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Glossary

Cumulative Impact Assessment (CIA)	Defines the consequences, positive or negative, of a combination of operations or developments on the environment.
Deadweight	Refers to outcomes which would have occurred without intervention.
Dependency Ratio	The dependency ratio or proportion of working age people measures the relationship between the productive element of a population and the economically dependent. The number of under 16s and those of pensionable age to every 100 people of working age.
Development	Refers to WTGs, inter-array cables, OSPs and the Offshore Export Cable and any other associated works (all elements associated with this application).
Development Area	The area which includes WTGs, inter-array cables, OSPs and initial part of the Offshore Export Cable and any other associated works (see Figure 1.2).
Displacement Effects	Measures the extent to which the benefits of a project are offset by reductions of output or employment elsewhere.
Economic Activity Rate	Measures the percentage of the population, both in employment and unemployed that represent the labour supply, and hence is a useful measure of the labour market opportunities available to the population.
Economic Study Area	Based on labour market catchment areas around locations considered as representative of the type of locations that may, with appropriate development and investment, be able to support the Development.
Gross Value Added (GVA)	The measure of the value of goods and services produced in an area, industry or sector of an economy
Job Density	Ratio of total jobs to population aged 16-64
Leakage Effects	Those jobs taken up by people from outside a specific area, e.g. Economic Study Area, rest of Scotland and rest of UK.
Mullier Effect	Further economic activity (jobs, expenditure or income) associated with additional local income and local supplier purchases.
Onshore Application Site	The area within the red line Planning Boundary comprising the Onshore Transmission Works (OnTW), as defined.
Onshore Transmission Works (OnTW)	All works within the Application Site, typically including underground electricity transmission cables connecting to an onshore substation and further underground cables required to facilitate connection to the national grid. This includes all permanent and temporary works required.
Substitution Effects	Like Displacement Effects, they measure the extent to which the benefits of a project are offset by reductions of output or employment elsewhere.

Abbreviations and Acronyms

AREG	Aberdeen Renewable Energy Group
BiFab	Burntisland Fabrications Limited
BOWL	Beatrice Offshore Windfarm Limited
CAPEX	Capital Expenditure
CEBR	Centre for Economics and Business Research
CIA	Cumulative Impact Assessment
EIA	Environmental Impact Assessment
EOWDC	European Offshore Wind Deployment Centre
ES	Environmental Statement
FTE	Full-Time Equivalent
GW	Gigawatt
GVA	Gross Value Added
HIE	Highlands and Islands Enterprise
HND	Higher National Diplomas
ICOL	Inch Cape Offshore Limited
LDP	Local Development Plan
MS-LOT	Marine Scotland Licensing Operations Team
MW	Megawatt
NNG	Neart na Gaoithe
NPF3	National Planning Framework 3
N-RIF	National Renewables Infrastructure Fund
N-RIP	National Renewables Infrastructure Plan
NRS	National Records of Scotland
NSRI	National Subsea Research Initiative
O&M	Operations and Maintenance
ONS	Office for National Statistics

OPEX	Operational Expenditure
ORE	Offshore Renewable Energy
OSP	Offshore Substation Platform
OfTW	Offshore Transmission Works
OnTW	Onshore Transmission Works
ORI	Offshore Renewables Institute
RSA	Regional Selective Assistance
RYA	Royal Yachting Association
SDP	Strategic Development Plan
SESplan	The SDP for Edinburgh South East Scotland
STW	Scottish Territorial Waters
UK	United Kingdom
WTG	Wind Turbine Generator

16 Socio-Economics

16.1 Introduction

1 This chapter presents the assessment of potential socio-economic impacts predicted to arise from the Inch Cape Wind Farm and associated Offshore Transmission Works (OfTW) (the Development).

2 This chapter includes an assessment of the direct and indirect impacts upon the economy of an Economic Study Area as defined in *Section 16.6.1* below, which is intended to provide a representative analysis for relevant areas within Scotland and the rest of the United Kingdom (UK).

3 The following appendices and chapters, as well as the introductory chapters (*Chapters 1-8*), should be read in conjunction with this chapter:

- *Appendix 16A: Inch Cape Supply Chain Assessment*; and
- *Chapter 15: Shipping and Navigation.*

16.2 Consultation

4 Scoping responses relating to socio-economics were received from Marine Scotland Licensing Operations Team (MS-LOT) on 28 July 2017 which included a response from The Royal Yachting Association (RYA) Scotland. Table 16.1 summarises the responses received from the RYA and MS LOT's formal Scoping Opinion.

Table 16.1: Scoping responses and Inch Cape Offshore Ltd (ICOL) responses

Consultees	Scoping Response	ICOL Response
RYA Scotland / MS-LOT	RYA Scotland notes that the Scottish Marine Recreation and Tourism Survey was published in 2015 (Scottish Government, 2015b) and contains mapped information about a wide range of recreational activities. A strategic framework for Scotland's Marine Tourism Sector has also been published. RYA request that the framework should be consulted to confirm the results do not result in material change in socio-economic activity. **The Scottish Ministers agree with the RYA and subject to this confirmation, The Scottish Ministers agree that the review of new data as outlined in the Scoping Report is sufficient to conclude there has been no material change in the socio-economic activity in the area.** RYA Scotland note that it is unclear whether there will be significant	The 2015 Survey and the framework have been consulted as part of the assessment, finding there to be no material change in the socio-economic activity in the area since 2013. As such, in line with the Scoping Opinion this survey and framework does not need to be considered within the chapter.

Consultees	Scoping Response	ICOL Response
	cumulative impact of a series of hazards from UK and foreign recreational sailors passing up the east coast of Scotland on passage for the Northern Isles or Caledonian Canal. Certain areas may require increased watchkeeping effort, such as the Kincardine Floating Wind Scheme and the Aberdeen Offshore Wind Farm. **Ministers note that no evidence is provided to indicate that this is likely to be a significant effect. The Scottish Ministers agree with the receptors and potential impacts to be included within the impact assessment and are satisfied that this covers the potentially significant impacts from the Development.**	The scope of this assessment focusses on that as identified in the Scoping Report (see Table 16.2 below) which is consistent with the Ministers' position and their Scoping Opinion.

16.3 Scope of Assessment

5 As part of this application ICOL has drawn on the detail presented in the Scoping Report and subsequent Scoping Opinion (Marine Scotland, 2017) from MS-LOT to agree on those impacts that may lead to a significant effect as a result of the construction, operation and decommissioning of the Development.

6 For clarity, those impacts that have been agreed to be scoped in to the Environmental Impact Assessment (EIA) are included below in Table 16.2 and those agreed to be scoped out are included in Table 16.3. For further information, reference should be made to the Scoping Report and the Scoping Opinion which can be found on Marine Scotland's website. At the time of writing these documents can be found at this link:

http://www.gov.scot/Topics/marine/Licensing/marine/scoping/ICOLRevised-2017

Table 16.2: Scope of assessment covered in this chapter

Potential Impact	Scope of Assessment	Reason
Construction (& Decommissioning) Phase		
Construction Employment	Impact on employment within the Economic Study Area. These impacts are defined in terms of Full-Time Equivalent (FTE) jobs and economic output measured by the Gross Value Added (GVA) generated by those jobs.	Taking into account the likely residual positive impacts from the Development, it is considered that the impacts on construction employment should be scoped in to the EIA.

Potential Impact	Scope of Assessment	Reason
Wider Economic Impacts	Employment and income generated in the economy related to the wider role of the Development in influencing economic activities including wider socio-economic impacts.	Taking into account the likely residual positive impacts from the Development, it is considered that the impacts on the wider economy should be scoped in to the EIA.
Cumulative Construction Employment and Economic Impacts	The in-combination impact of the Inch Cape Wind Farm, OfTW and Onshore Transmission Works (OnTW), together with relevant projects off the east coast of Scotland.	Taking into account the scale of the projects to be considered in the Cumulative Impact Assessment (CIA), it is considered that there will be potentially significant positive cumulative impacts associated with the construction phase of the Development and OnTW alongside other relevant projects. Therefore, the assessment will be scoped in for the CIA.
Operations & Maintenance Phase		
Operation and Maintenance (O&M) Employment	Impact on employment within the Economic Study Area. These impacts are defined in terms of FTE jobs and economic output measured by the GVA generated by those jobs.	Taking into account the likely residual positive impacts from the Development, it is considered that the impacts on employment during the O&M phase of the Inch Cape Wind Farm should be scoped in to the EIA.
Wider Economic Impacts	Employment and income generated in the economy related to the wider role of the Development in influencing economic activities including wider socio-economic impacts.	Taking into account the likely residual positive impacts from the Development, it is considered that the impacts on the wider economy during the O&M phase of the wind farm should be scoped in to the EIA.
Cumulative O&M Employment and Economic Impacts	The in-combination impact of the Development and OnTW, together with relevant projects off the east coast of Scotland.	Taking into account the scale of the projects to be considered in the CIA, it is considered that there will be potentially significant positive cumulative impacts associated with the O&M phase of the Development and OnTW, alongside other relevant projects. Therefore, the assessment will be scoped in for the CIA.

Table 16.3: Impacts scoped out of this chapter

Potential Impact	Justification for Scoping out of the EIA
Tourism and recreation visual impacts	Consideration of the potential for tourism and recreation visual effects during the construction (and decommissioning) phase and the O&M phase has been scoped out of the assessment after agreement by MS-LOT in their Scoping Opinion that it is not required subject to confirmation that the Scottish Marine Recreation and Tourism Survey published in 2015 and strategic framework for Scotland's Marine Tourism Sector is consulted to confirm the results do not result in a material change in the socio-economic activity. This has been consulted and it can be confirmed that they do not result in a material change. Assessment of this potential impact has therefore been scoped out of the EIA after agreement with consultees through scoping that it is unlikely to lead to significant effects.
Tourism accommodation impacts	Consideration of the potential for tourism accommodation impacts during the construction (and decommissioning) phase and the O&M phase has been scoped out of the assessment after agreement by MS-LOT in their Scoping Opinion that it is not required subject to confirmation that the Scottish Marine Recreation and Tourism Survey published in 2015 and strategic framework for Scotland's Marine Tourism Sector is consulted to confirm the results do not result in a material change in the socio-economic activity. This has been consulted and it can be confirmed that they do not result in a material change. Assessment of this potential impact therefore has been scoped out of the EIA after agreement with consultees through scoping that it is unlikely to lead to significant effects.

