



# BUSINESS PLAN

Sub report

Sources of Funding and Financing  
Available to Developers in the  
ISLES Zone

June 2015

# ISLES II: TOWARDS IMPLEMENTATION

## Business Plan Sub Report

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### Sources of Funding and Financing Available to Developers in the ISLES Zone

#### ISLES Project

The ISLES project is supported by the European Union's INTERREG IVA Programme, managed by the Special EU Programmes Body. The project partners and co-funders are the Scottish Government, Department of Enterprise, Trade and Investment (DETI), Northern Ireland and the Department of Communications, Energy and Natural Resources (DCENR) Ireland.

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The Business Plan has been produced for the ISLES project partners by Baringa Partners LLP, Source Low Carbon LLP and Bellenden. This plan will be used to inform and promote potential future commercial development of a sub-sea electricity network and associated renewable energy projects in the ISLES Zone.

Baringa Partners LLP is a management consultancy that specialises in the energy, financial services and utilities markets in the UK and continental Europe. Consortia partner, Source Low Carbon LLP is acting as project manager for the ISLES assignment. Source was established in 2013 to support and promote the successful development of sustainable marine energy projects. The third consortia partner is Bellenden an established, independent agency specialising in political, planning and corporate communications.

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## 1. INTRODUCTION

Realising the delivery of generation and transmission in the ISLES zone will involve accessing and channelling significant sums of capital. For example, ISLES I suggested that the generation expenditure required could be up to £14bn (real 2010), while network expenditure required could be up to £5.6bn.

These figures were based on the full development of multiple assets in both ISLES concept areas (i.e. North and South). However, since the publication of ISLES I, the generation development landscape has changed, as have the capabilities of High Voltage Direct Current (HVDC) transmission technology. These imply generation deployment scenarios and accompanying transmission designs which could look quite different from the original concepts. Nonetheless, the generation technologies being considered, and the extent of transmission development in the area will continue to require the raising of substantial sums of capital for delivery.

A further consideration is the early stage of development of projects in the region. This is considered in detail in the research report on offshore connectivity, but is relevant to funding and financing options because the level of overall risk that most of the projects are likely to be exposed to will increase their cost of capital, while reducing the breadth of capital providers who are likely to engage. While some of these risks can be mitigated through careful design of the policy and regulatory frameworks for delivering infrastructure in the region, other risks are somewhat “embedded” in the high level regulatory framework that already applies to projects - such as the competitive allocation of support which is an obligation being rolled out at the European level, or the developer financial commitments set out in the UK Feed in Tariff with Contracts for Difference (FiT CfD).

This paper focuses on the sources of capital available to developers of projects in the ISLES zone, taking into consideration their status of development and the constraints set by the relevant regulatory framework(s) (if such a framework exists). It begins by characterising the risks faced by offshore technologies, before reviewing sources of capital, financing structures and the impact of Electricity Market Reform (EMR) on project development and what this could mean for the realisation of the ISLES vision.

## 2. PROJECT RISKS

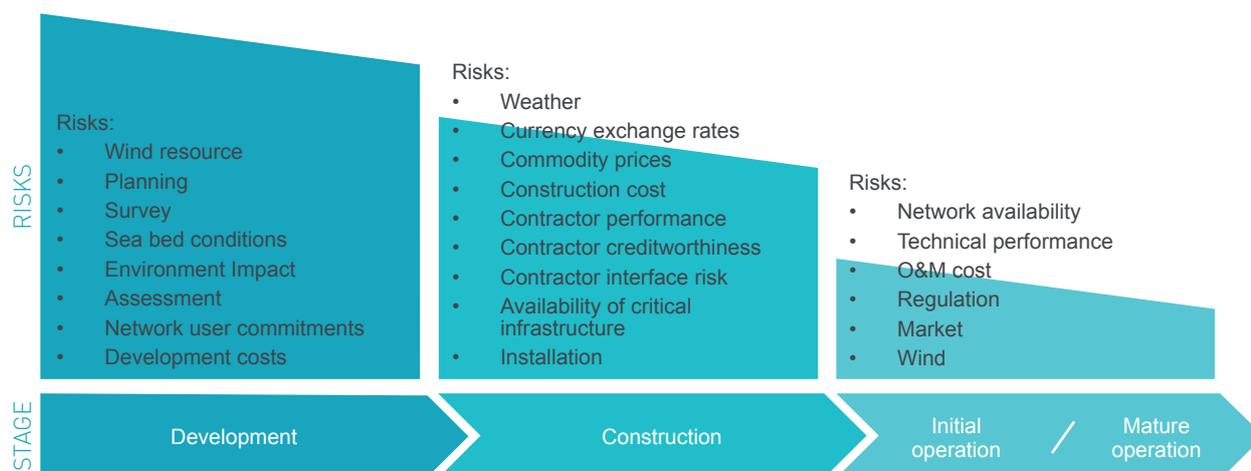
### 2.1 INTRODUCTION

Before discussing the range of sources of capital that could be available to developers of generation and transmission in the ISLES zone, it is important to familiarise with the range of project risks that apply and how these can be interpreted by financiers.

For example, considering the lifecycle of an offshore wind farm, from development, through construction to operations, the nature and magnitude of risks faced changes. Risks can be categorised as external, and impacting on the sector as a whole, or internal and affecting the project specifically.

External risks include those relating to policy, economic and market conditions, and the availability of finance. The recent shift in the UK to allocating financial support to low carbon projects through competitive processes is an example of an external risks that affect the sector as a whole (and throughout Europe by 2017<sup>1</sup>). Internal risks regard the technical characteristics of the given project, and its exposure in the contracts that govern its construction and operation. These are summarised in Figure 1 below.

Figure 1: Offshore wind project risks schematic



### 2.2 RELATIONSHIP BETWEEN RISK AND THE COST OF CAPITAL

The level of risk in a project affects the availability, and cost of raising finance. In general, providers of capital to earlier stages of a project, such as development, are willing to accept the risk of a greater range of returns. However, to compensate for this risk, the average returns that they need to make are generally higher than investors in other phases of the project lifecycle. In other words the cost of their capital is higher than the cost of capital of other investors in later phases of the project.

