



Scottish Enterprise

Port Investment Models for Offshore Wind

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1 Executive summary

BACKGROUND

- 1.1 The Scottish Government (“SG”) aims to generate 50% of Scotland’s overall energy consumption from renewable sources by 2030 and has set a target of net zero emissions by 2045. It sees offshore wind as having a key role in achieving against these targets.
- 1.2 Crown Estate Scotland (“CES”) plays an important role in this process and in June 2020 it launched ScotWind Leasing, the first round of seabed leasing in Scotland for over a decade. This process will make 15 new sites available which could be developed for offshore wind.
- 1.3 That process was paused in February 2021 while CES evaluated the impact from the results of the Crown Estate’s Leasing Round 4 for projects off England and Wales. In that process, developers collectively bid over £880m in annual option payments for 6 sites with a total expected capacity of nearly 8GW. However, the ScotWind process has now restarted¹ with several changes, including a revision to the maximum option fee payable by bidders, which will now be £100,000/km².
- 1.4 CES recently published a report looking at net zero opportunities for Scottish ports and in particular at the offshore wind sector opportunity². Scottish Enterprise (“SE”), Highlands and Islands Enterprise (“HIE”) and Transport Scotland worked with CES in the development of the report, the detailed research for which was carried out by Arup.
- 1.5 The conclusion was that while Scotland already has a strong and thriving ports sector, there are various steps that could be taken to maximise the future potential of Scottish ports to host the major offshore wind projects which are expected to come to Scotland.
- 1.6 The recommendations of the report include:
 - Scotland should collectively aim to increase large port capacity that is suitable for marshalling and assembly activities, acting as a key enabling action for growth of domestic manufacturing;
 - Support strategic port planning for offshore wind; and
 - Encourage development of optimal O&M facilities.
- 1.7 To help take forward the first recommendation above, SE believes it is important to examine and explore potential financing and funding approaches for new port capacity for offshore wind requirements.
- 1.8 SE has therefore appointed QMPF LLP (“we” or “QMPF”) to undertake this study on behalf of CES, HIE and SE (together the “Client Group”). It will be used to prompt discussion between ports, the offshore wind sector and investors on how necessary investment can be structured.

¹ [Crown Estate Scotland completes ScotWind Leasing review | News, media releases & opinion | Media centre | Crown Estate Scotland](#)

² <https://www.crownestatescotland.com/media-and-notice/news-media-releases-opinion/new-research-on-net-zero-opportunities-for-scotlands-ports>

1.9 In undertaking this study, QMPF has:

- Conducted desktop research of other examples of investments into port, or similar, infrastructure; and
- Conducted a market engagement exercise with ports, offshore wind developers and investors, and other infrastructure/real estate investors. The aim of this was to understand the views, key concerns and previous experience of investment in port infrastructure to support offshore wind projects.

1.10 Examples of previous investments and projects are shown in Section 3 and the key messages from the market engagement exercise are summarised in Section 4 of this report.

1.11 Section 5 summarises potential investment structures and mechanisms to facilitate this investment. This summary is considered in the specific context of the structures and constraints under which Scottish ports and offshore wind developers operate, further details of which are outlined in Section 2.

PORT FUNDING MODELS AND FACILITATION

1.12 While there is likely to be an opportunity for private capital to invest in port infrastructure, the right source and type of capital may need to be found for different projects. As an example, ports support the offshore wind sector in several different ways: in the fabrication and manufacture of components such as blades and foundations; in the marshalling and assembly of assets before they are taken offshore to be installed; and in the ongoing operations and maintenance of offshore wind farms after they are built. As the requirements of the port facilities are different for each of these, offshore wind projects may use multiple different ports during their lifetime.

1.13 There are prior examples of investment into port infrastructure to support the offshore wind sector both in Scotland, the wider UK and further afield. Some of these examples provide useful reference points for the source of investment and how it was facilitated.

1.14 Ports themselves may be able to invest in their own facilities but the disparate nature of the port sector (comprising Trust Ports, Local Authority owned ports, and private ports) means that they may have to look to different funding mechanisms to make the necessary investment. This is further compounded by the fact that in some cases the required investment may be significant in the context of the port's wider financial position.

1.15 For example, a £10m investment, similar to that made by Forth Ports (with net assets of c. £452m) at the Port of Dundee to support the construction of the Neart na Gaoithe ("NnG") wind farm would be a very different proposition for a smaller Trust Port such as the Port of Cromarty Firth (with net assets of £27m). In the latter case, it is likely that the port would need to bring in external financing to supplement its own resources.

1.16 While there are numerous different structures that could be employed to support the investment of private capital, they are likely to follow one of a few different models, including:

- **Direct balance sheet investment** – Ports could make an investment into their own infrastructure using their own balance sheets, although their ability to do this will be dependent on their individual circumstances and financial position. Larger private sector ports which may be part

of larger groups, e.g. Forth Ports, Peel Ports, or Global Energy Group (which owns Port of Nigg), or Local Authority owned ports may be at an advantage here by being able to draw on their wider revenues stronger financial position.

- **Direct borrowing / leverage** – As well as using their own balance sheets, port operators may be able to raise leverage specifically related the assets they are developing. This leverage could take a number of forms, including bank loans or bonds. Typically, such leverage would either be secured on the assets themselves or on the revenues which they generate, and so lenders would need to be comfortable in the underlying value of the investment. Again, borrowers with larger balance sheets or stronger financial positions may be at an advantage to smaller ports or those with weaker financial standing. In addition, ports which do not operate on a private sector basis, such as Trust Ports, may have a more cautious approach to raising external finance and thus naturally limit this route.
- **Leases** – Leases could be a mechanism to provide ports with revenue visibility upon which they can make investments. The lease could provide a lease premium or upfront payment or be used as a means of raising external finance to finance investment.
- **Equipment / Asset finance** – Specific asset backed finance could be used as part of a wider funding package to finance, for example, specialist equipment which is needed by a particular tenant. An example of this could be equipment needed within a fabrication facility, which is bespoke to that application. Ports or offshore wind developers themselves may be unlikely to want to own this equipment so obtaining it on an asset finance/rental model may be an efficient way of bringing in other private capital to fund the wider development.

1.17 However, despite the opportunities presented by the ScotWind process there are still some significant risks which may pose barriers to private sector investment and may make investment in certain types of project more attractive than others. These risks include, among other things:

- **Programme visibility and wider pipeline** – The investment required in some ports may be substantial and similar to other infrastructure investments may require long periods (potentially up to 30 or 40 years) to make a return, being capital intensive. Therefore, an important consideration for commercial investors is understanding the project pipeline, including the timing of it, so they can see a long term market for their investment.
- **Timing** – Port investment is inevitably needed near the commencement of offshore windfarm contracts. However, as with most infrastructure projects, these need to be taken through relatively lengthy design, planning (consent) and delivery stages which can take considerable time. Advancing funds before contract award is both risky and uncertain in terms of outcome – projects could be delayed beyond anticipated timelines or not happen at all. It may be difficult or impossible for ports to take these risks.
- **Offshore wind project economics** – In addition to the payback period noted above for port investment, offshore wind project developers also need to consider the economics of their project and how this is impacted by the ports they use. Developers will be looking for the most likely cost-effective approach to using ports and may be reluctant to commit capital early in the process. This is especially true of those seeking to bid for a contract for difference (“CfD”) as such costs may have a direct bearing on the price they are able to bid.
- **Contract length and security of revenues** – As noted above, lease revenues can be important to port operators in order to secure revenues from their investments. Construction activities for individual offshore wind projects can be relatively short (circa two to three years) when

compared to the payback period of the investment. This short term visibility and associated risk of replacement can make securing the necessary investment capital very challenging.