16.4 Regulation and Guidance

7 A detailed review of legislation, charters, conventions and planning documents have been provided in *Chapter 2: Policy and Legislative Context* and *Chapter 3: Regulatory Requirements*. For the purposes of this chapter a wide range of regulations and guidance relevant to the Economic Study Area have been considered including the following:

- National Plans, Policies and Guidance:
  - *Scottish Energy Strategy (2017);*
  - *2020 Routemap for Renewable Energy in Scotland - Update (2015);*

- *Scotland's Offshore Wind Route Map (2013);*
- *Scotland's Economic Strategy (2015);*
- *National Planning Framework 3 (2014);*
- *National Renewables Infrastructure Plan (2010);* and
- *National Renewables Infrastructure Fund (2012).*

- Regional Plans, Policies and Guidance:
  - *The Strategic Development Plan (SDP) for Edinburgh South East Scotland (SESplan) (2013);*
  - *Edinburgh Local Development Plan 2016;*
  - *Edinburgh's Economic Strategy 2012-2017;*
  - *Fife's Economic Development Strategy 2005-2015;*
  - *Fife's Economic Development Strategy 2017-2027;*
  - *Dundee's Economic Strategy and Action Plan 2013-2017;*
  - *TAYplan Strategic Development Plan 2016-2036;*
  - *Angus Local Development Plan 2016;*
  - *Angus Economic Development Strategy 2013-2020;*
  - *Highlands and Islands Enterprise (HIE) Operating Plan 2017-2018;*
  - *Aberdeen City and Shire Economic Action Plan 2013-2018;*
  - *Aberdeen Local Development Plan 2017;* and
  - *Aberdeenshire Local Development Plan 2017.*

8 The following sections will give a brief overview of the above regulations and guidance focusing on those parts of the regulations and guidance that are relevant to the Socio-Economic Assessment.

16.4.1 National Plans, Policies and Guidance

Scottish Energy Strategy: The future of energy in Scotland

9 Published in December 2017, Scotland's first *Energy Strategy* sets out the Scottish Government's vision for the future energy system in Scotland. It articulates six energy priorities, including championing Scotland's renewable energy potential, for a whole-system approach that considers both the use and the supply of energy for heat, power and transport (Scottish Government, 2017c).

2020 Routemap for Renewable Energy in Scotland – Update (2015)

10 The Scottish Government's target for renewable electricity generation is for renewables to generate the equivalent of 100 per cent of gross annual consumption by 2020.

11 The updated *2020 Routemap for Renewable Energy in Scotland* highlights the increasing promise of offshore wind as a source of renewable energy which can be used to meet the Scottish Government's target and also highlights that offshore wind can be a source of huge economic value to Scotland (Scottish Government 2015a).

Scotland's Offshore Wind Route Map (2013)

12 It is estimated that the seas surrounding Scotland have around 25 per cent of Europe's offshore wind potential (Scottish Government, 2013). This provides a significant opportunity for economic growth in Scotland that has the *"potential to attract billions of pounds of investment and create tens of thousands of highly skilled, sustainable jobs"* (Scottish Enterprise, 2013).

13 *Scotland's Offshore Wind Route Map* which was updated in 2013 provides an update of where the industry is at in terms of opportunities, challenges and priority recommendations for action to ensure that Scotland fulfils its full potential and exploits the above opportunity.

14 Key areas of action discussed within the updated Route Map include:

- Investment in infrastructure;
- Appropriate supply chain;
- Ongoing innovation of technology and practices;
- Regulation of and access to the electricity grid;
- Managing the marine environment;
- Skills;
- Finance; and
- Securing support of local communities and existing users of the sea.

15 The updated Route Map provides a progress update with regards to the key areas for action. This update shows that significant progress has been made, however it is clear that there are still several difficult challenges that remain such as the ability to unlock private investment for the development of port and manufacturing facilities, supply chain uncertainty that exists while port and manufacturing facility projects await consents, lack of intelligence about specific skills demands and job opportunities and funding opportunities to name a few.

Scotland's Economic Strategy (2015)

16 The ambition of *Scotland's Economic Strategy* (updated in 2015) is to *"create a more cohesive and resilient economy that improves the opportunities, life chances, and wellbeing of every citizen in our country".* Whilst, its purpose it to create *"a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth".* The approach of the Strategy is *"based on two key pillars: increasing competitiveness and tackling inequality"* (Scottish Government, 2015c). Within the Strategy

there are also four key priority areas where their actions will be targeted to deliver sustainable economic growth. These keys areas are:

- An economy where growth is underpinned by long-term sustainable investment in people, infrastructure and assets;
- An economy where growth is based on innovation, change and openness to new ways of doing things;
- A society that promotes inclusive growth and creates opportunity through a fair and inclusive jobs market and regional cohesion to provide economic opportunities across all of Scotland; and
- A country with an international outlook and focus, open to trade, migration and new ideas.

National Planning Framework 3 (2014)

17 NPF3 is a long-term strategy for Scotland. It is the spatial expression of the Government Economic Strategy, and of the plans for development and investment in infrastructure. NPF3 identifies national developments and other strategically important development opportunities in Scotland.

18 NPF3 Enterprise Areas are a priority action area within NPF3, one such area is the Low Carbon/Renewables East Enterprise Area which includes Dundee Port and the Port of Leith.

19 The NPF3 strategy for a successful, sustainable place highlights the particular scope for the cities network to progress their economic agenda. Focusing on the creation of opportunities for all of Scotland to flourish, including areas which have, in the past, experienced decline. To support this, two national developments are taken forward including Dundee Waterfront. Plans for the waterfront support several of the NPF3 objectives, including: regeneration, high quality placemaking, improvements to the public realm, better connections, and support for the low carbon economy.

20 Spatial priorities for change including the economic opportunities arising from the transition to a low carbon economy emerging in our coastal areas such as ports and harbours that have been identified in NPF3 as having potential for renewables-based investment, including Montrose, Methil and Burntisland.

21 NPF3 also highlights Aberdeen Harbour as one of Scotland's key gateways. As such, expansion of Aberdeen Harbour, including improved intermodal connections by road, is identified as a national development.

National Renewables Infrastructure Plan (2010)

22 *National Renewables Infrastructure Plan* (N-RIP) stages 1-3 were undertaken to set out a group of best fit port locations based on industry requirements and a short process to develop investment cases for ports that can support the development of the offshore wind, wave and tidal industry.

23 N-RIP also set out investment required for the best fit locations identified in stage 1, with the public sector pump-priming investment approach for these sites and the key planning and consenting steps that have to be taken to deliver these sites in a timeframe that makes the attraction of private investment achievable. The report clusters together the ports identified in stage 1 into three clusters: Forth/Tay, West Coast and Moray Firth. The three clusters were indicated to be the key manufacturing, installation and operation and maintenance locations. Market interest was indicated to be strongest in the Forth/Tay and Moray Firth clusters, therefore these clusters should be the focus for initial investment. In addition, a fourth, existing, subsea cluster exists focussed on Aberdeen and Peterhead and these locations amongst others are used by companies which will bring expertise to offshore wind installation and operations and maintenance (O&M) processes. Some offshore wind manufacturing is also thought possible in this area.

24 In addition to this N-RIP was undertaken to develop and deliver investment packages driven by the asset owner with appropriate public investment where required. Key planning and consenting issues were to be progressed to ensure that users' timescales could be met and sites developed sustainably. This investment was to be based on an assessment of market interest. The regional port cluster approach detailed in the stage 2 report was to be further developed and used to draw more supply chain interest to Scotland.

25 With regards to the Economic Study Area discussed within this chapter, the stage 2 report identifies Leith Docks area as a strong location for large scale manufacturing, installation activities and O&M for the renewables industry. Other ports identified include the Port of Dundee, Aberdeen Port and the Energy Park, Fife at Methil.

National Renewables Infrastructure Fund (2012)

26 The Scottish Government through Scottish Enterprise and HIE created the £70 million National Renewables Infrastructure Fund (N-RIF) in 2012 to lever in private sector investment to the key port demonstration and manufacturing infrastructure prioritised in the N-RIP (Scottish Enterprise 2012). This fund is in addition to Regional Selective Assistance (RSA) and other funding that is available for companies in some areas, with the aim of creating and supporting new employment in the industry.

Scotland's National Marine Plan

27 *Scotland's National Marine Plan* was published in March 2015 (Scottish Government, 2015d). The Plan provides a comprehensive overarching framework for all marine activity in Scottish Territorial Waters (STW) including the potential for economic activity in the marine environment and the careful consideration that this requires, to ensure that developments are taken into account, appropriately and proportionately, in marine decision making.

16.4.2 Regional Plans, Policies and Guidance

28 The defined Economic Study Area, discussed in *Section 16.6.1* below, is made up of 23 local authority areas, as such this section will firstly discuss regulations and guidance from local authority areas that have locations within that are considered as representative of the type

of locations that may, with appropriate development and investment, be able to support the offshore wind sector (See Table 16.4 below). In addition, relevant regulations and guidance from the other local authorities whose boundaries lie within the Economic Study Area will be discussed or listed below.

Table 16.4: Regional and local regulation and guidance

Local Authority	Strategies, Plans, and Guidance	Key Aims and Objectives
Edinburgh, City of (includes the representative location of Leith)	The SDP for South East Scotland (SESplan) (2013)	The SDP is intended to set out a vision statement on the future development of the SESplan area (City of Edinburgh, East Lothian, Fife, Midlothian, Scottish Borders and West Lothian), along with a Spatial Strategy on the future development and land use within the area, taking into account cross-border relationships. The SDP Capital City vision is that *"by 2032, the Edinburgh City Region is a healthier, more prosperous and sustainable place which continues to be internationally recognised as an outstanding area in which to live, work and do business"* The SDP has 8 aims to deliver this vision, 2 of which are especially relevant to socio-economics: • Enable growth in the economy by developing key economic sectors, acting as the national hub for development and supporting local and rural development; and • Promote the provision of improved infrastructure to enhance connectivity within the area, between the area and other parts of the UK and elsewhere to support economic growth and meet the needs of communities. The Spatial Strategy Regional Core area includes the Edinburgh Waterfront area, focusing on the potential of Leith as a location for the manufacturing of offshore wind infrastructure.
	Edinburgh Local Development Plan (LDP) 2016	The LDP is consistent with the SDP and has a key role in helping to meet its aims and deliver its strategy. The LDP identifies seven 'special economic areas', all of which are of national or strategic economic importance, providing or with the potential to provide a significant number of jobs. Leith Docks are identified as a 'special economic area', the main purpose of this area is identified for business and industry. The plan sets out the main proposals, anticipated changes and key investment opportunities for the Edinburgh Waterfront area, including Leith Docks as an area with potential to accommodate major operations, supported by other east coast ports.