From an investor's perspective, the development phase is inherently higher risk than the construction or operational phases because there is the risk that capital is deployed and potentially not recovered nor earns a return. In the case

<sup>1</sup>Guidelines on State aid for environmental protection and energy, 2014-2020, Section 3.3.1

of offshore wind, the quantum of investment required during the development phase is significant relative to onshore wind and other renewable energy technologies. For example, an investor could fund a number of environmental and seabed surveys in the development phase, only to have planning consent refused.

The length of the development programme is also important as it increases developer exposure to external risks, particularly regulatory change. EMR and the impact of the introduction of CfDs with competitive allocation is particularly relevant in this regard, (discussed further in Section 6).

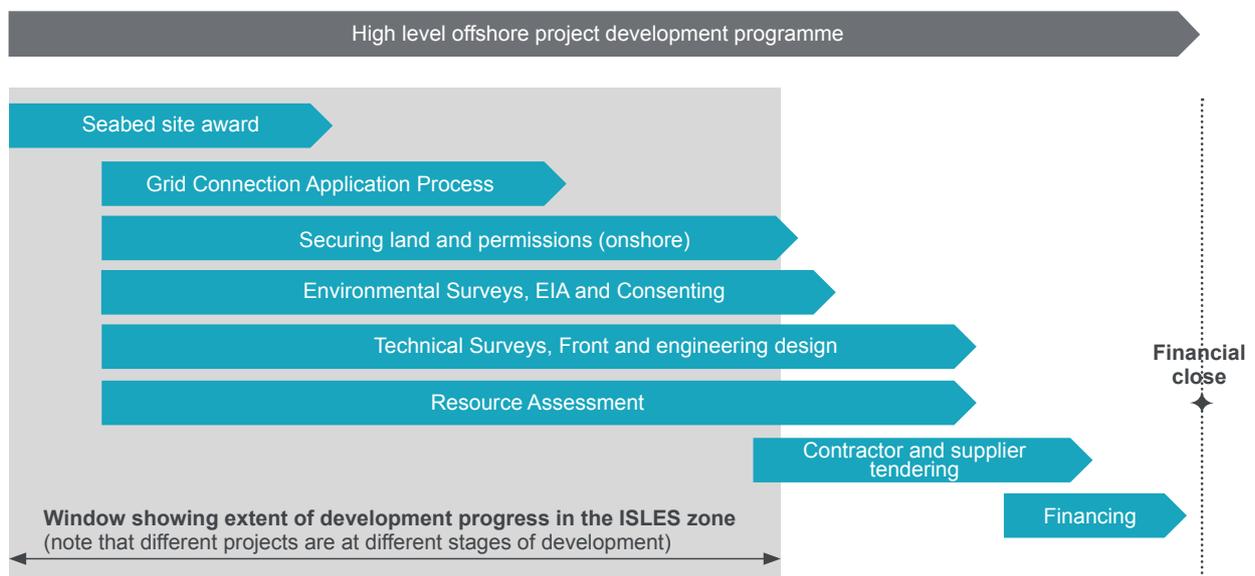
In comparison, when the project is operational, the risk that an investor suffers a complete loss is vastly reduced because the project will already be operating and earning revenues, and will have various commercial structures in place to mitigate risks to ongoing value production (such as warranties, insurance and contracts with counterparties for managing risks related to ongoing operations and maintenance).

The changing balance of risk and reward means that different types of capital provider are attracted to different stages of the project lifecycle. Examples of how capital providers enter and exit such projects over time, and as the risk profile of the project reduces, are provided in Annex 1 from the UK offshore wind sector.

## 2.3 SUMMARY

Overall, the risks affecting projects in the development stage of the lifecycle are particularly important for the consideration of ISLES because, with the exception of a small number of potential projects in Irish waters, the generation assets are all at pre or early planning stage (see Figure 2 below). Therefore, developers will need to take a view on the traditional development risks in the context of additional uncertainties associated with securing financial support for their projects.

Figure 2: Extent of development in the ISLES zone



Section 3 moves on to describe the categories of capital providers that may take an interest in investing in ISLES based on their investment records to date.

## 3. CAPITAL PROVIDERS

### 3.1 INTRODUCTION

This section reviews the range of capital providers that developers of projects in the ISLES zone could consider approaching to raise finance at various stages of project development.

The sources of capital are taken from experiences in integrated offshore wind and transmission development over the past decade. In this space, different types of entity have been seen to provide capital to projects, but their motivations can differ. Similarly, although investment theory suggests that the returns required from capital committed to offshore wind should be determined by the risk of the project, the expectation in practice is that they will differ across these entities too, reflecting differences in their cost of capital.

The section is split into Equity and Debt providers:

- Equity providers are owners of the project, and therefore are present throughout all phases of the project's life. While they will target a specific level of return that they expect to realise from the project, they are exposed to the potential variability of the project's costs and revenues, and therefore have both potential upside and downside exposure in returns.
- Debt providers lend funds either to the owners or to the project directly itself, to be paid back at agreed rates and terms, and at agreed points in time.

While capital providers are classified in this paper as either equity or debt providers for description purposes, this does not necessarily restrict them to providing one or the other, but is based upon past precedent of general activity in the sector.

### 3.2 EQUITY PROVIDERS

#### 3.2.1 Introduction

While Equity providers (or equity holders) are present throughout the lifecycle of the project, their varying risk appetites will suit some phases more than others, so it is common to see projects change ownership as they enter different phases of the project lifecycle.

#### 3.2.2 Power producers, including vertically integrated utilities

Generating and marketing electricity is a strategic interest and core expertise for power producers. Vertically Integrated Utilities (VIUs) with a supply business in the relevant market also have a demand position to offset, and in the UK, they have had to meet Renewables Obligation (RO) requirements and so have been incentivised to take an active role in the industry<sup>2</sup>. They tend to be large, diverse, asset rich businesses with a relatively low cost of capital. To date they have dominated deployment of offshore wind in the UK, using both balance sheet and project finance models to finance delivery of infrastructure (see section 4 for a description of financing models).