1.18 Feedback from the market engagement exercise indicated that in many cases investment into the facilities required for operations and maintenance (“O&M”) activities would potentially be easier than investments centred around marshalling/construction or manufacturing. This is because O&M activities are usually backed by long-term contracts, providing a long-term revenue stream to support the investment.

1.19 It will therefore be important to address these risks in order to facilitate the investment of private capital into Scottish ports. Some of that could come from the private sector, for example diversifying any investment so that it could also attract revenues from other sectors, such as oil and gas decommissioning. However, given the potentially specialist nature of some of the investment associated with fabrication and marshalling, it may also be appropriate for some of this facilitation to come from the public sector, for example via:

- **Strategic planning** – As noted above a lack of programme or market visibility can be a barrier to investment. This could be, for example, from a lack of visibility in future schemes being brought to market or uncertainty into what associated infrastructure will be needed. Mechanisms for helping address this risk could include, inter alia:
 - **Programme visibility** – e.g. making clear to the market, to the extent possible, what the requirements and opportunities might be for offshore wind projects after those that will be delivered by the ScotWind process.
 - **Pooled investment** – e.g. a centralised development funding pool (which could potentially be provided by the private sector) which ports could access to develop their own investment plans to be ready for commercial investment at the appropriate time.
 - **Linkage to the ScotWind process** – e.g. explicitly linking an element of the premium payments which developers will need to make to be successful in the ScotWind process to upgrades and investment in port infrastructure (noting that CES’s intention is to return funds to the “Scottish Government for public sector spending to drive green recovery and help deliver Government priorities”³). This may help create confidence from developers that the necessary investments required for their projects will be in place and also give them more confidence over their cost bases and ability to be competitive in the CfD auctions.
- **Credit enhancement** – providing some form of credit enhancement could make investment more attractive to private sector investors. This need not necessarily be through the provision of aid and could be on a commercial basis, e.g. similar to the UK Government’s infrastructure guarantee scheme.

³ <https://www.crownstatescotland.com/media-and-notice/news-media-releases-opinion/crown-estate-scotland-completes-scotwind-leasing-review>

- **Other facilitation** – e.g. provision of gap funding to complement any private sector investment or provision of tax benefits or incentives, such as those which might accrue to port operators and tenants through a green port structure.

2 Background

2.1 In undertaking this study, QMPF has considered investment from numerous sources, including ports themselves and also offshore wind developers and other infrastructure investors. This section of the report provides some context and background to each, which is relevant to the subsequent discussion around potential financing routes.

SCOTTISH PORTS

2.2 As noted above, there is an opportunity for Scottish ports to take further advantage of the opportunity around offshore wind, which is likely to be delivered through the ScotWind process. However, to do this, ports may need to make significant investments to ensure their facilities are able to service the requirements for the construction and maintenance of these projects.

2.3 Different ports will have their own individual circumstances and the financing structures they are able to employ to do this could vary on a case-by-case basis. This could be driven by the type of service they are looking to provide (e.g. construction facilities, manufacturing facilities or operations and maintenance (“O&M”) facilities – further details of this are considered at paragraph 4.3); their ownership structure and their wider financial position.

2.4 To some extent, the ownership structure and financial position are intertwined. There are three main types of port ownership in Scotland, which are outlined below together with some considerations on potential financing routes below:

- **Trust Ports** – These are independent ports which are governed by their own local legislation and are run by boards which manage the assets of the trust for the benefit of stakeholders. They operate in a commercial manner, with no direct public funding. However, there are no shareholders and profits are re-invested in the port.

Trust Ports can be funded from a variety of sources, including from their own reserves; borrowing from commercial sources; entering into joint ventures and also from accessing publicly provided support such as loans from the public sector.

However, their ability to raise private sector capital (such as debt finance) may be constrained due to the fact that they may lack the balance sheet strength or diversified operations that some private or local authority owned ports may have. An example of this is the Port of Cromarty Firth, which is further detailed in a case study at paragraph 3.16.

However, Trust Ports and Local Authority-owned ports may be able to look beyond the purely financial metrics of investment and look to the wider benefits that it may bring for their wider stakeholders. For example, this could include local job creation or wider economic benefits, which in turn could attract further investment.

- **Private Ports** – Privately owned ports operate as completely private entities and are often part of bigger groups. Examples include Port of Nigg (owned by Global Energy Group), Port of Dundee (owned by Forth Ports) and Hunterston Port and Resource Centre (owned by Peel Ports). As private businesses, these ports are owned by shareholders and will often have fewer restrictions on how they can operate.

They will also usually be less restricted in the sources of financing that they can use and may be able to use their wider balance sheets to take a more strategic view of investment. For example, Forth Ports was able to use its balance sheet (as at December 2019 it had net assets of £452m) to undertake a £10m investment in its facilities ahead of undertaking work on the NnG offshore wind farm (which is further detailed in a case study at paragraph 3.8).

On the other hand, since they are commercial organisations, their decision making may be mainly driven by financial returns and they may lack the wider investment criteria that Trust Ports and Local Authority Owned Ports may have. Therefore, while raising capital may be easier than for Trust Ports, the ability to demonstrate sound investment metrics will be key in their decision to invest capital.

- **Local Authority Owned Ports** – These ports are managed in varying ways but are usually accountable through a board of elected local councillors. In 2016, The Local Authority Regulations (Scotland) 2016 set out significant borrowing powers for local authorities to lend to harbour authorities which are wholly or partially situated within the area of the local authority which is making the borrowing.

The Local Authority (Capital Finance and Accounting) (Scotland) Regulations 2016 sets out the purposes for which a Local Authority can borrow money. The Regulations allow Local Authorities to access funding from, inter alia, the Public Works Loan Board (“PWLB”), bond issues (for example, Aberdeen City Council’s £370m bond issue in 2016), private placement, or loans. This funding could therefore be used to finance port infrastructure, subject to meeting the Local Authority’s own investment criteria and the relevant lending parameters (e.g. restrictions or caps on PWLB borrowing). PWLB borrowing is low cost and flexible although there will undoubtedly be competing opportunities within the Local Authority.

Similar to a Trust Port, a Local Authority owned port may be able to look beyond purely the financial metrics of an investment and consider the wider benefits that it may deliver.

OFFSHORE WIND DEVELOPERS AND INVESTORS

- 2.5 Offshore wind developers need access to ports in order to deliver their projects. This is both to support construction activities and to support the project once it is operational. Developers have several considerations when choosing the ports to use for their projects, some of which are technical and beyond the scope of this report.
- 2.6 However, they may need to make investment into their chosen port(s) order to ensure that they are available when needed and that the facilities (e.g. required storage space, quayside length and depth, and specialist equipment) are in place.
- 2.7 As in the case for the ports themselves, developers may have differing abilities to provide this investment based on their own balance sheets and project specific economics. This may also determine the timing any investment could be made. For example, smaller developers which rely on project finance to construct their projects may not have the capacity to provide investment ahead of this project finance being secured. Conversely, developers with larger balance sheets such as Green Investment Group, which is part of the wider Macquarie Group with net assets of AUD 12bn (£6.8bn) as at March 2020, may be able to use their own capital to make earlier investments into ports.

3 Case studies

3.1 This section of the report outlines some case studies of previous investment into port infrastructure, both in Scotland and further afield. Each of the case studies considered contains private sector investment, albeit in some cases facilitated by the public sector.