Local Authority	Strategies, Plans, and Guidance	Key Aims and Objectives
	Edinburgh's Economic Strategy 2012-2017	Edinburgh's economic strategy 2012-17, aims to achieve sustainable economic growth through investment in jobs. The Council and its partners are working towards this goal in four ways: • Investing in the city's development and regeneration; • Supporting inward investment; • Supporting businesses; and • Helping unemployed people into work or learning. In terms of the goal of supporting inward investment, one of the Strategies priority outcomes is to establish Edinburgh and Fife among the Scottish centres of excellence in renewable energy. In addition to this, one of the priority outcomes of the supporting businesses goal is that *"the city's universities will demonstrate innovation in knowledge sectors such as renewable energy".*
Fife (Includes the representative locations of Rosyth, Methil and Burntisland)	SESplan 2013	As part of the SDP, the Energy Park Fife at Methil is identified as a key location for the research and development of renewable energy technologies and is promoted as a 'centre of excellence' in Scotland for these activities.
	FIFEplan 2017	The plan states that Fife will continue to be a leading centre in the field of low carbon developments with the University of St Andrews' proposal for low carbon and sustainable energy related research, development, and industry expected to be an important addition to Fife's assets in energy and renewables. This will complement the Energy Park at Methil which is a key component of the NRIP.
	Fife's Economic Development Strategy 2005-2015	The Strategy focuses on the need to *"create the conditions necessary for sustainable economic growth within Fife, to maximise the skills of Fife's people and to attract and retain skilled talent to the area"*. The Strategy determined that key economic challenges and opportunities for Fife were: • Improving skills, productivity and business growth and continuing to improve the business start-up rate;

Local Authority	Strategies, Plans, and Guidance	Key Aims and Objectives
		• Creating a more diverse, high value economy; • Maximising investment in St Andrews World Class, Rosyth Waterfront, John Smith Business Park and the Renewable Energy Park at Methil; • Sustaining the manufacturing industry and ensuring that Fife is ready to meet the challenges of the growing service sector; and • Creating a knowledge economy in Fife.
	Fife's Economic Development Strategy 2017-2027	The updated Strategy is a joint Fife Economy Partnership, Opportunities Fife Partnership and Fife Council strategy. It sets out how they will work together, as well as with the Scottish Government, its national agencies and with their city region partners over the next 10 years to achieve sustainable and fair economic growth for Fife. This Strategy identifies four priority areas where actions will be targeted in order to make a difference: • Achieving fairer, more inclusive growth; • Increasing investment in Fife's business infrastructure; • Improving business growth through increased internationalisation, sales and exports; and • Fostering a culture of innovation and enterprise. One of the key sectors Fife will focus its economic development and employability efforts on is energy and renewables as *"Fife is one of the country's leading centres for energy, low carbon and renewables with a strong and growing profile of low carbon businesses, a range of site development locations and world-class training and research facilities"*. The support from the Strategy will be targeted through the *"promotion of Fife's competitive advantage in energy and renewables to encourage further inward and mobile investment"*.
City of Dundee	Dundee LDP 2014	The Development Plan for Dundee consists of two documents; the SDP (TAYplan) and the LDP. The TAYplan is discussed below. The LDP supports existing employment activity and encourages further growth through the

Local Authority	Strategies, Plans, and Guidance	Key Aims and Objectives
		designation of appropriate and effective Economic Development Areas. The LDP expects there to be a strong cause for optimism within Dundee with expected increased employment to be generated in the Renewable Energy Sector. The LDP also identifies Dundee as a key location for offshore renewable energy (ORE) related developments, stating that the City is well equipped with sites and facilities and a number of specific measures are in place to accommodate this category of development.
	Dundee's Economic Strategy and Action Plan 2013-2017	The focus of the Strategy and Action Plan is on *"delivering economic recovery & growth and the creation of employment opportunities that people have the qualifications and skills to access".* One of the intended objectives of the Strategy and Action Plan is to make *"Dundee a leading centre for the offshore renewables industry in the UK".* Key Action Areas that the Dundee Partnership have undertaken or plan to undertake to achieve the objective include: • Promote Dundee through the activities of the Dundee Renewables partnership (website, publicity material, attendance at major events); • Work in partnership with 10 local authorities through East Coast Renewables to promote the east coast as a viable location; • Encourage companies to register in Dundee Renewables Green Directory and Scottish Enterprise's Offshore Renewables Supply Chain Directory; • Encourage participation in Scottish Enterprise's Offshore Wind Expert Support Programme; • Develop a comprehensive range of training and support opportunities through Energy Training East, an alliance of Tayside's 5 Universities and Colleges; and • Create a leading academic centre – the Offshore Renewables Institute (ORI) – based at the University of Dundee.

Local Authority	Strategies, Plans, and Guidance	Key Aims and Objectives
	TAYplan SDP 2016-2036	The approved Plan sets the overall planning vision for the next 20 years for the whole Dundee and Perth area, including North Fife and parts of Angus and Perth and Kinross. The TAYplan vision is that by 2036, the TAYplan area will be sustainable, more attractive, competitive and vibrant without creating an unacceptable burden on our planet. The quality of life will make it a place of first choice where more people choose to live, work, study and visit and where businesses choose to invest and create jobs. This Plan sets out a spatial strategy to deliver a sustainable pattern of development which says where development should and should not go in order to deliver the vision and the outcomes which underpin it. Policy 10 of the Plan has specific significance in terms of socio-economics in that it states that the LDP should enhance connectivity of people, places and markets by: A. safeguarding land at Dundee and Montrose Ports, and other harbours as appropriate, for port related uses to support sea freight, economic growth in the port, ORE and offshore oil and gas sectors, and, maritime trade, recreation and tourism.
Angus (Includes the representative location of Montrose)	Angus LDP 2016	TAYplan SDP provides the strategic context for the preparation of the Angus LDP (ALDP). The ALDP guides development for 10 years following adoption, up to 2026. The plan sets out where land is being allocated to meet development needs and where new development should and should not happen. Policy M6 of the Plan has specific significance in terms of socio-economics in that it safeguards Montrose Port for port related uses. Development proposals which enhance the commercial and economic role of the Port will be supported where these are compatible with adjacent land uses.
	Angus Economic Development Strategy 2013-2020	The Strategy maps out how the Angus Community Planning Partnership intends to continue to develop the area for the coming years, setting out the key priorities, challenges and opportunities.
Highlands (Includes the representative location of the Cromarty Firth)	HIEOperating Plan 2017-2018	The HIE Operating Plan 2017-18 sets out *"four strategic priorities, and shows how these align with the key themes of investment, innovation, internationalisation and inclusive growth at the heart of Scotland's Economic Strategy"*. The priorities of the Plan are:

Local Authority	Strategies, Plans, and Guidance	Key Aims and Objectives
		• Supporting businesses and social enterprises to shape and realise their growth aspirations; • Strengthening communities and fragile areas; • Developing growth sectors, particularly distinctive regional opportunities; and • Creating the conditions for a competitive and low-carbon region. In terms of developing growth sectors, particularly distinctive regional opportunities, one of their priorities in the present year is investment in Energy focusing on: • Supporting excellence in test and demonstration activity associated with offshore developments in marine, floating wind, subsea and decommissioning sectors; • Supporting oil and gas internationalisation, diversification into renewables and exploring decommissioning opportunities; • Building on the success of Wave Energy Scotland to accelerate the establishment of a sustainable wave energy sector in Scotland; • Securing significant economic growth through supply chain engagement in large-scale energy projects, whilst actively promoting international opportunities through matching company capabilities with markets in priority geographies; • Ensuring the delivery of flagship demonstration projects in low carbon local energy systems; and • Continued partnership working with the Scottish Government, industry and stakeholders to support a transition to a low carbon energy economy.
Aberdeen City/Aberdeenshire	Aberdeen City and Shire Economic Action Plan 2013-2018	The Plan sets out the vision for the area, which is: *"By 2035 Aberdeen City and Shire will be an even more attractive, prosperous and sustainable European city region and an excellent place to live, visit and do business. We will be recognised for:* • our enterprise and inventiveness, particularly in the knowledge economy and in high-

Local Authority	Strategies, Plans, and Guidance	Key Aims and Objectives
		value markets; • the unique qualities of our environment; and • our high quality of life. *We will have acted confidently and taken the courageous decisions necessary to further develop a robust and resilient economy, and to lead the way towards development being sustainable, including dealing with climate change and creating a more inclusive society".* A key target of the Plan is to achieve an annual economic growth rate of 2.5 per cent. To achieve this level of economic growth, key sectors will include the energy sector and the action plan will utilise and focus on the energy position of Aberdeen City and Shire as a global energy hub, building on the world class expertise of the oil and gas industry and growing the offshore energy supply chain for renewables.
	Aberdeen LDP 2017 / Aberdeenshire LDP 2017	The Aberdeen LDP and Aberdeenshire LDP provide a land use framework within which the Aberdeen City and Shire Strategic Development Plan can be worked towards. The Aberdeen LDP recognises Aberdeen Harbour as playing a critical role in the economy of Aberdeen and Scotland as a whole. It is a gateway for trade linking with over 40 countries, and an important point of access for the offshore energy industry. Policy B5 – Aberdeen Harbour of the Aberdeen LDP states that there will be a presumption in favour of harbour infrastructure and ancillary uses, which are required for the effective and efficient operation of the harbour and which have a functional requirement to be located there. This may include administrative offices, warehousing and storage (including fuel storage), distribution facilities and car/HGV parking. Other harbour-related uses will be treated on their merits. The Aberdeenshire LDP amongst other things helps to support the area to grow as an international centre for the oil and gas industry, to spread into the renewables sectors, and improve the knowledge and service sectors.