<sup>2</sup>By way of presenting Renewable Obligation Certificates (ROCs) as evidence that they have purchased renewable energy

### 3.2.3 Manufacturers and contractors

Manufacturers and contractors have a strategic interest in winning contracts to supply offshore wind projects. In general, their interest in providing capital directly to projects is likely to be limited to the construction phase, where it is important to demonstrate to equity and debt providers that they are confident in their technology or service offering by taking a degree of delivery risk with their own funds.

Most manufacturers and contractors are likely to be relatively asset light and are involved in higher risk business relative to power producers, and consequently are likely to have a higher cost of capital than the power producers that they typically partner with.

### 3.2.4 Oil and gas companies

Although not engaged in a directly related industry, oil and gas companies may have relevant expertise in areas such as developing constructing and operating offshore assets. Previous precedents include Shell's involvement in the development of the Round 2 London Array offshore wind farm and Scira Offshore Energy Ltd, a Joint Venture operated by Statoil and Statkraft used to finalise development, construct and operate Sheringham Shoal offshore wind farm<sup>3</sup>.

Although they have large diversified balance sheets, oil and gas companies are likely to have a higher cost of capital than power producers due to the riskier nature of their business.

### 3.2.5 Independent developers

Independent developers of onshore wind projects operate a business model of developing sites to, or near to, the point of receiving the necessary permits and consents. They will then seek capital from other sources to finance construction, and in this way can act as a conduit for investment. This model has been replicated to some extent in offshore wind, particularly in the early 'rounds' of development in the UK with developers such as Warwick Energy progressing the Thanet and Dudgeon East projects and exiting prior to construction.

However, the level of spend involved with offshore wind is significantly greater than is required for either onshore wind or for wave/tidal generation projects. As project size has increased from around 60-100MW in Round 1 to the multi-gigawatt, multi-project zones in Round 3, the role of traditional developers has diminished and other investor classes with larger balance sheets, particularly power producers, have come to dominate development in the UK – all but one of the Round 3 zones were awarded to utilities (either alone or in consortia).

The high-risk nature of development means that the cost of capital for independent developers is also high. Developers also tend to require a well-defined exit route that can be reconciled with their ability to meet ongoing funding commitments (e.g. after consent, at/prior to financial close or the one-year CfD Milestone Delivery Date, or prior to the commencement of construction) so that their capital can be recycled from the later, lower risk stages of development or early stage of construction, back to the initial stages of project development.

### 3.2.6 Other corporate investors

There have been a number of examples in Europe of companies whose primary activities are not related to energy investing in offshore wind projects. The rationale for companies making such investments may include demonstrating environmental credentials, providing a long term hedge for the cost of energy, or purely financial. Examples include the Japanese trading company Marubeni's investment in the Westernmost Rough project in the UK, and retailer Colruyt's

<sup>3</sup>Statoil and Statkraft are also progressing the Dudgeon East offshore wind farm into construction and have a stake in the Forewind consortium developing the Dogger Bank zone of offshore wind farms. Statkraft has recently taken a stake in the Triton Knoll offshore wind farm and Statoil is also progressing a demonstration of its Hywind floating wind foundation technology in Scottish waters.

investment in the Northwind project in Belgium. These investments came at the construction stage, and the cost of capital for these investors is likely to vary depending on the nature of the company.

### 3.2.7 Financial investors

Financial investors include institutional investors such as pension and insurance funds, more specialist infrastructure funds, sovereign wealth funds, private equity funds and others. They have no strategic interest in offshore wind, but may be attracted by the risk and reward properties available from investments in the sector. In particular, pension and insurance funds seek assets that can produce returns to match their defined, long term liabilities. Though they may invest directly in assets, more typically they will outsource this task to specialist management teams in infrastructure funds.

The risk appetite of capital providers in this sector will depend on the investment remit of the particular fund. Infrastructure funds have become more willing to take construction risk, selling once the project is commissioned with a few years operational experience. Other funds primarily target the low risk operational phase of projects, and have a commensurately low cost of capital. Few infrastructure funds take pure development risk, instead relying on independent developers and utilities to progress a project to the construction stage.

The entry of sovereign wealth into early stages of project development was marked by Masdar (owned by the Abu Dhabi Government) buying into London Array prior to commencing construction, but after the project had received its necessary consents. Masdar continues to hold an interest in the London Array project even into its operational phases. The Abu Dhabi sovereign wealth fund, Abu Dhabi Investment Authority (ADIA) has also recently bought into the world's first offshore wind fund, established by the UK Government's Green Investment Bank (GIB) and holding stakes in operational wind sites – see section 5.1.2 for a more detailed description of the GIB's activities in the sector.

## 3.3 DEBT PROVIDERS

### 3.3.1 Introduction

The return a lender can receive on debt capital is capped by the interest rate that they set – that is there is no potential for upside. For that reason, lenders are concerned with minimising risk, and will not accept risks that pose an unacceptable threat to their ability to recoup the capital they commit. Consequently, the involvement of debt directly into a project is usually confined to later stages of the project lifecycle.

### 3.3.2 Commercial banks

Infrastructure project finance is a well-established product for commercial banks, and a number of banks have lent to offshore wind projects in the UK. Commercial banks will typically have a maximum exposure that they can accept for a single project, so funding large offshore wind farms will typically require a “club” approach (a syndicate of banks arranging finance for the project).

Most examples of project lending for offshore wind farms in the UK have come at the operational stage, however the Lincs project secured debt whilst in construction and other projects in Europe have secured debt before construction. Banking regulation designed in response to the financial crises has had a negative impact on the ability of commercial banks to provide long term lending – section 5.2 has an overview of project financing activity to date.

### 3.3.3 Financial investors

In addition, or instead of providing equity, financial investors are also able to lend directly to projects and their owners, often providing their investors with opportunities for exposure to lower risk and long-dated products. A notable example is M&G investments, which provides infrastructure debt in project transactions, and access to both primary and secondary markets for borrowers.

### 3.3.4 Multilaterals

Multilaterals describe government-backed entities that promote policy objectives such as increased development or trade between two or more countries. A well-known example is the European Investment Bank (EIB). Multilaterals are typically tasked with supporting policy objectives or economic activity in their home markets. They have played a substantial role in funding offshore wind to date in continental Europe, both through lending and providing equity. They will participate in funding construction, and their involvement can be key to catalysing participation by other parties. The EIB has been very active in lending in the offshore and transmission sector, having lent funds to offshore wind farms, offshore transmission assets and the East-West Interconnector. It offers:

- Project loans,
- Structured finance (taking higher risk debt),
- Guarantees on debt,
- Enhancing the credit quality of projects for capital market financing (see 3.3.6 below)
- Financing products to first of a kind and innovative businesses (through its InnovFin programme).