3.2 Detailed case studies are shown in Appendix 1 and are summarised here.

CASE STUDY 1 – PORT OF OSTEND

3.3 The Port of Ostend is located in Belgium and entered the offshore wind sector approximately ten years ago. At the time it was an autonomous municipal company, although in 2019 became a public limited company. The initial €15m investment made to facilitate this was a strategic decision by the port to support the sector.

3.4 Investment was made into the port, including building 200m of quayside, so that it was equipped to handle newer, larger wind turbines which were starting to be installed. The first project to use the facilities once the investment was made was Thornton Bank, being developed by C-Power.

3.5 Debt financing was considered but not available for the initial investment and the port itself could not commit the whole capital. To facilitate the investment, it formed an infrastructure development company, REBO, which included the port, other private sector investors and PMV (a Flemish publicly owned investment vehicle). PMV provided 40% of the investment and sees its role as a facilitator when investment is deemed too risky purely for the private sector.

3.6 The port has subsequently been used to construct further wind farm developments, including the 478MW SeaMade offshore wind farm, and is being used to support O&M activities.

3.7 In 2019, the port operator acquired the shares held by the other partners in REBO as it considered to be sufficiently mature with stable finances.

CASE STUDY 2 – NEART NA GAOITHE OFFSHORE WIND FARM

3.8 The Neart na Gaoithe (“NnG”) wind farm, currently being constructed in the Firth of Forth utilises a number of different Scottish ports: Port of Dundee for turbine construction activities, Port of Leith for foundation installation activities, Methil for foundation fabrication and Eyemouth Harbour for O&M activities. The project is being constructed by EDF Renewables and ESB after being initially developed by Mainstream Renewable Power.

3.9 Marshalling and construction of the turbines will be performed at the Port of Dundee, owned by Forth Ports. The project team and contractor worked closely with the port to ensure that its requirements were met but the £10m+ necessary investment in the facilities, including the quayside, was made by Forth Ports. We understand that the investment being made by the port itself was an important part of the project developer’s decision to use the port.

- 3.10 The £10m+ investment in the port is a small portion of the Forth Ports' wider net asset position (as at 2019⁴ its turnover was £238.5m and net assets of £452m, including £110m of cash).
- 3.11 O&M activities for the project will be undertaken from Eyemouth Harbour, a Trust Port in the Scottish Borders council area. We understand that there were several options for the location of the O&M base for the project but that the developer selected Eyemouth based on several factors, but partly on the basis that there was limited investment required compared to other alternatives. We also understand that the port was able to secure investment from the local authority with the long term O&M contract for NnG in place. This investment covered work needed to be undertaken in the harbour, whereas the project itself met the costs of the building used for managing the project.

CASE STUDY 3 – GREEN PORT HULL

- 3.12 Green Port Hull ("GPH") was established in 2010 by Hull City Council ("HCC"), East Riding of Yorkshire Council ("ERYC") and Associated British Ports ("ABP"). Its aim was to promote investment in the renewable energy sector in the Humber region and secure long-term economic growth for the region.
- 3.13 In 2012 HCC and ERYC secured £25.7m of funding from the Regional Growth Fund. This led to the formation of the Green Port Growth Programme, which aims to support the area through initiatives such as securing inward investment and upskilling and training approximately 900 local people.
- 3.14 The establishment of GPH helped to attract Siemens and it announced an investment of £160m in a wind turbine production facility in 2014. ABP also invested £150m in the project, £74m of which was sourced via a 10 year facility from the European Investment Bank⁵. Upon completion of the works (at the point of investment envisaged to be 2017) Siemens was to enter into two 15 year leases, with an option to extend for a further 25 years, bringing further revenues.
- 3.15 It was initially envisaged that investment would be made in two sites: Alexandra Dock in Hull as a nacelle pre-assembly, project construction and logistics facility with associated offices; and Paull in East Riding as a blade manufacturing facility. The Paull site was in an enterprise zone and therefore would have been able to benefit from tax benefits, such as enhanced capital allowances. Ultimately, and for site specific reasons, investment was focussed on the Alexandra Dock site and construction was completed in 2017.

CASE STUDY 4 – PORT OF CROMARTY FIRTH

- 3.16 The Port of Cromarty Firth ("POCF") is a Trust Port and has historically operated across the renewables, oil and gas and cruise sectors. The port made a strategic decision c. five years ago to invest in facilities to support offshore renewables albeit at the time there was some uncertainty over the business model and prospects.
- 3.17 Investment to support offshore wind has come via two phases of POCF's wider investment process, with the second of these currently under construction. The first provided an additional 4.5 hectares of

⁴ <https://find-and-update.company-information.service.gov.uk/company/SC134741/filing-history>

⁵ Source – ABPA Holdings Ltd – 2014 Full Year Investor Report (<https://www.abports.co.uk/investor-relations/reports-results-and-presentations/>)

laydown area and a 154m long heavy quay. The second will provide an additional 4.5 hectares of laydown space and a 215m quay wall (with total quay length then being 372m at a minimum 12m draft).

- 3.18 External funding was required to support this investment given POCF's financial reserves position, which were not sufficient to support the investment on its own.
- 3.19 Funding for the development has been raised on a phased basis with the next phase being funded using £30m being sourced from a combination of the port's own reserves, HIE and a bank loan from Royal Bank of Scotland⁶.
- 3.20 We understand from discussion with the port's management team that it has been constrained in its ability to raise third party funding, both in duration and amount. This has primarily been driven by the relatively short term contracts it has been able to secure to support offshore wind farm construction. Structurally, the debt it has been able to raise has been secured on the assets of the port and has a ten year amortisation profile, albeit with the requirement to repay/refinance after seven years.

⁶ <https://www.scottishconstructionnow.com/article/port-of-cromarty-firth-set-for-30m-quayside-expansion>

4 Market engagement

BACKGROUND

4.1 QMPF conducted a market engagement exercise with third parties to understand their views, key concerns and previous experience of investment in port infrastructure to support offshore wind projects. Conversations were held with the following types of organisation (see Appendix 2 for a full list):

- Offshore wind project developers and investors;
- Port operators; and
- Other infrastructure/real estate investors.

4.2 Engagement was via video call with discussions lasting circa one hour. Agendas were issued in advance and at least two staff from QMPF attended each of the discussions.

4.3 While each category of participant had their own views on mechanisms for port investment, the discussions provided largely consistent feedback from each. An important aspect was distinguishing the different aspects of offshore wind projects and the associated port requirements for each:

- **Fabrication** – The construction of components for offshore wind projects, such as towers, blades, foundations, etc..
- **Construction / marshalling** – The storage and assembly of fabricated components at the quayside, ready to be transported offshore for installation.
- **O&M** – The ongoing management of the wind farm once the project has been constructed.

4.4 While individual cases may differ, Table 1 shows an indicative map between these aspects and the type of port infrastructure required.

	Factory / Specialist buildings	Specialist fabrication equipment	Quayside and lifting equipment	Land / laydown space	Water depth / dredged channels	Office buildings / warehouse	Jetties
Fabrication ⁷	✓	✓	(✓)	(✓)	(✓)		
Construction / marshalling			✓	✓	✓		
O&M						✓	✓

Table 1 - Example port investment required for different activities associated with offshore wind projects

⁷ Items in brackets are ancillary to the process of fabrication / manufacturing, but may also be required to facilitate it.

4.5 Key areas of feedback from each of the participant groups are noted below.

PROJECT DEVELOPERS AND INVESTORS

4.6 The developers with whom we spoke gave largely consistent feedback about their experiences and views of securing port investment for their projects. In particular, there was a recognition that it is important that they secure appropriate port facilities but that this must be done in a cost-effective manner to ensure that their projects remain competitive.