29 In addition to those regulations and policies included in Table 16.4 above, relevant regulations and guidance from the other local authorities whose boundaries lie within the Economic Study Area include the *East Lothian Economic Development Strategy 2012-2022* (East Lothian Council, 2012) which acknowledges that East Lothian has historically been an affluent area with strong links to the economic development and opportunities provided by the City of Edinburgh which has resulted in a lack of focus on the economic development of the area. The impact of the 2008 recession has changed that, as such the economic strategy aims to enhance the role that economic development has.

30 One of the issues identified in the strategy is the anticipated future employment losses from the closure of Cockenzie and Torness power stations. The strategy acknowledges that for East Lothian to become the most sustainable local economy it must develop new low carbon sectors to cope with this change to the labour market. Renewable energy is also identified as one of the key sectors that needs to be developed.

31 Other relevant plans from local authorities whose boundaries lie within the Economic Study Area include:

- *East Lothian Local Plan 2008*;
- *East Lothian Proposed Development Plan*;
- *West Lothian Local Plan 2009*;
- *West Lothian Economic Strategy 2010-2020*;
- *Midlothian Local Development Plan 2017;*
- *North Lanarkshire Local Plan 2012*;
- *Falkirk Local Development Plan 2015;*
- *Falkirk Economic Strategy 2015-2025*;
- *Perth and Kinross Local Development Plan 2014*;
- *Moray Local Development Plan 2015*;
- *Stirling Local Development Plan 2014;*
- *Clackmannanshire Local Development Plan 2015*;
- *East Dunbartonshire Local Development Plan 2017;*
- *West Dunbartonshire Local Plan 2010;*
- *East Renfrewshire Local Development Plan 2015*;
- *Renfrewshire Local Development Plan 2014*;
- *Glasgow and Clyde Valley Strategic Development Plan (Clydeplan) 2017*;
- *Glasgow City Development Plan 2017*;
- *South Lanarkshire Local Development Plan 2015*;

- *Scottish Borders Local Development Plan 2016*; and
- *Scottish Borders Economic Strategy 2023*.

32 The plans and strategies identified above set out amongst other things the economic objectives for the local authority areas. Objectives include:

- Grow innovative, competitive and sustainable businesses;
- Promote and manage sustainable economic growth;
- Ensure availability of infrastructure to support growth;
- Set out plans to broaden and diversify the industrial base;
- Identify new sectors and opportunities for growth;
- Promote innovation and the application of new technologies;
- Highlight the area's potential and means to attract investment;
- Stimulate further development in the skills and experience of the authority's people;
- Developing the workforce for the future.

16.5 Design Envelope and Commitments

16.5.1 Design Envelope

33 It is anticipated that the Development will consist of up to 72 Wind Turbine Generators (WTGs), on steel or concrete cylindrical towers or steel lattice (jacket) substructures, supported on gravity base or piled foundations (including monopiles), up to 190 km of inter-array cables, up to two Offshore Substation Platforms (OSPs) and up to two export cables with a construction programme of 24 months within a 3 year period.

34 In order to follow EIA Regulations, this socio-economic assessment is based on the minimum generating capacity considered for the Development which is 560 Megawatt (MW[1]) (e.g. in terms of economic impacts this would be considered the lowest or the worst case scenario associated with the Development). It should be noted that the expected Development capacity will be greater than this. Based on the current existing grid connection agreement the capacity will be around 700 MW, although it should be noted that this grid connection agreement may be altered during the final design process.

16.5.2 ICOL's commitment to supporting the Scottish Economy

35 ICOL's commitment for the Development will seek to benefit local and national opportunities associated with the Development, and are as follows:

- ICOL will support a protocol to give local contractors the opportunity to tender for appropriate work arising from the Development Construction (& Decommissioning)

[1] ICOL are not including a minimum MW within their design envelope application and this number is provided as a realistic minimum for the purposes of the EIA only.

Phase, and Operation & Maintenance Phase. The protocol will ensure that local contractors with the relevant skills and experience will be able to access the procurement process through "meet the buyer" events and other initiatives; and

- ICOL has worked closely with Scottish economic development agencies to promote opportunities since the inception of the project and this approach will continue throughout the life of the Development.

16.6 Baseline Environment

36 In order to assess the economic impacts of the Development for the EIA, the baseline environment first needs to be identified. The following sections identify the Economic Study Area and the baseline receptors within this area.

16.6.1 Economic Study Area

37 At the time of writing the final selection of facilities required for the Development has not yet been determined. Instead, ICOL are exploring Scottish ports, facilities, supporting infrastructure and labour markets to understand the potential capability, capacity and availability of each. Subject to these factors, the most likely scenario is that a port or a range of ports and facilities along the east coast of Scotland will be used to support elements of the construction, O&M, and decommissioning phases of the Development as part of a global supply chain. It is likely that ports and facilities nearer the Development Area will be used to support O&M for the Development.

38 Since it is not possible, at this stage, to provide an assessment based on firm locations for the facilities, an Economic Study Area has been defined based on the labour market catchment areas (60 minute drive-time catchments) around eight locations considered as representative of the type of locations that may, with appropriate development and investment, be able to support the offshore wind sector. These locations are Leith (Edinburgh), Rosyth (Fife), Dundee, Montrose, Methil, Burntisland, the Cromarty Firth (Highland) and Aberdeen (shown in Figures 16.1- 16.3 below).

39 Selection of actual facilities will be subject to ongoing engineering and procurement considerations and the use of representative facilities for the purposes of this assessment does not indicate any preference or imply any decision.

40 In terms of the OnTW, the Economic Study Area is predominantly the Preston/Seton/Gosford Ward 2007 (shown in Figure 12.1 of Chapter 12 of the OnTW EIA Report), but wider supply chain activity and specialist employment may also be generated in the East Coast of Scotland and further afield. This is fully considered within Chapter 12 of the OnTW EIA Report; however, the CIA within *Section 16.9* below considers GVA and job numbers for the Development and the OnTW.

