The possibility of further supporting the Blue Economy sector via a co-investment platform should be further investigated.

Conclusions

There was general enthusiasm to see more funds mobilised for the sector in all the discussions that the team held. It was apparent, however, that the BEIP would need careful design in order to address the range of issues raised during our discussions. Despite its size, the Blue Economy as a sector contains much diversity and an over simplistic approach to providing additional funding would probably fail.

Next Steps – various immediate follow-up points (see actions below) were identified through which the project could both benefit from EIB input and also develop in a way that would be compatible with EIB objectives. In terms of further contact, the team was invited to return to Luxembourg to make a presentation of companies that are included in the final stage of the project as well as to discuss the investment platform proposal of the team.

Specific Actions

- **Existing portfolio** – follow up directly with relevant EIB and EIF team members to obtain further information regarding the existing portfolio
- **Companies included in 2017 EIB Bioeconomy Financing Report** – these have already been made available to the Commission team. Details to be requested from the Commission. If not available, the EIB team would provide.
- **Blue Economy activity summaries** – team to request copies of the internal documentation that has been drawn up to summarise the bank's Blue Economy activity to try to better understand how much has already been done.

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