4.7 The relative cost base of Scottish projects was also seen by developers as being higher than some other projects elsewhere given the high transmission network charges. The overall impact being that developers are not keen to add in unnecessary costs. They also reported that they need to balance securing projects with the ability to compete in competitive CfD auctions.

4.8 Therefore, an important consideration for them is balancing how much support and certainty they can give to ports, while also minimising development costs and retaining flexibility. Developers also made the distinction noted in paragraph 4.3 regarding the aspects of offshore wind development. For most, the important considerations related to construction/marshalling and O&M. Fabrication, while still important, was less of a concern to the developers if components could be delivered to the port chosen for marshalling on a cost-effective basis.

4.9 Other important considerations for developers included:

- **Timing of investment** – There was an acceptance that making an investment to access the right port infrastructure is important but that the timing of this investment is critical. Most developers, especially those which may have more limited access to capital ahead of reaching financial close for their projects, indicated that any investment would probably need to be made once the project development process was well advanced.
- **Ensuring requirements are met** – Developers indicated that they would have specific requirements from ports for their projects, which would depend on, inter alia, what they are using the port for (e.g. construction or O&M activities) and what their particular project solution is (e.g. specific requirements from their choice of technology/suppliers, foundation types, vessel requirements, etc.). In each of the conversations held, developers indicated that they would be happy to work with ports in advance of making any investment to help ensure that these requirements were considered for any investment in the port.
- **Scheduling of investment** – While developers understand that being able to give ports more visibility over the timing of projects and the wider offshore wind programme would be helpful, several expressed the importance to them that they remain in control of their own project development timetables. Reasons for this include minimising project development spend and a desire to complete the whole development process as quickly as possible to minimise the time that capital is tied up in the project.

4.10 While not adverse to making port investments, feedback from some developers also indicated that they believed that ports should be able to see that there is a wider project pipeline and opportunity. Therefore, their view was that ports should be making investment into their own facilities in order to be best positioned to take advantage of these opportunities.

- 4.11 Any of the developers with whom we spoke considered the timing of any investment made by them to be an important consideration in which port to use (for example NnG's decision to use Port of Dundee and Eyemouth Harbour). Their view here was also driven by their own balance sheet and financial resources. For example, and as noted at paragraph 2.7 some smaller developers may be less able to access capital in advance of reaching financial close on their projects and so making a port investment prior to that can be quite difficult. Their preference therefore was that any significant outlay on their part should be made after financial close for the project.
- 4.12 While different potential investment structures were discussed, there was a clear preference for lease structures, most likely to spread costs over the years of use, but also to avoid bearing all the upfront capital cost which would be involved. This was for use of ports for both construction and O&M activities. Further details of lease structures are given at paragraph 5.8.

PORTS

- 4.13 In some regards, feedback from ports was consistent with that from project developers. They too saw the distinction between the different facilities required for different aspects of project development. Additionally, all those with whom we spoke recognised the wider potential in the market and expressed a desire to take advantage of it.
- 4.14 Having said that, they did identify several risks and barriers to investment, including:
- **Certainty and timing of project pipeline** – While the ports can see a general requirement and need for capacity to support offshore wind development, they lack visibility over the timing and duration of the project pipeline. For example, it was noted that they had visibility over existing projects and to some extent, the forthcoming ScotWind projects. However, the timing and requirements for the latter are still unknown and there is no pipeline visibility beyond this.
 - **Length of contracts (especially for construction)** – Port operators noted that contracts relating to construction activities are usually short term, often circa two to three years. In many cases this has been a barrier to investment as there is no revenue certainty for the port beyond this time horizon.
 - **General project economics** – In many cases the investment required in ports, as with many infrastructure investments, has long payback periods due to its capital intensive nature. Several of the ports with whom we spoke gave the view that the pipeline of work that they could realistically see from the offshore wind sector (especially for fabrication and construction activities) would not provide a commercial return on investment and so other funding, perhaps provided by the public sector, would be needed to facilitate the work required.
- 4.15 While participants noted that they viewed supporting offshore wind as a strategic investment in their own business and facilities, the risks and barriers noted above have made making strategic investment decisions difficult. This is especially true of smaller port operators, which may not have the wider balance sheet capacity to fund investment. However, those which are part of wider groups with stronger balance sheets have been able to use that strength to invest more speculatively in their facilities, as we have seen from, for example, Forth Ports and Green Energy Group.

4.16 Securing longer term revenue visibility was often cited as being the catalyst for being able to undertake investment in the port infrastructure, with this visibility usually coming through contracts (such as leases or contracts to use the port facilities) with developers, investors or businesses in the supply chain. With this in place (although again depending on the factors noted previously) sources of project specific investment may be easier to obtain with mechanisms for this being discussed in paragraph 5.10. Although in limited cases (and it was mentioned as a potential de-risking route) port investment can generate significant revenues from other users (e.g. cruise ships, ferries, fishing, etc), this is not likely to be the solution for most ports.

OTHER INFRASTRUCTURE AND REAL ESTATE INVESTORS

4.17 The financial investors⁸ with whom we spoke gave similar feedback to the ports and developers but added a slightly wider perspective. On the whole, they indicated that they would be open to different types of commercial structure and that this would be driven by the specific needs of individual investments and projects.

4.18 They raised similar concerns to those raised by project developers and ports insofar as they would need to build a business case based on being able to demonstrate long-term revenue streams and sufficient credit quality of those revenues.

4.19 For example, one investor with whom we spoke talked about a project they were looking at in which they would lease space from a port and use this to construct a fabrication facility which would then be on-leased to the ultimate tenant (in this case a manufacturer of wind farm components). In this transaction, the financial investor would provide the port with an ongoing income and would also provide capital for investment into the port infrastructure, albeit not specialist equipment which would be used within the fabrication facility (which they regard as having limited value to them and bespoke to the needs of the ultimate tenant).

4.20 In this example, the investor views the transaction as a property lease, i.e. one where they invest in the provision of a facility and make a return on leasing that to a tenant. However, they also cited the challenges of tenant credit quality and long-term revenue visibility.

4.21 Additionally, they see these challenges as being a “chicken and egg” scenario where prospective tenants are looking for low-cost facilities which can compete with existing factories in northern Europe. Only with this cost certainty can they actively seek new contracts which would be delivered from this facility. However, to give that low-cost certainty, the landlord needs commitment from the prospective tenant that they will commit to a long-term lease on the site.

⁸ For the purposes of this report, the term financial investor is used to mean potential investors in port infrastructure, which might not otherwise have any direct involvement or investment in the offshore wind projects or the ports themselves.

5 Potential investment structures

- 5.1 We have outlined some potential investment structures for private sector capital for port infrastructure below, together with wider considerations specific to offshore wind developments. This is based on a combination of our research, discussions with third parties (as outlined in Section 4) and wider experience from other, similar sectors.
- 5.2 The main models of investment covered include the following:
- Direct investment by the port/port owner using its own balance sheet;
 - Leases;
 - Direct borrowing/leverage by the port/port owner for the project; and
 - Equipment/asset finance.
- 5.3 These investment models need not be used in isolation, and could be used in parallel with one another, or indeed in parallel with public sector funding, as has been done for example by POCF.