Figure 16.1: Illustration of Economic Study Area

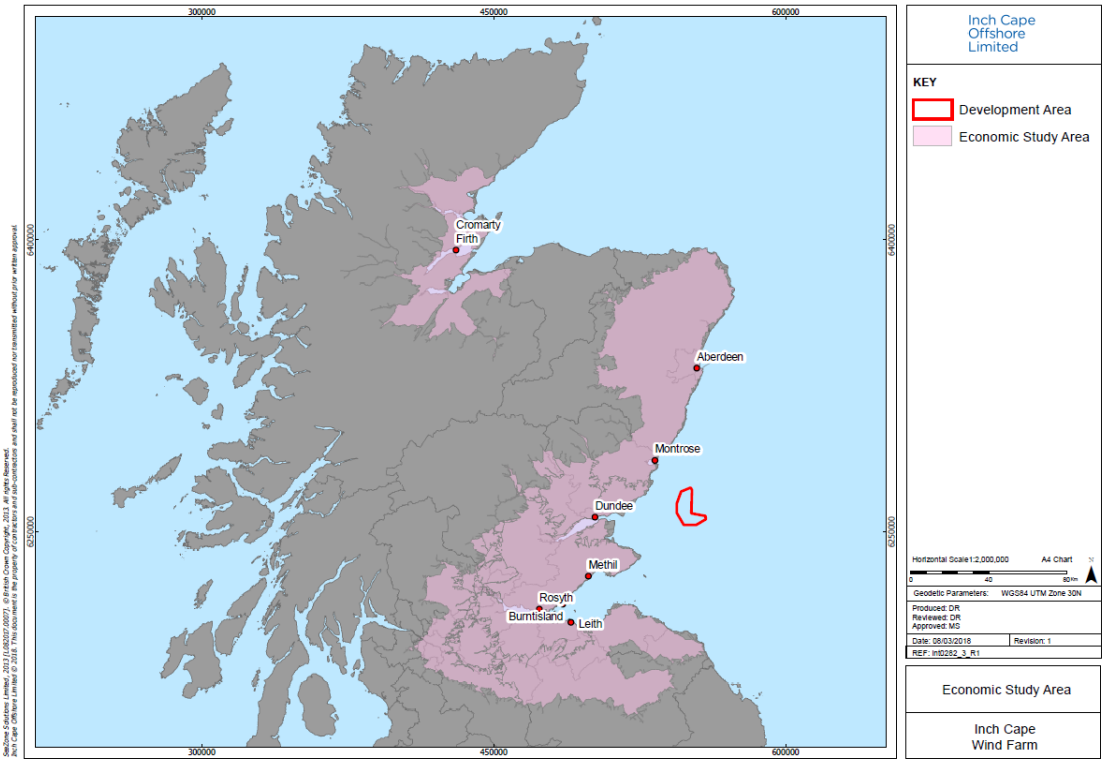


Figure 16.2: Labour market catchment areas

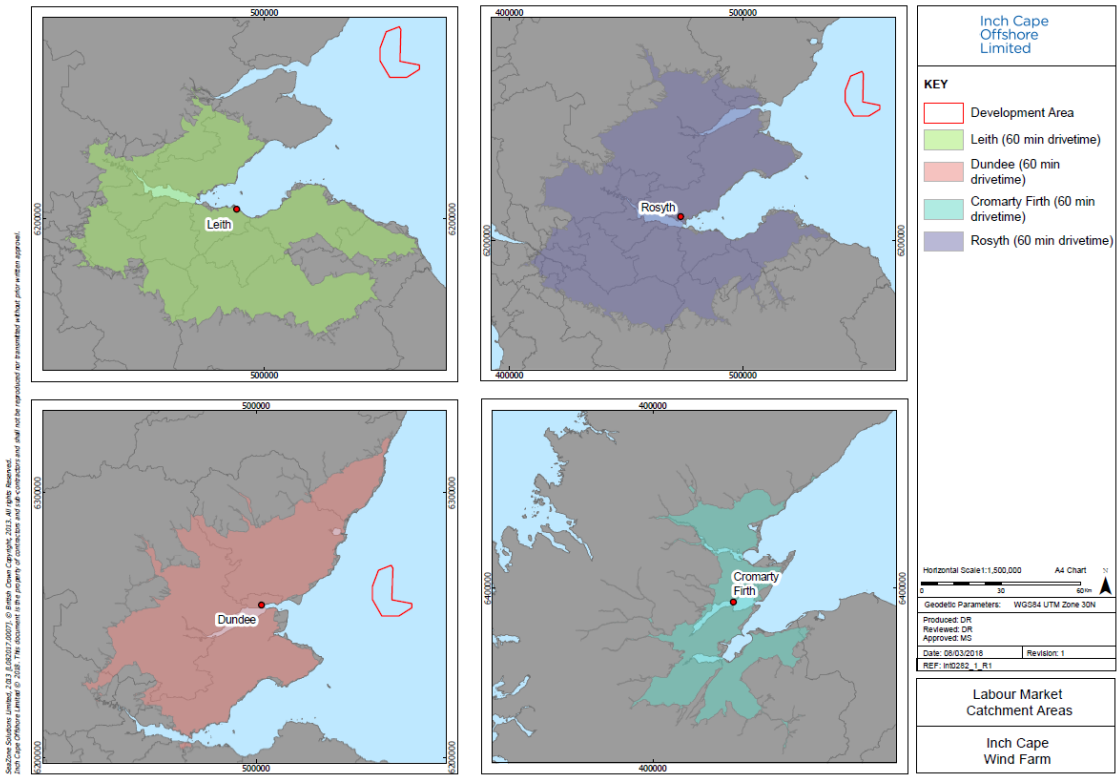
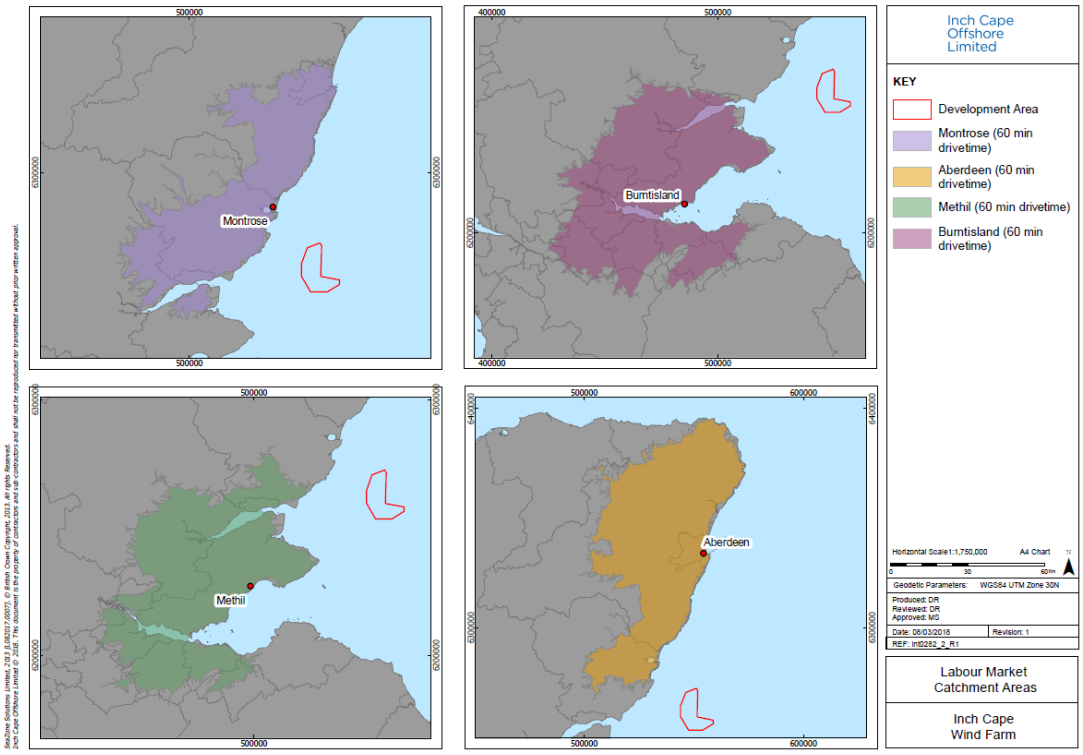


Figure 16.3: Labour market catchment areas



41 The eight labour market catchment areas that collectively form the Economic Study Area cross local authority boundaries within Scotland. Relevant local authority areas are Edinburgh, the Lothians, North Lanarkshire, Falkirk, Fife, City of Dundee, Angus, Aberdeen City, Aberdeenshire, Moray, Highland, Perth & Kinross, Stirling, Clackmannanshire, East Dunbartonshire, West Dunbartonshire, East Renfrewshire, Renfrewshire, Glasgow City, South Lanarkshire and the Scottish Borders. Statistics are used where relevant for these local authority areas to provide baseline information.

42 The impacts and effects identified through the assessment are set within the wider context of the Scottish economy as a whole. Assessments at a Scottish level are used for cumulative assessment since impacts can be meaningfully combined at this level and cannot be combined at Economic Study Area level since these are unique for each project.

16.6.2 Data Sources

43 Data sources used to identify baseline conditions include the following publicly available data:

- Development policies and strategic Plans at national and regional levels that are relevant to the assessment;
- Office for National Statistics (ONS) data covering the period 2016 to 2017 (ONS, 2017a and 2017b);
- National Records of Scotland (NRS); and

- Scotland's Census 2011 Area Profiles.

16.6.3 Overview of baseline

44 The remainder of this section presents the baseline conditions for the socio-economic activities across the Economic Study Area described above.

16.6.4 Receptors

45 The following baseline conditions will be considered within the socio-economic baseline environment:

- Population and age structure;
- Economic activity;
- Employment structure;
- Job density;
- Industry structure;
- Unemployment (Job Seekers Allowance);
- Qualifications;
- Earnings; and
- Infrastructure, initiatives and skills.

16.6.5 Economic Study Area Baseline

46 The baseline will be of the Economic Study Area as defined above in *Section 16.6.1*.

Population and Age Structure

47 The population across the Economic Study Area has grown between 2015 and 2016, most notably in the City of Edinburgh, Midlothian and Glasgow City. However, the population of Angus and Aberdeen City has decreased over this period (NRS, 2017a). The population has increased across all local authorities within the Economic Study Area other than Clackmannanshire compared to that shown in the 2011 census data (NRS, 2017b).

48 The City of Edinburgh, Aberdeen City, City of Dundee and Glasgow City local authorities have a higher than average (compared to Scotland overall) proportion of working age people (NRS, 2017a). The working age population has however decreased over all local authorities within the Economic Study Area compared to that shown in the 2011 census data (NRS, 2017a and 2017b).

49 Angus, East Dunbartonshire, Perth and Kinross and Scottish Borders have a noticeably higher Dependency Ratio compared to the Scottish and UK averages during 2016. Whereas, Aberdeen City, City of Edinburgh, Glasgow City all have noticeably lower Dependency Ratios with North Lanarkshire, Stirling and West Lothian having a Dependency Ratio in line with that of Scotland. All of the local authorities within the Economic Study Area have a higher

Dependency Ratio during 2016 compared to that shown within the 2011 census data (NRS, 2017a and 2017b).

50 Within the Economic Study Area, the Aberdeen, Burntisland, Leith, Methil, Montrose and Rosyth Labour Catchment Areas all have higher than average (compared to Scotland overall) proportion of working age people (ONS, 2017b).

Economic Activity

51 The Economic Activity Rate measures the percentage of the population, both in employment and unemployed that represent the labour supply, and hence is a useful measure of the labour market opportunities available to the population. During the period October 2016 to September 2017 East Lothian, West Lothian, Midlothian, Falkirk, Angus, Aberdeen City, Aberdeenshire, Highlands, Perth and Kinross, East Dunbartonshire, South Lanarkshire and Scottish Borders have an Economic Activity Rate higher than the Scottish and UK averages and North Lanarkshire, City of Dundee, Stirling and Glasgow City having economic activity lower than average. Edinburgh City and Fife have an Economic Activity Rate in line with that of Scotland (ONS, 2017a and 2017b).

52 Within the Economic Study Area, the Aberdeen, Cromarty Firth, Leith and Montrose Labour Catchment Areas all have an Economic Activity Rate higher than the Scottish average and Methil has an Economic Activity Rate in line with that of Scotland.

53 Within the Economic Study Area, the Dundee, Montrose and Rosyth Labour Catchment Areas all have a higher potential available labour pool than the Scottish average and the other Labour Catchment Areas (ONS, 2017b).

Employment Structure

54 The City of Edinburgh, East Lothian, Aberdeen City, Aberdeenshire, Stirling and East Dunbartonshire all have higher than average proportion of highly skilled and skilled workers compared with the Scottish and UK average. The City of Dundee has the highest proportion of unskilled workers. The City of Edinburgh and East Dunbartonshire have the lowest proportions of unskilled workers in the Economic Study Area (ONS, 2017b).

55 Within the Economic Study Area, the Aberdeen, Leith, Methil and Rosyth Catchment Areas all have a higher than average proportion of highly skilled and skilled workers compared with the Scottish average (ONS, 2017b).

Job Density

56 Job Density measures the number of jobs for every resident (each aged 16 – 64 years). City of Edinburgh, Aberdeen City, Highlands and Glasgow City have Job Densities higher than the Scottish and UK average. Dundee City, Perth and Kinross and Stirling have a Job Density in line with or close to the Scottish/UK average, while all other local authorities have Job Densities lower than the Scottish average (ONS, 2017a and 2017b).

Industry Structure

57 West Lothian, North Lothian, Falkirk, Fife, Angus, Aberdeenshire, Clackmannanshire, Scottish Borders, South Lanarkshire have an above average proportion of manufacturing jobs, while the other local authorities in the Economic Study Area are below the Scottish average with East Lothian in line with the Scottish average. Nineteen of the local authorities in the Economic Study Area have above Scottish average proportions of construction jobs, however Dundee City, City of Edinburgh, Aberdeen City and Glasgow City all have below the Scottish average (ONS, 2017a and 2017b).

58 Within the Economic Study Area, the Dundee, Leith and Rosyth Catchment Areas all have a higher than average proportion of manufacturing and construction jobs compared with the Scottish average (ONS, 2017b).

Unemployment (Job Seekers Allowance)

59 Claimant count rates in the Economic Study Area were highest in North Lanarkshire, Dundee City, Clackmannanshire and Glasgow City with Fife, Highlands and South Lanarkshire just above the Scottish average (ONS, 2017a and 2017b). All other local authorities were below the Scottish average with the lowest proportion of claimants within the City of Edinburgh, Aberdeenshire and Perth and Kinross (ONS, 2017a and 2017b).