The EIB also provides equity and advisory products.

While not strictly a multilateral, the Green Investment Bank (GIB), a public-owned investment bank in the UK, performs a similar function to multilaterals, through investing in green projects based in the UK through either debt or equity on commercial terms, which can mobilise other private sector capital into projects. From 2015, the GIB also has a mandate to invest in other countries to mitigate the effects of climate change or enable communities to adapt to its effects.

### 3.3.5 Export Credit Agencies

As with multilaterals, Export Credit Agencies (ECAs) are often tasked with supporting domestic policy objectives, with the specific role of facilitating exports from the home country, mainly by providing credit guarantees to lenders in the event that the project owner, or the project itself, defaults on a payment under a loan agreement. The effect of ECA guarantees is to improve the credit rating of the project owner or project itself, often lowering the cost of finance.

### 3.3.6 Capital markets

Capital Markets (i.e. markets for publically traded debt and securities) are able to provide debt to projects through buying project bonds issued by the project, or through parent company issues. As regards project bonds, there have been a few instances where this has been the case for low risk regulated transmission assets (see section 5.3 for an overview of examples).

Given that the bond market is a market rather than one single institution, the use of project bonds lends itself to the situation where the asset is operational, as opposed to the development or construction stages where a bilateral

approach best addresses the project-specific risks that can be present at this time.

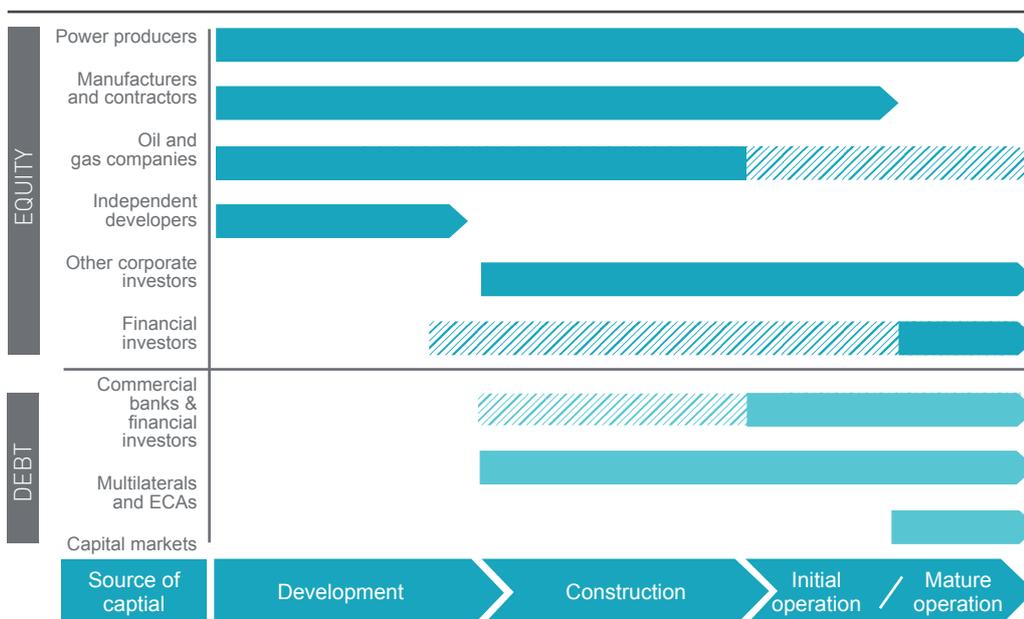
### 3.4 SUMMARY

Figure 3 below provides a summary of the types of capital provider, split by debt and equity, who might be expected to provide capital at each stage of project development. Hatched areas indicate where there is either an unproven or emerging ability and willingness to provide capital.

Importantly, all existing projects under active development in the ISLES zone are being taken forward by independent developers (see the paper on Connectivity options for more details on these projects). The ability of independent developers to provide the capital required to take projects through to the construction stages of the project (particularly for the capital-intensive, offshore wind sites) can sometimes be questionable, given the significant scale of some projects (especially the capital-intensive, offshore wind sites, and extension plans for tidal demonstrations).

Therefore, should projects in the ISLES zone be successful in securing the necessary certainty to reach construction, it is reasonable to expect that most will need to raise finance from the range of capital providers discussed above. To ensure that these ISLES projects are deemed financeable by a wide range of investors, the policy and regulatory framework which sets out the regulatory regime for shared network infrastructure (and potentially the route to market for some projects) will need to present a proposition that shares acceptable levels of risk with the project. Clearly, for the projects to raise the significant levels of capital required, these arrangements will also need to be established ahead of projects reaching financial close (the timeline for establishing these arrangements is considered in the paper on Connectivity options).

Figure 3: Summary of capital providers by type and project development stage



## 4. RELEVANT PUBLIC FUNDING INITIATIVES TO ISLES

### 4.1 OVERVIEW

Public funds are available to take forward the delivery of infrastructure in the ISLES zone. A few of these sources are discussed in Section 3, including institutions such as multilateral banks like the EIB, ECAs and domestic publically-owned banks such as the GIB. These entities commonly use state resources to lend or buy stakes in strategically important projects, and can act as a catalyst for commercial finance to enter a project. They normally invest at, or near commercial terms for a project.

However, there are other sources of public funds that are available to developing generation and transmission projects that are discussed below. These can be in the form of grants and other financial instruments, that are available both at the European and domestic level, and are administered by governments, their agencies or through state and multilateral banks

### 4.2 EUROPEAN FUNDING OPPORTUNITIES

#### 4.2.1 Projects of common interest

ISLES is a Project of Common Interest (PCI), which is a list compiled by the European Commission to prioritise the development of cross-border infrastructure development under Regulation 347/2013. PCI status offers a streamlined planning and permitting arrangements, and the possibility of accessing financial support. The electricity infrastructure categories covered by PCIs are:

- High and extra high voltage electricity transmission and associated equipment,
- Electricity storage, and
- Two-way communications equipment for the purposes of monitoring and managing electricity generation, transmission, distribution and consumption within an electricity network to broadly support its efficient development and secure operation.