INVESTMENT MODELS

Direct investment

- 5.4 An option for investment in port infrastructure is by direct on balance sheet investment by the port itself. Since this approach assumes that no external debt is raised, it may be seen as the most flexible of options, and potentially the lowest cost. However, the willingness of the port to invest in this way will depend wholly upon its ownership structure, “shareholder” return targets and approach to risk. A direct investment would not incur any specific additional financial monitoring (e.g. bank covenants or repayment of capital from income generated) and could therefore be made in anticipation of use at a future point – but therein lies the danger of a redundant investment being made, or one that costs more due to intervening maintenance costs.
- 5.5 Feedback from developers and ports indicated that there was a certain level of expectation amongst them that this funding approach would be required. Additionally, previous examples of port investment such as those outlined in Section 2 have all involved an element of investment by the ports themselves, albeit sometimes alongside external investment.
- 5.6 As noted in Section 2, the capacity for different ports to be able to provide direct investment will be dependent on several factors, including the following:
- **Source of capital** – The source of capital for ports to make direct investment will be dependent on the individual circumstances of the port and could come from reserves or from external sources. For example, a port may be able to raise capital on its balance sheet (as distinct from project specific borrowing, which is covered at paragraph 5.11) if, inter alia:
 - it is part of a wider group with other revenues;
 - has low borrowing/gearing levels; or
 - has a credit rating.

Where this is not the case and where a port is unable to lever its balance sheet, any direct investment would probably need to come from its reserves. This may impact the speed of investment if reserves are limited. Local authority owned ports may also be able to utilise other funding streams such as the Public Works Loan Board to fund investment in their assets.

- **Return requirements versus other benefits** – Individual ports will have their own required rates of return for new investment, and this will drive investment decisions for use of their own capital. In the case of private ports, the decision is likely to be purely a commercial consideration. However, as noted at paragraph 2.4, Trust Ports and Local Authority-owned ports may be able to look beyond this and consider the wider benefits of investment. For example, this could include local job creation or wider economic benefits.
- **Revenue visibility and project economics** – Paragraph 4.14 outlines some of the challenges associated with lack of revenue visibility. Making a commercial decision to invest in the port may be challenging if there is limited certainty on future revenues.

5.7 The above considerations will help determine the source and amount of capital a port is able to invest in its own assets. To the extent that any of these mean that balance sheet capacity is constrained, or inefficient as a source of capital, direct investment may need to be combined with another type of investment.

Lease

5.8 Lease structures could provide the port with important income, and perhaps capital, through which it can make investment into its facilities. Such a structure could be applicable to property transactions and could take several forms. However, in concept this could take the following form:

- Lessee (in this case likely to be the project developer or component manufacturer) uses the assets of the lessor (the port), for which it would pay a fee;
- Ownership of the assets would typically remain with the port and they would be handed back at the end of the lease term;
- The lease term could be negotiated between the parties and could be relatively short term (for example for the duration of the construction phase) or much longer (for example for O&M facilities).

5.9 Specific considerations for using leases in port transactions include cash flow visibility and the length of any agreement, especially for transactions relating to the construction period of offshore wind farms. In addition, some upfront investment may still be required in the port infrastructure to make it ready for use. For example, investment in laydown areas or quayside facilities.

5.10 This upfront investment could be funded via:

- **Upfront lease payments** – Some lessees may be able to pay an upfront premium on the lease which may help the port fund the necessary investment. However, feedback from ports and developers from our market outreach indicated that not all would be able to do this. Cash flow timing for developers and other tenants may be dependent on their own financing strategy (for

example an offshore wind developer may only be able to make such payments once it has sufficient certainty over its project, e.g. at the project's financial close).

- **Investment by the developers / tenants in specific assets** – It might be appropriate for investment in some assets associated with the usage of the port to be made by the lessee. For example, a developer may be best placed to make an investment into its own O&M facility or other specialist equipment as this will be specific to them. Feedback from ports and developers indicated that such arrangements are normal and may be structured as the developer taking a long-term lease on the land it requires and then investing in a new building or specialist equipment that it needs.
- **Investment by the port** – Entering into a lease with a project developer or other tenant may provide the port with sufficient revenue visibility to make an investment in the infrastructure itself. This might either be direct from its own balance sheet (see paragraphs 5.4 to 5.7) or via external borrowing, which is covered in the next section.

Direct borrowing / leverage

- 5.11 Distinct from using its wider balance sheet to invest in port infrastructure, a port owner may be able to raise capital using debt specifically related to the asset investment which it is making. This could take several forms, including a bank loan or bond.
- 5.12 In such situations, a lender is likely to require security over the assets or the cash flows generated by those assets to support its lending position. As noted in Section 4, revenue visibility can be quite difficult to obtain and so direct borrowing may not be possible, or if it is it may be relatively short term in nature.
- 5.13 While being secured, the borrowing could also be on one of two bases: recourse or non-recourse. In the case of recourse debt, in addition to having security over the assets, a lender would have recourse to the borrower in the event of default for repayment of the debt should the value of those assets not cover the full debt amount. However, in the case of non-recourse debt, the lender would only be able to seize the assets used as collateral and nothing else in the event of a loan default.
- 5.14 Lenders will typically only lend over the time horizon where they can see stable revenues, which in the case of large-scale port investment may be too short to allow full payback of the full capital requirement. In such circumstances, the impact for the port may be:
- The lender is unable to lend the full funding requirement and will cap the debt at a level which can be repaid with interest by contracted cash flows.
 - The tenor of the debt is shortened and while the debt may have a longer amortisation profile (e.g. 15 years), there may need to be a bullet repayment or refinancing at an earlier date (perhaps tied to the end of the contracted revenue).
 - Interest costs are higher if the lender perceives there to be extra risk or assess the borrower (in this case the project or the port) to have a higher credit risk.
- 5.15 Because of these factors, such external borrowing might be best suited to projects where long-term revenues can be demonstrated, for example long term leases associated with O&M activities for wind farms. As noted previously, these contracts often provide longer term, more stable revenue streams

than investments in infrastructure related to either construction or fabrication of wind farms or their components.

- 5.16 It is also likely that lenders in such an example would also require security, which could be on the underlying assets (e.g. the associated port infrastructure or buildings) or the cash flows generated by the investment (e.g. the lease income).
- 5.17 Nevertheless, a lender would still take a risk-based approach to assessing any project and would also be likely to consider alternative uses for the assets when determining their likely value. Paragraph 5.33 considers potential mechanisms for credit enhancement of investment and also how longer-term visibility over revenue streams may be provided.
- 5.18 As well as commercial lenders and investors, the recently formed Scottish National Investment Bank (“SNIB”)⁹ may be able to lend to port projects where these align with its missions: “supporting Scotland’s transition to net zero by 2045”; “building communities and promoting equality by 2040”; and “harnessing innovation to allow our people to flourish by 2040”. SNIB invests debt or equity in businesses and projects on commercial terms. It is not able to offer grant funding or sub-commercial investment.
- 5.19 SNIB assesses investment opportunities on an individual basis so that the financing considered is tailored to the needs of the business or project seeking its support. The involvement of SNIB may also be a facilitator of other private sector capital and be part of the wider funding package. Additionally, SNIB may also be able to take a different view on structure to other commercial investors, for example through the provision of longer term capital.
- 5.20 As a publicly funded institution, SNIB will not provide majority equity into businesses or projects. The involvement of SNIB may be a facilitator of other private sector capital in the wider funding package as it seeks to “crowd in” private funds alongside its public capital wherever it can, in order to maximise impact and accelerate investment activity in the Scottish economy as a whole.