Qualifications

60 City of Edinburgh, Aberdeen City, Stirling and Perth and Kinross have higher than the Scottish average for educational and attainment level for Degree, Higher National Diplomas (HND) and Highers (ONS, 2017b). Whereas West Lothian, Midlothian, North Lanarkshire, Falkirk, Dundee City, Clackmannanshire and Scottish Borders has below the average for educational and attainment level for Degree, HND and Highers (ONS, 2017b).

Earnings

61 Residents of City of Edinburgh, East Lothian, Aberdeenshire, Perth and Kinross, Stirling, East Dunbartonshire and South Lanarkshire all received salaries above the Scottish average for the 2017 period (ONS, 2017b). Whereas all other local authorities all received below the Scottish average (ONS, 2017b).

Infrastructure, Initiatives and Skills

62 In addition to the above baseline characteristics, it is important to set out the capacity and capability of the Economic Study Area supply chain to accommodate offshore wind development and provide the necessary support in terms of infrastructure, initiatives and skills from which Scotland can benefit.

63 There is a wide range of business and infrastructure initiatives, being implemented across Scotland, designed to enhance the capacity and capability of facilities and the supply chain. These range from business and industry networks (Aberdeen Renewable Energy Group (AREG), European Offshore Wind Deployment Centre (EOWDC) and National Subsea

Research Initiative (NSRI) in Aberdeen, Energy Dundee, Fife Renewables Innovation Centre and other business and industry networks outside the Economic Study Area such as ORE Catapult in Glasgow, through infrastructural strengthening (the upgrading of ports at Dundee, Montrose and Methil), to developing focal points of investment (Energetica Summer Festival held in May to August each year with activities taking place over a 30-mile stretch between the north of Aberdeen and Peterhead).

64 Added to these initiatives a number of multi-national energy sector companies have located within the Economic Study Area and in other parts of Scotland. Interest has also been expressed by wind turbine manufacturers in establishing facilities within the Economic Study Area or in other parts of Scotland that may in time also attract tier 2 or 3 component suppliers (machine parts, fixings, bearings, castings, rolled steel, etc.). In addition to this, in 2016, Dong Energy made a multi-million-pound investment in the CS Wind offshore tower manufacturing facility in Campbelltown. The new facility will be the first in the UK that can manufacture for offshore wind turbines. Also in 2016, Rosyth Dockyard operators Babcock won the deal to build two Offshore Transformer Modules for the Beatrice Offshore Windfarm Limited (BOWL) project in the Outer Moray Firth and secured a prestigious multi-million-pound contract to construct the world's first reactive compensation station for DONG Energy's Hornsea Project One offshore wind farm. The Port of Cromarty Firth has also won two contracts from Seaway Heavy Lifting as part of the BOWL project for berth and laydown space and office space. In addition, Burntisland Fabrications Limited (BiFab), located at the Energy Park, Fife at Methil has been a major player in the manufacturing of jackets for offshore wind turbines, however there has been some uncertainty over its future after being unsuccessful at securing a level of contracts required to sustain the core workforce, resulting in a number of redundancies.

65 An assessment of the ability for the supply chain within the study area, the rest of Scotland and the rest of the UK is included at *Appendix 16A* of this chapter.

66 Part of the business infrastructure necessary to exploit the opportunities from the offshore industry is the network of education, training and skills facilities within the Economic Study Area that would provide the requisite skilled labour force, upon which extensive development of the offshore wind industry will be reliant. These range from the higher education university, centres of excellence, and research institutions focal points in Edinburgh, Dundee, St Andrews and Aberdeen, together with the network of colleges across the Economic Study Area.

67 The training infrastructure within the Economic Study Area also includes several partnerships and organisations including Skills Development Scotland and Tresta amongst others. In addition, the Scottish Government have committed to 30,000 apprenticeship starts per year by 2020, this includes apprenticeships in the energy and climate change industry (Scottish Government, 2017a). To assist in this the Scottish Government have set up the £12 m Transition Training Fund which is managed by Skills Development Scotland. It offers support with training grants to help individuals to retrain, upskill or get accreditation or certification that would help them to get a new job in oil and gas, the wider energy sector, or engineering and manufacturing.

68 All of the above capability and capacity strengthening measures are supported by the Scottish Government strategies and policy frameworks detailed in *Section 16.4* above and are supported by the regional regulations and guidance from the City of Edinburgh Council, Fife Council, Dundee Partnership, Angus Council, the HIE, Aberdeen City Council and Aberdeenshire Council (see *Section 16.4*) which all target the offshore wind industry as a key economic sector. The above shows that the offshore wind industry across Scotland is improving, however with increased investment in infrastructure, initiatives and skills the offshore wind industry across Scotland is capable of increased productivity, which will increase productivity along the eastern coast.

69 Recent research completed by ORE Catapult and detailed in their report *The Economic Value of Offshore Wind: Benefits to the UK of Supporting the Industry 2017* (ORE Catapult, 2017). This report looks at the benefits of an active UK supply chain, showing that there is a clear net benefit to the UK from investing in the offshore wind industry, both to serve UK projects as well as bolstering the potential to export skills, products and services to the global market.

70 The ORE Catapult report also states that UK offshore wind projects currently being installed and operated are estimated to supply 32 per cent of their expenditure within the UK supply chain (referred to as UK content). The report states that *"by continuing to increase UK content in areas of strength such as blade and tower manufacture, cable supply and operations and maintenance (O&M), and developing strengths in other areas, including installation and foundation manufacture, it is projected that up to 65 per cent UK content could be possible by 2030, given the deployment of 19 Gigawatt (GW) plus installed capacity. Successfully developing capability in these areas will open up further export opportunities for the UK in a European market worth an estimated £9.2 billion per year by 2030"* (ORE Catapult, 2017).

71 The capabilities and capacity of the Economic Study Area supply chain to accommodate offshore wind development and provide the necessary support in terms of infrastructure, initiatives and skills alongside the rest of the baseline section above will be considered further within the impact assessment sections (*Sections 16.8-12*) below to estimate the percentage of expenditure likely to be supplied by the Development within the Economic Study Area, rest of Scotland and the rest of the UK.

16.6.6 Baseline without the Development

72 The above information describes the baseline conditions of the Economic Study Area at the time of undertaking the assessment. There is the likelihood that these baseline conditions will change in the future regardless of whether or not the Inch Cape Wind Farm and OfTW is developed. However, prediction of many of these aspects is very uncertain and is considered unlikely to impact upon the conclusions of the assessment.

73 Employment and economic activity can be very difficult to predict. However, in terms of energy developments it seems likely that the Scottish Government energy targets (as outlined above in *Sections 16.4* and in *Chapter 2* and *Chapter 3*) and commitment to

investment in renewable energy that there will be continued growth associated with renewable energy developments. Consequently, the proportion of the local economy benefitting from renewables related developments is likely to increase in the future.

16.7 Impact Assessment

16.7.1 Guidance

74 A number of relevant guidance documents have informed the identification of impacts, mitigation and assessment of residual economic effects of the Development. These guidance documents include:

- *The Green Book Appraisal and Evaluation in Central Government* (HM Treasury, 2003);
- *Economic Appraisal Guidance Note. A Summary Guide to Developing the Economic Case for a Project or Programme* (Scottish Enterprise, 2008);
- *Additionality & Economic Impact Assessment Guidance Note* (Scottish Enterprise, 2008);
- *Scottish Government Input-Output Tables* (Scottish Government, 2017b);
- UK Input-Output Analytical Tables (ONS 2017a and 2017b);
- *Analysis of the Employment Effects of the Operation and Maintenance of Offshore Wind Parks in the UK* (Oxford Economics, 2010);
- *The Macroeconomic Benefits of Investment in Offshore Wind* (CEBR, 2012);
- *The Economic Value of Offshore Wind: Benefits to the UK of Supporting the Industry* (ORE Catapult, 2017);
- *A New Economic Impact Methodology for Offshore Wind* (BVG Associates, 2017);
- *Draft Advice on Net Economic Benefit and Planning* (Scottish Government, 2016); and
- Existing Scottish policy and guidance documents in relation to the specific format of socio-economic assessments has also been considered.

16.7.2 Methodology

75 Potential impacts from the construction, operation and decommissioning of the Development are identified and their significance assessed with regard to the sensitivity of receptors and the magnitude of the effect.

76 The socio-economic impact assessment covers the following impacts:

- Creation of jobs and training opportunities;
- Provision of additional local services and improvements to local infrastructure;
- Impact of a changing influx of workers during the different construction, operation and decommissioning phases; and
- Consideration of cumulative effects with other projects.

77 In considering these impacts, this socio-economic impact assessment establishes the potential nature and scale of economic impacts generated by the Development, by reference to a number of best practice and research documents as set out in this chapter. Use is also made of industry experience of existing and emerging offshore wind schemes. In addition, the outputs generated by the Development are set within the context of the baseline capacity and capability of the Economic Study Area to absorb and benefit from these impacts. Considering the extent to which Scottish based businesses can benefit from the Development expenditure in terms of their capability, experience, skills and capacity.

78 The nature and scale of impacts are assessed by reference to a series of socio-economic significance criteria and by temporal phase of development, namely those impacts arising from the construction, O&M and decommissioning phases of the Development. Information from the baseline relating to infrastructural strengthening has also been used to prepare this assessment.

79 The principal socio-economic assessment criteria relate to the impact on employment within the Economic Study Area. These impacts are defined in terms of FTE jobs and economic output measured by the GVA generated by those jobs. The assessment outputs are therefore focussed on the following categories:

- Direct economic impacts: jobs and GVA that are wholly or largely related to construction, O&M, and decommissioning of the Development, which are generated in the Economic Study Area;
- Indirect economic impacts: jobs and GVA generated in the economy of the Economic Study Area in the chain of suppliers of goods and services to the direct activities;
- Induced economic impacts: jobs and GVA created by direct and indirect employees' spending in the Economic Study Area or in the wider economy; and
- Wider economic (catalytic) impacts: employment and income generated in the economy related to the wider role of the Development in influencing economic activities including wider socio-economic impacts.

80 The potential for cumulative impacts has been examined where relevant, and where data were available for the in-combination impact of the Development and OnTW, together with the relevant projects off the east coast of Scotland.

16.7.3 Significance Criteria

Sensitivity of Receptor

81 For the purposes of this socio-economic impact assessment the main factors considered relevant when defining the sensitivity of receptors are outlined in Table 16.5 below.