The Regulation also identified priority corridors for electricity and gas infrastructure development. The corridor relevant to ISLES is the North Seas Offshore Grid, covering integrated offshore electricity grid development and related interconnectors in the North Sea, the Irish Sea, the English Channel, the Baltic Sea and neighbouring waters.

At a high level, PCIs are selected from a long list of candidate projects in the European Network of Transmission System Operators for Electricity's (ENTSO-E) Ten Year Network Development Plan (TYNDP) process, which is re-run every two years. From this list, regional groups comprising representatives from Member States select a short list of PCIs to support for the next two year period.

The first list of PCIs was published in October 2013 from the publication of the TYNDP 2012. Both of the ISLES concept areas were classified as PCIs in this first list. Projects must re-apply under each update to the list and comply with reporting obligations to remain a PCI. The second PCI list is due for publication later in 2015.

Financial support for PCIs is provided under the Connecting Europe Facility (CEF). The energy component of the CEF offers €5.85bn of funding between 2014 and 2020. The CEF replaces funding available under the Trans-European

Energy Networks (TEN-E) programme for financing feasibility studies. It also builds on experience gained from the European Energy Programme for Recovery (EEPR), which provided funds for strategic energy sectors including offshore wind and transmission, and was the first example of EU funds being directed towards development of infrastructure, and closed in 2010.

All PCIs are eligible to apply for support in the form of:

- Grants for studies (studies including the surveys and technical reports needed to bring a project to a construction-ready status),
- Construction funding (in limited cases, where the project is already deemed to be commercially viable), and
- Facilitating financing of projects, through buying subordinated debt, buying project bonds or through taking direct equity stakes in projects.

Grants for undertaking works will only be available where projects with a positive social impact are unable to finalise funding on a commercial basis.

The list of financial support above could be very relevant for ISLES, as it offers support for the different stages of project lifecycle that can currently be observed across developing projects within the Northern and Southern zones.

However, while ISLES has PCI status, the project partners do not plan to access the CEF on behalf of the project developers within the ISLES zone. Clearly, the ISLES concept falls into the electricity infrastructure categories and is in the North Seas Offshore Grid priority corridor – however, developers' own plans in the zone do not currently centre on coordinated and shared network development between projects or market-to-market interconnection.

Therefore, given that delivery of both generation and transmission will be developer-led in the ISLES zone, it is recommended that the project partners investigate with the European Commission how developers within the ISLES zone, who are supportive of the ISLES concepts, may be able to benefit from the PCI status of the overall ISLES initiative.

#### 4.2.2 European Regional Development Fund

The European Regional Development Fund (ERDF) may also provide a source of funding relevant to ISLES. Supporting the shift towards a low carbon economy is one of the main priorities for this fund, including investment in production and distribution of energy from renewable sources. In “transition” regions, which Northern Ireland and the Highlands and Islands region of Scotland qualify as, 15% ERDF of funds must be spent on the low carbon objective. In “more developed” regions, which other ISLES regions qualify as, 20% of funds must be spent on the low carbon objective.

#### 4.2.3 Interreg funding

Interreg is a financial instrument of the European Union's Cohesion Policy. It funds projects which support transnational cooperation, and is financed by the ERDF. The aim is to find innovative ways to make the most of territorial assets and tackle shared problems of Member States, regions and other authorities.

It is administered regionally, across three core strands:

- Cross border cooperation,

- Transnational cooperation, and
- Interregional cooperation.

The North West European region has also set out that it has three themes that it is looking to promote:

- Innovation – enhancing the innovation performance of enterprises throughout North-West Europe regions,
- Low carbon – facilitating the implementation of low carbon, energy and climate protection strategies; facilitating the uptake of low carbon technologies, products and processes, and to facilitate the implementation of transnational low carbon solutions in transport solutions, and
- Resource and materials efficiency – to optimise reuse of materials and natural resources in North West Europe.

The current programme of work for ISLES is funded through Interreg phase 4A funding for Northern Ireland, the Border region of Ireland and Western Scotland. The same region has secured €283m under Interreg 5A which will apply to the 2014-2020 period. Calls for funding requests are expected later in 2015, to be published on the website of the Special EU Programmes Body (SEUPB) – the institution tasked with managing cross-border EU structural funds in the region<sup>4</sup>.

The aim of Interreg may be more aligned with initiatives like ISLES to address barriers across borders, rather than to directly support infrastructure delivery. Therefore, it may have more relevance for the project partners in the next phases of implementation of the ISLES policy and regulatory arrangements.

## 4.3 DOMESTIC FUNDING OPPORTUNITIES

### 4.3.1 Scotland: Renewable Energy Investment Fund

The Scottish Investment Bank (the investment arm of Scottish Enterprise), through the Renewable Energy Investment Fund (REIF) provides financial assistance for projects that:

- Deliver energy from a renewable source, reduce the cost of renewable energy, or provide solutions for renewable energy generation,
- Provide benefit to the economy of Scotland,
- Have a demonstrable funding gap for REIF to consider, and
- Are at a sufficient stage of development to require REIF funding before March 2016.

The REIF offers loans, equity investments and guarantees, similar to the offerings of multilateral and state investment banks discussed in section 3.

It is feasible that ISLES projects (particularly those located in the Northern ISLES concept zone) will meet the criteria set out for applying to the REIF. As for funding REIF beyond 2015/16, Scottish Ministers are not in a position at this stage to commit to further funding in the next Spending Round. It is possible however that REIF could be a useful source of funds for those projects looking to commence/continue development in light of the risks that may deter private investors.

### 4.3.2 Ireland: Ireland Strategic Investment Fund

The Irish National Treasury Management Agency (NTMA) controls and manages the Ireland Strategic Investment

<sup>4</sup>See <http://www.seupb.eu/>

Fund (ISIF) which has a statutory mandate to invest on a commercial basis in a manner designed to support economic activity and employment in the state.

ISIF currently has €7.2bn of pension assets under control in its discretionary portfolio, while €15bn of pension assets continues to be managed by the National Pensions Reserve Fund under the Minister for Finance. It is understood that the long term intention is for the ISIF to control all state pension assets.