Equipment/asset finance

- 5.21 A potential financing route for some aspects of the port investment could be equipment or asset backed finance. This was mentioned in a several of the conversations held in the market outreach and could be applicable for financing specialist equipment needed as part of a wider port upgrade. Structures for this type of finance could be similar to the lease financing outlined at paragraph 5.8 but would have other considerations.
- 5.22 A common theme in our conversations in the market outreach from all types of participants were that they would be reluctant to invest themselves in specialist equipment, for example in the machinery required in a fabrication facility. Their views were that this would often be best facilitated by the tenant and could be funded via asset financing.
- 5.23 In this scenario, the funding could be provided by a specialist investor (or perhaps even the equipment provider themselves) and ringfenced from the wider infrastructure investment. In a typical asset finance

⁹ <https://www.thebank.scot/>

scenario, the equipment would remain the property of the investor and be leased by the user. This type of finance can work well where the assets have value that can be realised from other uses. Factors that could facilitate this include, inter alia, where the assets are relatively mobile (i.e. can be moved and used elsewhere); not overly specialised (i.e. are not so specific to the initial application that means there is no second use for them) and where a liquid market for similar assets exist (giving comfort that the investor could realise the asset value).

- 5.24 The cost of such funding is made up of two elements, the interest rate and the capital write-down. The former is equivalent to the interest rate in a standard loan and will reflect factors such as the credit risk being assumed by the investor. The latter represents the value of the asset being “used” by the borrower and will be dependent on the upfront cost of the asset and the investor’s view on the residual value of the asset at the end of the finance term.
- 5.25 The considerations noted previously on revenue visibility and credit quality of the borrower are all equally applicable to the interest element of asset finance and so we do not cover them again here. However, the considerations around capital write down may be different and will be specific to the particular assets being financed.
- 5.26 In that regard, where funders can more accurately forecast residual value at the end of the finance term, they may be able to include a lower capital write down since they may not be exposed to as much residual value risk. This in turn would mean that financing costs would be lower for the borrower as they would be paying for a smaller portion of the asset’s capital write down.

FACILITATION OF INVESTMENT

- 5.27 As highlighted in Section 4, market outreach indicated that while there is likely to be private sector capital available to invest in port infrastructure, there are several hurdles which may need to be overcome to facilitate it. In some cases, this facilitation may rest with the public sector. We examine some potential forms of facilitation below.
- 5.28 Some of the examples given below may constitute a subsidy if provided by the public sector and this would need to be considered in any potential financing structure. However, this is outside of the scope of this report and should be considered on a case-by-case basis.

Programme certainty

- 5.29 Lack of visibility over the wider offshore wind programme was cited by a large proportion of those with whom we spoke as being one of the key barriers to investment. This is especially true for fabrication and construction facilities, both of which have shorter term visibility.
- 5.30 UK and Scottish Governments have previously established and managed complex infrastructure programmes. With over 15 waves of grouped projects, the English Building Schools for the Future programme is an example of a centralised programme over many years providing developers and contractors with pipeline clarity.

- 5.31 There are a number of areas where the Scottish Government and CES can assist with programme certainty. These are mainly around planning and permitting. As a minimum ensuring that commitment to delivering planning assessments in a timely manner could be closely managed to deliver more predictability of consenting timelines.
- 5.32 Further visibility on the wider programme may also benefit equipment/asset finance terms. For example, if financiers have more confidence in the long term market, and subsequent use of their assets, they may in turn have more confidence in their assessment of residual value. This may help pricing as there could be a lower capital write-down during the term of the financing.

Credit enhancement

- 5.33 A common theme from the feedback we have had from all participants in the market outreach we conducted was that in many cases, especially for investment related to construction, there is only short-term revenue visibility. This creates difficulties for investors as there is only a short time horizon during which they can be confident over their revenues.
- 5.34 A form of credit enhancement (either from the public or private sector) to cover repayments in the event that the port or project is unable to repay any investment could facilitate private sector investment. Examples include:

- **UK Guarantee Scheme (UK Government)** – This is UK Government scheme which supports private investment in infrastructure projects and is administered by the Infrastructure and Projects Authority (“IPA”). The scheme works by offering a government-backed guarantee (provided by Her Majesty’s Treasury (“HMT”) to help projects access debt finance where they have been unable to raise finance in the financial markets. At the time of writing, it has issued nine guarantees totalling £1.8 billion of bonds and loans. Examples include a £48m guarantee to support a bond to finance the Speyside Combined Heat and Power (“CHP”) plant and a £257m guarantee to support a bond to finance the Mersey Gateway Bridge PPP.

The scheme works by guaranteeing the principal and interest payments on infrastructure debt issued by the borrower (in this case likely to be the port itself) to banks or investors. It is available to “nationally significant” infrastructure projects so may be available for port investments.

In assessing a project, the IPA will consider, among other things, whether the project is financially credible.

The implications for using this scheme are that HMT will make any payments to lenders which are due for payment, but which have not been paid by the borrower. HMT charges the borrower a fee, in addition to the cost of borrowing, for making the guarantee available. In addition, the borrower will be obliged to reimburse HMT for all payments it makes under the scheme.

While the use of this scheme might not make the financing any cheaper for the borrower (since it will also need to pay fees to HMT), it may provide liquidity and a route to market since the investment would be underwritten by HMT.

- **Export credit (UK Government)¹⁰** – UK Export Finance (“UKEF”) can provide buyer credit support for buyers looking to purchase goods and services from the UK. While there are certain eligibility criteria, this may be applicable in scenarios where overseas entities are buying services from UK companies. This would need to be considered on a case by case basis and individual projects may not meet the criteria, but we include it here for completeness.

Should a buyer credit facility be available, UKEF can provide a guarantee to a bank, enabling the bank to provide competitive finance for a buyer to pay for goods and services sourced from the UK. The benefit to the exporter is that it may allow the exporter to receive payment upfront.

Other types of facility are also available, such as a bills and notes supplier credit facility where a bank can buy the receivables from the exporter, which is underpinned by a guarantee from UKEF. This means that the exporter is paid upfront with the bank being repaid by the buyer in accordance with the terms of their agreement. If such an arrangement were available to a port, it may allow it to monetise its future lease receipts (should they be from an overseas buyer) upfront, which in turn could be invested in the facilities required to support the required investment.

- **Other Bond insurance / financial guarantee structures** – Guarantees similar to those offered via the UK Guarantee Scheme can also be obtained from public and private sector partners. Assured Guaranty (“AG”) is a bond insurer based in USA but with offices in London and Paris, providing guarantees for infrastructure debt on a comparable basis to IPA. To make this approach viable, a project would typically need to involve >£50m of debt due to the legal structuring required. As an example, AG guaranteed (or “wrapped”) AUD100m of debt issued by the Port of Brisbane in Australia, in September 2018¹¹. In essence, if the borrower failed to meet debt service obligations to the underlying investors, AG would meet these obligations. Similar structures have been used in UK infrastructure projects over the last 20 years.
- **Other guarantee structures** – For example, a lease structure often described as “income strip” involves the creation of a reversionary lease which is guaranteed by an investment grade covenant (e.g. a local authority). This guarantee allows the borrower (the port in this example) to enter into a funding arrangement (often with an insurer or pension fund rather than a bank) involving an annual lease payment (generally over 15-50 years) with the payment being guaranteed by the investment grade party. If the borrower defaults on the lease payment, the guarantor must make payment. The assets generally revert to the borrower at the end of the lease, subject to satisfactory payment. This structure may be best suited for real estate investment alongside ports given the length of term generally required for the leases (as funding is generally provided by pension funds).

Strategic planning and linkage to ScotWind process

- 5.35 Feedback from developers and ports indicated that a barrier to port investment is sometimes that investment in infrastructure cannot be made in time to fit with the construction programme for the

¹⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693080/Step-by-step_guide_for_buyers.pdf

¹¹ <https://www.bloomberg.com/press-releases/2018-09-05/assured-guaranty-wraps-port-of-brisbane-bond-issuance>

project. The impact may be that a project will utilise a different, perhaps non-optimal, port for construction or fabrication.