82 For economic impacts and effects, including employment, the availability of labour and skills is critical in being able to accommodate the demands, needs and requirements of the Development. Adequate capacity results in a low sensitivity, while conversely limited capacity results in a high sensitivity.

Table 16.5: Criteria for classifying sensitivity of receptor

Sensitivity	Definition
High	Where there is a low availability of labour and skills
Moderate	Where there is a constrained supply of labour and skills
Low	Where there is a readily available labour force and skills

Magnitude of Impact

83 A level of impact significance has been ascribed based on the information on both the Development socio-economic outputs and also the baseline structure of the Economic Study Area.

84 The magnitude of the effect of potential impacts on socio-economic receptors will be assessed as defined in Table 16.6 below.

Table 16.6: Classification of magnitude of impact

Magnitude	Definition
High	Impacts of the project of greater than local scale
Moderate	Noticeable impacts of the project that may be judged to be important at a local scale
Low	Slight impacts of the project that may be judged to be of minor importance
Negligible	Where impact is not discernible

Method for Assigning Significance of Effect

85 In line with standard EIA practice, the sensitivity of receptors, as defined in Table 16.5 Receptor Sensitivity (Socio-Economics) above are considered against the magnitude of impact (Tables 16.6) above to determine the significance of effect (Table 16.7).

Table 16.7: Significance of effects

Magnitude of Impact	Sensitivity of resource/receptor		
	Low	**Moderate**	**High**
Negligible	Negligible/Minor	Minor	Minor/Moderate
Low	Minor	Minor/Moderate	Moderate

Moderate	Minor/Moderate	Moderate	Moderate/Major
High	Moderate	Moderate/Major	Major

86 For the purposes of this assessment those residual positive and negative effects indicated as Major and Moderate/Major are considered significant.

16.8 Impact Assessment – Development

87 This section considers the source and nature of the impacts of the Development on the Economic Study Area. The impact assessment is considered in relation to the construction, operational and decommissioning phases. Values are presented for the Economic Study Area, the 'rest of Scotland', the 'rest of the UK' and the balance as the 'rest of the World'.

16.8.1 Effects on Construction

Construction Scenarios

88 ICOL have used industry figures[2] to estimate the offshore capital expenditure (CAPEX); operating expenditure (OPEX) and decommissioning expenditure by region, as set out in Table 16.8 below, based on the following 'Base' and 'High' scenarios, defined as:

- Base socio-economic scenario – moderate supply chain capacity capable of supplying around 15 per cent of whole life expenditures from within the Economic Study Area, a further 13 per cent from the rest of Scotland and a further 18 per cent from within the rest of the UK; and
- High socio-economic scenario – a more developed supply chain capable of supplying around 36 per cent of whole life expenditures from the Economic Study Area, a further 14 per cent from the rest of Scotland and a further 27 per cent from the rest of the UK.

89 Both scenarios assume that the Development will be fully developed in terms of the worst case 560 MW generating capacity (and full expenditure), but differ in the proportions of expenditure made within the Economic Study Area, the rest of Scotland and the rest of the UK.

[2] Taken from Shafiee, M., Brennan, F., and Espinosa, I.A. (2016) *A Parametric Whole Life Cost Model for Offshore Wind Farms in The International Journal of Life Cycle Assessment*. Available at: https://link.springer.com/article/10.1007/s11367-016-1075-z [Accessed 16/04/2018].

Table 16.8: Offshore expenditure estimates by scenario (£ million) – Development Area

	Base Socio-economic Scenario				High Socio-economic Scenario			
	Economic Study Area	Rest of Scotland	Rest of UK	Rest of the World	Economic Study Area	Rest of Scotland	Rest of UK	Rest of the World
CAPEX	194.7	64.9	259.7	1,103.6	503.1	129.8	486.9	503.1
Operational Expenditure (OPEX)	843.2	932.0	1,153.9	1,508.9	1,819.6	1,331.4	1,109.5	177.5
Decommi-ssioning	34.0	29.5	29.5	133.7	79.3	11.3	56.7	79.3
TOTAL	1,072.0	1,026.4	1,443.0	2,746.2	2,402.0	1,472.6	1,653.0	759.9
As a % of Each Region (figures rounded)								
CAPEX	18 %	6 %	18 %	40 %	21 %	9 %	29 %	66 %
OPEX	79 %	91 %	80 %	55 %	76 %	90 %	67 %	23 %
Decommi-ssioning	3 %	3 %	2 %	5 %	3 %	1 %	3 %	10 %
TOTAL	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
As a % of Total Expenditure								
CAPEX	12 %	4 %	16 %	68 %	31 %	8 %	30 %	31 %
OPEX	19 %	21 %	26 %	34 %	41 %	30 %	25 %	4 %
Decommi-ssioning	15 %	13 %	13 %	59 %	35 %	5 %	25 %	35 %
TOTAL	15 %	13 %	18 %	54 %	36 %	14 %	27 %	23 %

90 These 'Base' and 'High' scenarios have been considered in relation to the assessment of the socio-economic effects arising from the Development through its life (expected to be up to 50 years). These scenarios reflect two key considerations; firstly, that the design of the Development remains within a design envelope and therefore the nature of goods and services procured will vary; and secondly that the capacity, capability and availability of the supply chain to support the Development is subject to change. Other offshore wind farm projects may also be developed and procured in a similar time period and this will also affect the supply chain locally and on a wider basis (see *Appendix 16A*).

91 Businesses have the potential to diversify and grow by moving into new markets including the offshore wind industry. Businesses in the UK, Scotland, and in particular in the Economic Study Area are well positioned to attract a proportion of expenditure from offshore wind farm projects due to the existing skills base that could assist in the delivery of the STW and Round 3 offshore wind farm projects, however this requires businesses to offer both technically and commercially competitive propositions. There is potential for successful businesses to export goods and services to other offshore wind farm projects on a global basis.

92 The baseline assessment shows that there is currently an economically active, skilled and semi-skilled workforce in the Economic Study Area, with the capacity for retraining and up-skilling at all levels. This pool of potential labour and skills will have the capacity to act as a labour market resource, upon which the Development can draw its labour market requirements in the construction, O&M and decommissioning phases.

Estimation of Gross Direct and Net Additional Construction Employment

93 The net additional impact of the Development was estimated, taking account of deadweight, leakage, displacement and economic multipliers.

94 The 'no project' scenario (deadweight) effects are assumed to be zero; as without the Development no impacts would result.

95 Leakage is defined as those jobs taken up by people from outside a specific area, e.g. Economic Study Area, rest of Scotland and rest of UK, and is set out in Table 16.9 below. Leakage rates out of the Economic Study Area to the rest of the UK in the 'Base' impact scenario are expected to be low (4 per cent) and greater in the high impact scenario (8 per cent). However, there is less leakage out of the UK as a whole to overseas in the 'High' impact scenario (31 per cent) compared to the 'Base' impact scenario (68 per cent).

96 Displacement Effects within the Economic Study Area's business infrastructure are expected to be low to zero due to the limited numbers of manufacturing businesses currently operating within and providing components for the offshore wind industry. If business involvement expands through additional investment, the capacity of industry to supply the needs of the Development would also develop through up-skilling and importation of labour to address the requirements.

97 A multiplier value from the recent Centre for Economics and Business Research (CEBR) scenario based assessment of the economic impact on the UK of alternative options for the realisation of offshore wind capability (Report for Mainstream Renewable Power *The Macroeconomic Benefits of Investment in Offshore Wind* (CEBR, 2012)) has been used to establish the level of downstream indirect and induced employment that would be generated as a result of the direct construction arising from the Development. This multiplier value estimates that 1.41 indirect and induced jobs would be created elsewhere in the economy for every one FTE direct construction job.

Employment and GVA Impacts

98 A range of scenarios has been considered that may affect Development design and construction methods and therefore the number of construction jobs have been set out separately as 'High' and 'Base' supply chain scenarios. The number of construction FTE jobs created in total is estimated at 1,120 for the offshore elements of the Development. This is based on an assumed lowest case Development size of approximately 560 MW[3] although it should be noted that economic impacts are related to the scale and nature of procurement, construction and operations associated with the required infrastructure rather than the specific electrical output of the Wind Farm. A potential geographic distribution of these jobs has been estimated for the 'Base' and 'High' scenarios based on analysis of the existing supply chain and where there is potential for growth respectively, as described above.

99 Depending on the impact scenario the proportion of the Development expenditure spent in the Economic Study Area, rest of Scotland, and rest of UK could potentially create between 134 FTE direct jobs and 347 direct FTE jobs at an Economic Study Area level, between a further 45 and 90 FTE direct jobs in the rest of Scotland, and between a further 179 and 336 FTE direct jobs in the rest of UK, as shown in Table 16.9 below.

Table 16.9: Construction phase gross direct employment and leakage effects

	Low Impact		**High Impact**	
Leakage effects	**No. of FTE Jobs**	**% of Total**	**No. of FTE Jobs**	**% of Total**
Economic Study Area[4]	134	12	347	31
Rest of Scotland	45	4	90	8
Rest of UK	179	16	336	30
Overseas	762	68	347	31
Total	**1,120**	**100 %**	**1,120**	**100 %**

100 As shown below in Table 16.10, net additional employment from the Development is estimated to be between 321 FTE and 832 FTE direct, indirect and induced construction jobs at an Economic Study Area level for the 'Base' and 'High' scenarios respectively. For the rest of Scotland, net additional employment from the Development is estimated to be between 108 FTE and 216 FTE direct, indirect and induced construction jobs for the 'Base' and 'High' scenarios respectively. Net additional employment in the Rest of UK is estimated to be between 429 FTE and 806 FTE direct, indirect and induced jobs. This gives an overall total of

[3] Based on a study conducted by Cambridge Econometrics, 2017.
[4] This row shows the retention of jobs within the Economic Study Area and is included for reference

between 858 and 1854 net additional direct, indirect and induced FTE construction jobs in the UK.

101 Using an average GVA per employee value of £130,000[5] for the construction sector in Scotland, the net additional jobs represent between £41.8 million and £108.2 million GVA per annum at an Economic Study Area level, and between £55.8 million and £136.2 million at a Scottish level as set out in Table 16.10.