A number of developing projects in the ISLES zone (particularly the offshore wind projects under development in Irish coastal waters) could meet the criteria set out in the mandate for ISIF.

### 4.3.3 Northern Ireland – CoFund NI

While small in ticket size compared to ISIF, for example, the Department for Enterprise, Trade and Investment (DETI) has an investment arm which supports business through funding through equity and loans.

It does this through a series of funds, the most relevant to ISLES being CoFund NI, a fund that provides equity funding in cooperation with other (private) investors.

## 4.4 SUMMARY

ISLES' PCI status could offer significant financial support to projects in the region if the individual developers are able to access CEF funding under the current status. This is something that the project partners should investigate in more detail with developers and the European Commission. There are domestic sources of finance which could have strategic motivation to invest in ISLES projects in all three jurisdictions, though at present, only Ireland has the depth of capital and investment horizon to fit with the programmes of ISLES projects.

## 5. FINANCING STRUCTURES

### 5.1 BALANCE SHEET FINANCE

#### 5.1.1 Overview

Balance sheet financing is another term for the direct ownership of the project by a company on its asset register, whereby the company uses its own financial resources to fund and/or borrow the necessary capital to develop and construct and operate projects.

Lenders can prefer balance sheet financed projects to project financed projects because the owner is able to retain significant influence over the structuring and operations of the project. It is also generally quicker and less costly to lend to an existing company on the basis of its credit rating compared to lending directly to a project which may not yet exist, not have any trading history and/or tangible assets (yet).

Balance sheet finance has been the most common form of financing structure used for investing in offshore wind to date, used mainly by large European utilities. However, these utilities' balance sheets are now said to be under strain given the value of assets that are currently under ownership. Some are also suffering from the impact that low power prices in continental Europe are having on profitability.

#### 5.1.2 Recycling of capital

There has been increased activity in the offshore wind sector to “recycle capital” back towards the project development phases, through purchasing operational (lower risk) projects from utilities, releasing the necessary capital back onto their balance sheets to start developing new projects. The GIB in the UK has been particularly active in this space since its inception, taking an interest in offshore wind projects set out in Table 1 below.

Table 1: Green Investment Bank's activity in the UK offshore sector

Project (status when investment made)	Transaction date	Debt/Equity	Value
Sheringham Shoal (operational)	November 2014	Equity (20%)	£240m
Westermost Rough (construction)	March 2014	Equity (50%)	£241m
Gwynt y Môr (late construction)	March 2014	Equity (10%)	£220m
London Array (operational)	October 2013	Debt (refinancing a 20% stake)	£59m
Rhyl Flats (operational)	March 2013	Equity (25%)	£58m
Walney (operational)	December 2012	Debt (refinancing a 25% stake)	£45m

In April 2015, the GIB announced that it had closed its first offshore wind fund, and said that it had begun transferring its investments in Rhyl Flats and Sheringham Shoal directly into the fund to begin generating cash for the fund's investors,

which include UK pension funds, and a Sovereign Wealth Fund. The fund completes the recycling of capital from investors with a lower risk appetite back to utilities in line with the GIB's sector objective.

However, as many of the remaining offshore wind projects are large in size and capital requirements, it is uncertain as to whether utilities' balance sheets can be used to fund the entire future capital requirement. Further it is not certain whether they will have the continued appetite to invest in capital-intensive offshore projects given the reduced profitability of existing assets.

## 5.2 PROJECT FINANCE

### 5.2.1 Overview

Project finance models involve establishing the project as its own separate company, and financing the project company directly on the robustness of its future cashflows. It is sometimes referred to as "non-recourse finance" because lenders' rights to recourse in the event of default are limited to the project company, rather than the owners' balance sheets themselves.

This structure is efficient for the project's owners for tax and credit reasons, but also allows companies to raise significantly more finance than they might be able to on the back on their balance sheet alone (which is relevant for particularly large projects with multiple owners, for example).

Given limited recourse, lenders need to conduct detailed due diligence into the project's revenues, construction and operational risks prior to lending to the project. This can involve significant up-front time and cost, as due diligence often relies upon the use of independent advisors on each of the technical aspects of the project.

To date in the UK, project finance has been less prevalent for offshore wind projects than balance sheet finance. Development in the sector has been dominated by power producers who have found it more effective to borrow at the corporate level and fund projects from their balance sheet. This may in part be due to ratings agencies' position of factoring in off-balance sheet project debt into the assessment of power producers creditworthiness, where those companies also have PPAs in place with the wind farms. Hence the benefit of using project finance can be diminished relative to cheaper corporate borrowing.

Nevertheless project debt has successfully been raised by projects in the UK such as Lincs and Lynn and Inner Dowsing. There are also signs that it may become more prevalent for financing pre-construction projects in the future, where these projects are structured in a way that is appealing to lenders. A recent example of this is the 600MW Gemini offshore wind project in the Netherlands which raised €2bn of non-recourse debt at its financial close in May 2014.

## 5.3 NOTE ON USE OF PROJECT BONDS

Projects should be able to raise debt from the capital markets by issuing bonds. This may become more prevalent in the future under the EIB's Project Bond Credit Enhancement initiative, under which the EIB will provide junior debt, so that reduced risk bonds can be issued to institutional investors. Examples exist in financing of operational investment-grade offshore transmission assets in the UK, where £305m of bonds were financed, underwritten by the EIB's initiative. More recently, in February 2015, the Gwynt y Môr offshore transmission asset was refinanced with £339m of senior secured bonds.

## 5.4 SUMMARY

Based on precedent and recent developments, it is likely that projects within the ISLES zone will be financed for construction on balance sheet, or through project finance where the regulatory and commercial framework can be structured favourably to project finance lenders.

There may also be a role for project bonds for the refinancing of low-risk, investment grade assets (such as transmission assets), depending on the applicable regulatory regime.

## 6. IMPACT OF EMR OF AVAILABILITY OF FINANCE

### 6.1 TRANSITION TO THE CFD

In 2017, the RO will close to new entrants and the CfD will be the sole instrument for incentivising generation from large scale offshore wind in the UK. The CfD is already open to generators in GB, having completed the first allocation auctions in February 2015. In Northern Ireland, the earlier decision on whether the CfD scheme should be implemented in NI is being reviewed. If the decision to implement CfDs remains, the current plans are to open the first allocation round to generators in January/February 2017.