- 5.36 A particular example given by some participants was that if ports were able to get to the position of having designs, planning and permitting complete at the point a project was able to make an investment decision that this could enormously benefit project timelines. It was noted by a few that this pre-construction work could be time consuming and often developers and ports were unable to commit funding to it early enough in the project development process.
- 5.37 Ultimately, feedback from market outreach indicated that participants saw a risk that capacity may be built in the wrong place for their projects. There was also a view that strategic planning for developing port infrastructure could help address this risk and facilitate private sector investment.
- 5.38 An example of this could be pooled funding, which could be used by ports to develop infrastructure so that it is ready for offshore wind farms as required. For example, a fund which provided ports with access to development funding (perhaps allowing them progress design work and permitting) without having to draw on their own capital could help ensure that capital investment can be made quickly once a project is able to commit to using a port.
- 5.39 Examples of where similar arrangements have been used in the past include the Scottish Government's CARES programme¹², where development loans and grants are made available to communities to support new community energy project development in Scotland. Loans can include a write-off facility, which allows development risk to be mitigated.
- 5.40 A fund of this nature could be provided by either public or private investors, but if it were the latter would need to provide a return to investors. An example of this could be that funding is provided by the private sector and is then drawn by ports to undertake development work. Options for repayment of the funding could then be that each port bears the obligation to repay the capital it has drawn or that those ports successful in obtaining contracts with offshore wind projects are responsible for repaying all funding drawn.
- 5.41 Alternatively, the funding could be provided by the public sector, perhaps from a portion of any option fees obtained from successful tenderers in the ScotWind process. As noted in paragraph 1.19, we understand that option fees will be returned to the Scottish Government to help drive green recovery and help deliver Government priorities. In this scenario there may not be a need to make a commercial return on it but the mechanism for the funding would need to be considered as part of the wider public sector support for the offshore wind sector.
- 5.42 Indeed, this was common feedback from offshore wind developers with whom we spoke during the market engagement exercise. For example, especially in light of the recent revisions to the process (outlined in paragraph 1.3), some of the developers indicated that they do not fully understand how the option payments will be used by CES and how this value to the public sector will benefit the development of the offshore wind market.

¹² <https://www.localenergy.scot/>

5.43 Directly linking these option payments to facilitate the development of port infrastructure to support the projects may provide wider benefits to the overall ScotWind process and may also be a catalyst for attracting private sector investment through some of the mechanisms discussed in this report.

Other facilitation

5.44 While programme visibility and credit enhancement could help facilitate private investment, there are also other means that could help with this, including:

- **Gap funding** – Potentially provided by the public sector, this could help facilitate wider private sector investment by filling the gap between the total funding requirement and the amount that commercial investors could fund.

It could be possible to structure gap funding in several ways, ranging from grants, to interest free loans, to subordinated funding tranches. In each case, if repayment of the gap funding were subordinated, effectively acting as a first-loss investment, it could also act as a credit enhancement for private capital.

- **Tax benefits** – Some ports and investors with whom we spoke cited that enabling Scottish ports to be cost competitive with other ports either abroad or in other parts of the UK could help support the business case for developers and component manufacturers to use their facilities, and hence provide greater investment confidence. For example, the tax benefits associated with the Scottish Government's proposed green ports (similar to the freeport structure being adopted by the UK Government) could benefit business operating within the port. While there is currently wider discussion regarding implications and benefits of adopting freeports/green ports (which is outside of the scope of this study), potential benefits for business include those relating to, inter alia:

- **Customs** – Businesses operating within freeport customs sites may receive tariff benefits, including duty deferral while the goods remain on site, and also potentially exemption from customs duty on goods that are imported into the freeport, processed and re-exported.
- **Tax** - There are several proposed tax benefits for business operating within a freeport, including stamp duty land tax relief, enhanced capital allowances, employer national insurance contribution relief and business rates relief.

Appendix 1. Case Studies

CASE STUDY 1 – PORT OF OSTEND

Brief description and history:

A1.1 Ostend is a small, multifunctional seaport in the Southern North Sea. The port is a logistic and engineering hub for both the installation and maintenance of the Belgian offshore wind farms. The other industries working out of the port include bulk cargo; roll-on roll-off and cruises; and a fishing fleet.

A1.2 The Port of Ostend entered the development of the offshore wind industry approximately ten years ago, after the development of an overall marine spatial plan for the Belgian North Sea.

Initial investment for offshore wind and public support:

A1.3 The initial investment was a strategic choice from the port itself and focussed on the development of logistics and innovation related to the offshore wind industry and maritime blue industry.

A1.4 In 2012, the Belgian wind farm, C-Power, chose to use the latest 6MW turbines and so it became important for the ports servicing the wind farm to be able to handle these heavier components.

A1.5 The Port of Ostend chose to redevelop a ferry terminal to be able to bear the 20 tons per square-metre required for the larger offshore wind turbines. The investment included building 200m of adapted heavy weight quay, ready-to-use surfaces over 10 tons/sq m, loading goods on Lift-on/Lift-off and Roll-on/Roll-off base. The heavy load quay length was then leased to C-Power for construction. Despite its initial use for offshore wind, the terminal is also equipped for decommissioning of wind turbine and oil and gas structures.

A1.6 The total investment in the terminal required EUR 15m, which the port authority alone could not commit, and for which bank financing was not available. The approach chosen was to establish an infrastructure development company called Renewable Energy Base Oostende (“REBO”), in which the following participants invested:

- 40% stake held by PMV, the independent investment company 100% owned by the Flemish government, whose aim is to realise the economic government initiative in Flanders, and can act as a facilitator when private capital investment is deemed too risky;
- 30% stake held by dredging company DEME;
- 15% held by contractor group Artes;
- Remainder held by the Port of Ostend.

A1.7 In 2019, the Port of Ostend acquired the shares of the other shareholders in REBO as it was deemed the terminal has become sufficiently mature and has a stable enough balance sheet that the resources and expertise of the initial investors was no longer needed.

Current activity:

- A1.8 The port has recently been used to construct the 487MW SeaMade Offshore Windfarm, the single largest wind farm in Belgium. The project reached the final stage of construction with the installation of the last turbine in November 2020. The Otary logistical hub in the Port of Ostend supports the O&M for the wind farm. The port is also being used for O&M activities for the C-Power wind farm.
- A1.9 In subsequent development, three of the members of the above development company (PMV, DEME and the Port of Ostend) have recently announce a 250MW hydrogen plant in Ostend, which is an exclusive partnership with HYPOR.

CASE STUDY 2 – NEART NA GAOITHE (NNG)**Overview:**

Type: Offshore Wind Project expected to be fully operational in 2023

Current Investors: EDF (purchased 100% stake ‘shovel-ready’ from Mainstream Renewable Power), ESB (purchased 50% stake in 2019)

Ports used: Port of Dundee – Forth Ports (turbine marshalling), Port of Leith (foundation installation activities), Methil (foundation fabrication), Eyemouth Harbour – Trust Port (O&M)

Port of Dundee

- A1.10 The 54 wind turbines supplied by Siemens Gamesa will be assembled at the Port of Dundee which will be the marine hub for the construction of the wind farm.
- A1.11 The Port of Dundee was considered as a base for the construction of the NnG wind farm which was planned to go ahead in 2014. However a judicial review in 2015 raised by RSPB delayed NnG along with three other offshore wind farm projects. This delayed the investment in the port, although Forth Ports opted to go ahead with the investment itself using internal funds of £10m, on the basis that this investment could attract other wind developers and could also be used for decommissioning purposes.
- A1.12 The £10m investment in the port is a small portion of the Forth Ports’ wider net asset position (as at 2019¹³ its turnover was £238.5m and net assets of £452m, including £110m of cash).
- A1.13 We understand that the investment being made by the port itself was an important part of the project developer’s decision to use the port.

¹³ <https://find-and-update.company-information.service.gov.uk/company/SC134741/filing-history>

Eyemouth Harbour

A1.14 We understand that the project developer considered several east coast Scotland ports when evaluating ports as a base for O&M activities. The final decision was to set up in Eyemouth over a 25-year lease for the following reasons:

- Others may have required significant infrastructure investment to have a commercially viable harbour, in addition to the cost of setting up the facilities for the project's own operations.
- Eyemouth required smaller investment to host NnG, and funds of this size were easily accessed from the local authority once they were certain they would win the O&M contract. This investment covered work needed to be undertaken in the harbour, whereas the project itself met the costs of the building used for managing the project.

A1.15 We also understand that investment in a port by any developer in this scenario would have been driven by a lack of alternatives. For example, had the wind farm been located in a more remote location with fewer realistic port options, then larger investments may be considered.

CASE STUDY 3 – GREEN PORT HULL

Brief description and history:

A1.16 Green Port Hull ("GPH") was established in 2010 by Hull City Council ("HCC"), East Riding of Yorkshire Council ("ERYC") and Associated British Ports ("ABP"). Its aim was to promote investment in the renewable energy sector in the Humber region and secure long-term economic growth for the region. It seeks to take advantage of the Hull's prime location in relation to offshore wind opportunities in the North Sea to establish a world class centre for renewable energy, creating wealth and employment for the region.

Private investment for offshore wind:

A1.17 In 2012 HCC and ERYC secured £25.7m of funding from the Regional Growth Fund. This led to the formation of the Green Port Growth Programme, which aims to support the area through initiatives such as:

- securing inward investment;
- assisting local business to diversify and enter the supply chains of major renewables investors and their suppliers;
- upskilling and training approximately 900 local people;
- establishing Hull as a centre for research and development for the renewables industry; and
- creating 3,500 renewables sector jobs.

A1.18 Separately, Siemens' had an aspiration to set up on a 'ready-made' port site on the East Coast. Siemens criteria in choosing a port for its facility included the following:

- Good access to markets
- Suitable configuration of the site: ability to support the size requirements
- Attractiveness of the financial offering
- Sufficient strength and depth offered by partners
- Strength of political support.

A1.19 The four sites that were selected and taken to the December 2010 Hamburg Steering Committee were: AMEP (Killingholme, South bank of the Humber estuary), Harwich, Felixstowe, Hull. The Port of Hull had a significant advantage in the form of a consented development permit (an HRO) already in place with ABP, owing to a project with logistics company Samskip that had not gone ahead. Also, it was thought that some of the other sites may be too remote, and Hull provided other benefits such as the longest quay and a strong partnership with ABP.

A1.20 The establishment of GPH helped to attract Siemens and it announced an investment of £160m in a wind turbine production facility in 2014. ABP also invested £150m in the project.

A1.21 The investment was initially intended to cover two sites: Alexandra Dock (where the HRO was in place) and Paull (in the East Riding and therefore in an enterprise zone with the associated Enhanced Capital Allowances). However, the decision to was made for the rotor blade manufacturing plant to be co-located from Paull to Alexandra Dock, sitting alongside the wind turbine assembly and servicing facilities due to environmental issues with the Paull site. The nacelle manufacturing plant was to be moved to Cuxhaven as the supply chain for nacelles was heavily based there.

A1.22 The majority of the turbine blades being manufactured by Siemens for the Hornsea 2 project are being provided from the facility Green Port Hull.

A1.23 In February 2021, Siemens applied for planning permission to increase the size of its manufacturing facility in Hull so it can build longer blades for the latest generation of offshore wind turbines. This investment would double the size of the existing turbine factory.

CASE STUDY 4 – PORT OF CROMARTY FIRTH

Brief description and history

A1.24 The Port of Cromarty Firth ("POCF") is a Trust Port and has historically operated across the renewables, oil and gas and cruise sectors. The port made a strategic decision c. five years ago to invest in facilities to support offshore renewables albeit at the time there was some uncertainty over the business model and prospects.

Private and public investment for offshore wind

A1.25 The investment into the port facilities at Cromarty Firth has come in 4 phases, two of which have been related to supporting offshore wind projects. The second phase addressing offshore wind is currently

under construction, with the first providing an additional 4.5 hectares of laydown area and a 154m long heavy quay, Berth 5.

- A1.26 The second phase development includes further land reclamation providing an additional 4.5 hectares of laydown space, and a 215m quay wall to create Berth 6.
- A1.27 This development commenced in 2018 and cost c. £30 million and was funded through a combination of POCF's own cash reserves, a grant from HIE, and a loan from their Royal Bank of Scotland.
- A1.28 External funding was required to support this investment given POCF's financial reserves position, which were not sufficient to support the investment on its own.
- A1.29 We understand from discussion with the port's management team that it has been constrained in its ability to raise third party funding, both in duration and amount. This has primarily been driven by the relatively short term contracts it has been able to secure to support offshore wind farm construction. Structurally, the debt it has been able to raise has been secured on the assets of the port and has a ten year amortisation profile, albeit with the requirement to repay/refinance after seven years.

Current Activity

- A1.30 We understand that phase 5 of the port expansion is currently in planning. This is expected to involve investing c. £25 million to cater for offshore wind developers' requirements for more space as component sizes continue to increase substantially.

Appendix 2. Market outreach

A2.1 Market outreach conversations were held with the following parties:

Organisation	Organisation Type	Comments
Conversations held		
Green Investment Group	Developer / Investor	Experience of offshore wind and currently working on a bid for ScotWind. Part of the wider Macquarie Group and was successful in the Crown Estate's Round 4 process.
NnG	Developer	Developed by Mainstream Renewable Power and subsequently sold to EDF Renewables. See paragraph 3.8.
SDIC Red Rock Power	Developer	Has offshore experience via investments in Beatrice (operational) and Inchcape (in development)
BayWa/ Ideol / Elicio	Developer	Have announced a partnership to work on ScotWind. Ideol specialises in the production of floating foundations.
Ocean Winds	Developer	A partnership between EDPR and Engie, developing the Moray East and Moray West projects
Port of Cromarty Firth	Trust Port	See Section 2.7 for further details.
Global Energy Group	Private Port	Owner and operator of Port of Nigg
Peel Ports	Private Port	Owner and operator of several ports across the UK, including Great Yarmouth (which caters for the offshore wind projects) and Hunterston (which has plans to support offshore wind projects).
Crown Estate Scotland	Investor	Engagement in its role as a real estate investor, rather than in its capacity of running the ScotWind process.
SNIB	Investor	Development bank owned by Scottish Government and able to invest patient capital on commercial terms
Equitix	Investor	Equity investor in infrastructure projects and has offshore wind experience through investments in the Beatrice and Sheringham Shoal projects.
Contacted but no conversation held		
InterGen	Developer	Not currently looking at the offshore wind market
Statkraft	Developer	Not currently looking at offshore wind in the UK
SSE	Developer	Contacted but did not respond in sufficient time for inclusion in the market engagement exercise
Scottish Power Renewables	Developer	Contacted but did not respond
John Laing	Investor	Contacted but unable to schedule a call due to diary constraints

Table 2 - List of parties contacted as part of market outreach exercise