The CfD provides a high degree of certainty on the price received for generation from offshore wind farms for a fifteen year period, reducing price risk in the operational phase, when compared to the RO. DECC believes that this reduction on price risk should enable operating wind farms to be more readily financed, and at a lower cost of capital.

However, the competitive auction introduced for granting CfDs introduces allocation risk to the development phase, which could have a detrimental effect on the availability of finance during for those phases of the project lifecycle – this is significant for offshore wind technologies given that the upfront development costs can be higher than their onshore counterparts. Importantly, the principle of competitive allocation is being rolled out across the European Union by 2017, so issues that are currently being experienced in GB may also be experienced in other markets in the next few years. It is also notable that the UK's CfD imposes specific financial commitments on project developers following the allocation of a CfD. These also pose a material risk to independent developers and their funders, which could affect the attractiveness of progressing projects using these sources of capital from the outset. The paragraphs below discuss both the competitive allocation effects and the financial commitment effects in more detail.

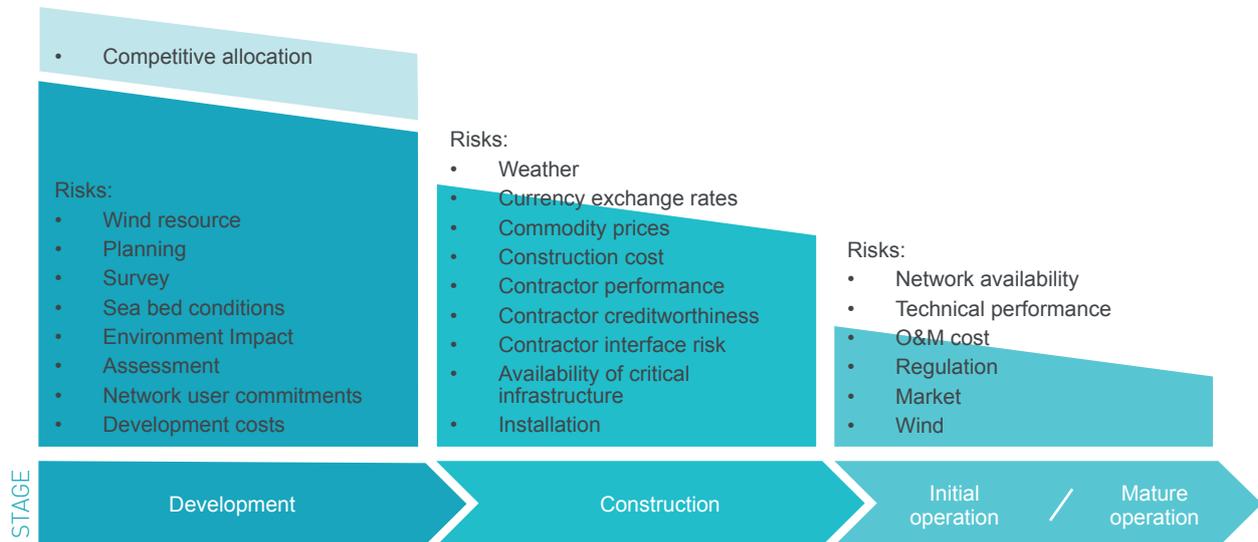
### 6.2 Impact of CfD allocation risk

Under the RO, projects accredited with Ofgem at the point of commissioning. The number of ROCs received per unit output is determined by the banding for the technology, which is set some time in advance by DECC and the Devolved Administrations. However, projects can undertake “preliminary accreditation” once they have the necessary planning permission. While preliminary accreditation is by no means a guarantee that ROCs will be credited to the project, it enables projects to have certainty that support will be available to the project subject to no changes being made to the project's design, or the underlying legislation. It is also true that the government also had the ability to review the RO banding during the development phase but, again, this was not necessarily considered to be a material risk.

By comparison, under the CfD, gaining the necessary planning consents and grid connection offer does not allow the developer to secure the same level of allocation certainty, as these are merely prerequisites for entering the CfD allocation auction. Until the outcome of the auction is known, the project's access to support, and the level at which that support would be set, is uncertain.

Therefore, the development phase must be considered to present a higher risk investment proposition to financiers under the CfD compared to the RO, as set out in Figure 4 below.

Figure 4: Perception of competitive allocation on risk profile of project development activities



The potential impacts of CfD allocation risk on projects are therefore two-fold:

1. Capital providers may deem CfD allocation risk to be too high to devote capital to the early stage, higher risk development phase of the project lifecycle. The resulting outcome could be that the pipeline of early-stage projects dries up.
2. Further, the combination of reduced availability of budget in each auction, and competition for that budget, will mean that developers are less likely to be incentivised to develop large scale projects that take advantage of economies of scale across aspects such as financing, construction, and operations, instead opting for smaller projects where there is more confidence of securing support in a constrained allocation.

As background to support this hypothesis, significant sums were invested in the development of projects awarded through Round 3 and in Scottish Territorial Waters before EMR was introduced. Project sites were selected according to a range of different criteria, most notably in the case of Round 3 where large zones in deeper waters and further offshore were selected to promote economies of scale. It is notable that, at the time of writing, no new large scale offshore renewable energy project has entered development since the introduction of CfDs.

### 6.3 Impact of significant financial commitment obligation

The CfD contract also requires projects to meet a milestone demonstrating “significant financial commitment” 12 months after having been allocated a CfD. Evidence to demonstrate such a commitment has been met includes the production of invoices, payment receipts, and other supporting information that show the owners have spent ten percent or more of the total pre-commissioning costs in aggregate for the project.

The implications of this aspect of the CfD policy on project development have not yet been seen in practice. However, for independent developers, who are focused on the earlier phases of project development, this could present as

a potential barrier. For example, developers whose business model involves selling down a significant stake of a project post-consenting could be forced into a “distressed seller” position after receiving a CfD to ensure that contract milestones are met. While developers could mitigate this by arranging the transaction ahead of/simultaneously with the CfD auction process, it is debateable whether other, later-stage capital providers, would be willing to engage ahead of having the security of CfD allocation in place.

## 6.4 SUMMARY

Overall, the issues affecting project developers as a result of EMR are highly important for the realisation of the ISLES vision because, with the exception of a small number of potential projects in Irish waters, the generation assets are all at pre or early planning stage. Further, all projects appear to be under the ownership of independent developers, so both the issues of competitive allocation and significant financial commitment will impact on these projects’ plans.

If Northern Ireland decides not to implement the CfD in its strategic review, some risks outlined above that are specific to the CfD, such as the impact of significant financial commitment milestones, may not apply. However, competitive allocation risk is expected to affect all Member States’ subsidy regimes regardless of design from 2017, and the ability of any replacement regime to provide the same degree of protection against price risk in particular will have a significant impact on the availability of finance to generators in Northern Irish waters.

## ANNEX 1: CASE STUDIES OF EVOLUTION OF CAPITAL PROVIDERS THROUGHOUT THE PROJECT LIFECYCLE

All projects within the ISLES zone are pre-construction, at various stages of development. Therefore, they currently face a level of risk at the higher end of the spectrum experienced during a project's typical lifecycle, which limits the range of capital providers who would be interested in investing in projects at this point in time.

Further, the projects are being taken forward by independent developers, who may not have direct access to the necessary capital to progress the projects through to next phases of construction. This means that the developers will either have to raise finance themselves, and/or sell an interest in the project to entities with the necessary access to capital to fund construction. So that the most efficient forms of finance can be accessed, ahead of these transactions, there will be a need for the route to market for ISLES projects to be well-defined and supported by legislation (if not already) and provide a financeable proposition. Similarly, the regulation of transmission, transmission owner revenues and ongoing risks will need to be well-understood.

Outside of market providers of equity and debt, ISLES and its constituent projects may be able to access funding from Europe, under its PCI status through the CEF. The EIB in particular could also play an important role in financing projects in the ISLES zone, given its multi-jurisdictional nature, its focus on energy infrastructure, and availability of products for improving the credit risk of projects and their innovators. Domestic funds and initiatives may also have a strategic motivation for investing in ISLES, though only Ireland appears to have both the necessary funding capacity and longevity of relevant initiatives at present.

It is likely that projects will be taken forward on balance sheet, or through project finance models where this is considered viable. However, the impact of some CfD design choices under the EMR CfD may mean that independent developers find it increasingly difficult to develop new projects in the UK parts of the ISLES zone, which could mean increased reliance on the larger developers (i.e. power producers/utilities) for bringing new sites forward in the future.

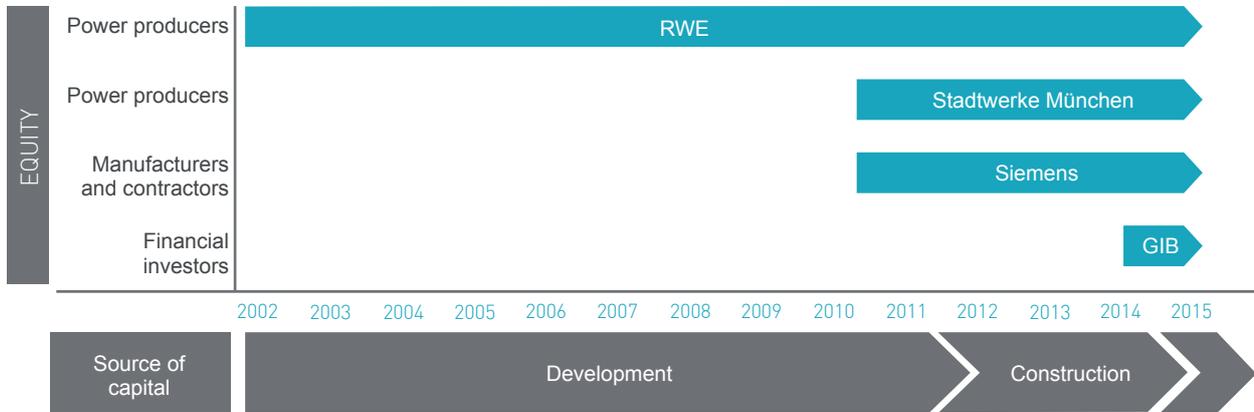
### 7.1 OVERVIEW

This annex provides details of two case study projects (integrated offshore wind generation and transmission projects in the UK) where capital providers have entered and exited the project at different points in the project lifecycle.

### 7.2 GWYNT Y MÔR

Gwynt y Môr, a 576 MW Round 2 project off the coast of North Wales, has used funding arrangements which are fairly typical of UK offshore wind farms to date. The development phase was funded from the balance sheet of Big Six integrated power producer RWE up to the point of construction. At this stage, when the capital commitment increases dramatically, RWE divested some of its holding. Stadtwerke München, a regional German integrated power company without a supply business in the UK took a 30% stake. Siemens, who won the contract to provide turbines and substations, also took a 10% stake. At the late stages of construction, GIB agreed to buy 10% of RWE's holding on completion of the project. This is summarised in Figure 5.

Figure 5: Gwynt y Môr offshore wind farm funding model



### 7.3 LINC'S

Lincs windfarm, another Round 2 project of 270 MW off the East coast of England has in comparison employed a more innovative funding model. Initial development was undertaken by independent developer RES, which Big Six integrated power producer Centrica then stepped in to fund. As with Gwynt y Môr, Centrica reduced its holding at the point of construction. Danish oil and gas and power producer DONG, which has a major presence in offshore wind and also recently launched an electricity supply business in the UK, took a 25% stake. A vehicle of Siemens, which supplied turbines and substations, also took 25%. Late in the construction phase, the owners refinanced their holding through non-recourse finance, in a quantity representing approximately 40% of the total capital investment, raised from a consortium of ten commercial banks including HSBC, BNP Paribas, Bank of Tokyo - Mitsubishi UFJ and DNB Bank amongst others. This was the first example of an offshore wind farm in the UK securing project finance pre-completion, and only the second example of any description. The evolution of the funding model for Lincs is illustrated in Figure 6.

Figure 6: Lincs offshore wind farm funding model



## NOTES

**NOTES**





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