Table 16.10: Construction phase direct and net additional employment and GVA

	Base Impact		High Impact	
Employment	**No. of FTE Jobs**	**Displacement and Multiplier**	**No. of FTE Jobs**	**Displacement and Multiplier**
Economic Study Area				
Direct FTE Jobs	134		347	
Displacement Effect	-1	0.5 %	-2	0.5 %
Net Additional Local Jobs	133		345	
Multiplier Effect	188	1.41	487	1.41
Net Additional Economic Study Area Jobs	***321***		***832***	
Rest of Scotland				
Direct FTE Jobs	**45**		**90**	
Displacement Effect	0	0.5 %	-0.45	0.5 %
Net Additional Local Jobs	45		89.55	
Multiplier Effect	63	1.41	126	1.41
Total Net Additional Rest of Scotland Jobs	***108***		***216***	
Total Scotland Jobs	***429***		***1048***	
Rest of UK				
Direct FTE Jobs	179		336	
Displacement Effect	-1	0.5 %	-2	0.5 %
Net Additional Local Jobs	178		334	
Multiplier Effect	251	1.41	471	1.41
Total Net Additional Rest UK Jobs	***429***		***806***	
Total UK Jobs	***858***		***1854***	
GVA Per Annum	**£m p.a.**		**£m p.a.**	
Economic Study Area	41.8		108.2	
Scotland Total	55.8		136.2	
Rest of UK	55.8		104.7	

[5] Based on Marine Scotland Topic Sheet No. 99

	Base Impact		High Impact	
UK Total	111.6		241.0	
GVA Total CAPEX	**£m**		**£m**	
Economic Study Area	208.9		540.9	
Scotland Total	279.0		681.1	
Rest of UK	279.0		523.7	
UK Total	558.0		1204.8	

Construction Phase Economic Impacts

102 The potential employment impacts of the Development are considered within the context of the Economic Study Area labour market. The analysis is designed to provide an understanding of the potential scale of impacts generated by the Development and the degree to which the available labour market is able to accommodate such impacts.

103 The estimated construction phase impacts highlighted above have been assessed against the current labour market, including working age population, economically active, and potentially available labour pool, for the Economic Study Area consisting of the 60 minute drive-time catchments centred on Leith, Rosyth, Dundee, Montrose, Methil, Burntisland, the Cromarty Firth and Aberdeen as representative potential locations for construction and deployment activities. Table 16.11 below provides an illustration of the number of new jobs that could potentially be created by the Development relative to the workforce available within the 60 minute drive-time catchment of each labour market location.

104 See *Appendix 16A* for a high-level review of the potential of supply for each potential stage and sector of the construction phase.

Table 16.11: Construction employment scenarios versus labour market scale

	Leith	Rosyth	Dundee	Montrose	Methil	Burntisland	Cromarty	Aberdeen
	60min	**60min**	**60min**	**60min**	**60min**	**60min**	**60min**	**60min**
Working age population (Source - NOMIS)	1,144,030	1,854,496	402,385	324,703	860,676	1,220,849	13,127	272,718
Economically active (16-74 years) (Source – NOMIS)	891,626	1,407,628	307,113	254,131	666,117	941,318	11,139	224,244
Potentially available labour pool (Source – NOMIS)	37,361	63,792	13,416	11,477	27,333	40,684	409	9,038
Manufacture and construction related workforce (Source – NOMIS)	95,742	142,006	37,358	32,660	71,070	104,998	1,195	30,825
Low scenario: Net Additional Jobs Total = 321								
As % of working age population	0.03 %	0.02 %	0.08 %	0.10 %	0.04 %	0.03 %	2.45 %	0.12 %
As % of economically active	0.04 %	0.02 %	0.10 %	0.13 %	0.05 %	0.03 %	2.88 %	0.14 %
As % of potentially available labour pool	0.86 %	0.50 %	2.39 %	2.80 %	1.17 %	0.79 %	78.48 %	3.55 %
Manufacture and construction related workforce	0.34 %	0.23 %	0.86 %	0.98 %	0.45 %	0.31 %	26.86 %	1.04 %
High scenario: Net Additional Jobs Total = 832								
As % of working age population	0.07 %	0.04 %	0.21 %	0.26 %	0.10 %	0.07 %	6.34 %	0.31 %
As % of economically active	0.09 %	0.06 %	0.27 %	0.33 %	0.12 %	0.09 %	7.47 %	0.37 %
As % of potentially available labour pool	2.23 %	1.30 %	6.20 %	7.25 %	3.04 %	2.05 %	203.42 %	9.21 %
Manufacture and construction related workforce	0.87 %	0.59 %	2.23 %	2.55 %	1.17 %	0.79 %	69.62 %	2.70 %

105 Under the 'Base' scenario the sensitivity of the Cromarty Firth labour market area would be moderate given that the potentially available labour pool would experience a considerable demand (78.48 per cent) and the magnitude of change would be high, resulting in a **Moderate/Major** positive significant effect. In the 'High' scenario the sensitivity would be high given that the demand would be higher than the potentially available labour pool (203.42 per cent) and the magnitude would be high, resulting in a **Major** positive significant effect. Despite the demand being more than the potentially available labour pool the impact on those 'economically active' in the catchment area would not result in a negative effect.

106 Due to the nature of the wider catchment, the magnitude of change experienced in the other labour market catchments would only be negligible on low sensitivity catchments, resulting in a negligible/minor positive non-significant effect.

107 Given that the construction period would be temporary and that the nature of the skills required would include both specialist and general construction labour capabilities, this would likely require both the up-skilling of available labour and also the importation and attraction of additional labour into the area. This is not unusual for large construction projects during the construction works period, with a mobile and specialist workforce being attracted to such projects. In addition, there is a number of offshore wind farms on the east coast of Scotland at differing stages of construction which would provide an existing available labour pool which could be utilised. In such circumstances this form of mobile workforce would generally be absorbed into the available accommodation facilities, in bed & breakfasts and similar cost-effective accommodation, benefitting this sector of the economy in addition to expenditure on goods and services in an area.

108 A proportion of this mobile labour force would also likely be attracted to remain on a more permanent basis, particularly where there is a prospect of on-going major project construction work along the east coast of Scotland related to other offshore wind farms.

16.8.2 Effects of Operation and Maintenance

109 The O&M approach for the Development has not yet been determined, however there are different offshore O&M scenarios that can be used such as a shore-based O&M approach whereby small service craft for access with limited helicopter access are used. The shore-based operation would require a nearby port to support vessel operations and include base facilities for maintenance crew carrying out planned and unplanned maintenance and repair. Support facilities would be required such as a helipad, warehousing for consumables and equipment, mechanical/electrical workshop, personnel welfare, catering and associated parking. Other scenarios include the increased use of helicopters or the use of a mothership. Each scenario will generate different economic benefits within the Economic Study Area and the rest of the UK which makes it difficult to categorise the O&M phase in terms of industry employment ratios.

110 As such, the following assessment is based on estimates of direct and indirect O&M employment per MW which can be found within *Analysis of the Employment of the*

Operation and Maintenance of Offshore Wind Parks in the UK (Oxford Economics, 2010). Table 16.12 below shows the O&M employment per MW alongside the Inch Cape Wind Farm maximum generating output and the estimated O&M employment.

111 See *Appendix 16A* for a high-level review of the potential of supply for each potential stage and sector of the operations phase.

Table 16.12: O&M employment

	O&M employment per MW	Inch Cape Wind Farm MW	Estimated O&M Employment
Direct	0.2	560	112
Indirect	0.16	560	89.6
Total	-	-	201.6

112 ICOL estimates of direct O&M activities indicate that there would be approximately 112 FTE jobs over the period of up to 50 years and estimates of indirect employment as a result of O&M activities indicate that there would be approximately 90 FTE jobs.

113 Net employment which would result from this level of direct employment would be approximately 202 FTE jobs, as set out in Table 16.12 above.

114 The number of O&M jobs have been set out separately as 'High' and 'Base' supply chain scenarios in Table 16.13 below. The number of O&M FTE jobs created in total is estimated at 202 for the offshore elements of the Development. This is based on an assumed lowest case Development size of approximately 560 MW although it should be noted that economic impacts are related to the scale and nature of procurement, construction and operations associated with the required infrastructure rather than the specific electrical output of the Wind Farm. A potential geographic distribution of these jobs has been estimated for the 'Base' and 'High' scenarios based on analysis of the existing supply chain and where there is potential for growth respectively, as described above.

115 Depending on the impact scenario the proportion of the Development expenditure spent in the Economic Study Area, rest of Scotland, and rest of UK could potentially create between 38 FTE direct and indirect jobs and 83 indirect and direct FTE jobs at an Economic Study Area level, between a further 42 and 61 FTE direct and indirect jobs in the rest of Scotland, and between a further 53 and 51 FTE direct and indirect jobs in the rest of UK, as shown in Table 16.13 below.

Table 16.13: O&M phase gross direct employment and leakage effects

	Base Impact		High Impact	
Leakage effects	**No. of FTE Jobs**	**% of Total**	**No. of FTE Jobs**	**% of Total**
Economic Study Area[6]	38	19 %	83	41 %
Rest of Scotland	42	21 %	61	30 %
Rest of UK	53	26 %	51	25 %
Overseas	69	34 %	8	4 %
Total	**202**	**100 %**	**202**	**100 %**

116 The net employment from O&M (direct and indirect) is shown in Table 16.12 and 16.13 above. Table 16.14 below takes into account deadweight and displacement to calculate the net additional employment within the Economic Study Area.

117 Table 16.14 assumes that there would be zero dead-weight effect due to the unique nature of the Development in the area and that displacement would be higher but still relatively limited at around 0.5 per cent. This would result from potential constraints on the level of appropriately qualified and skilled people within the Economic Study Area and wider Scottish labour force, upon which the Inch Cape Wind Farm and OfTW would draw. As a consequence, the Development may draw in skilled labour from outside the Economic Study Area, and also attract labour from existing economic activities within the Economic Study Area. This net additional employment would represent new GVA at an Economic Study Area level of £4.9 million to £10.7 million per annum and £10.3 million and £18.6 million per annum for the 'Base' and 'High' case for Scotland as a whole.

Table 16.14: Operation & maintenance phase direct and net additional employment

	Base Impact		High Impact	
Employment	**No. of FTE Jobs**	**Displacement and Multiplier**	**No. of FTE Jobs**	**Displacement and Multiplier**
Economic Study Area				
Direct and Indirect FTE jobs	38		83	
Displacement effect	0	0.5 %	0	0.5 %
Net Additional Economic Study Area jobs	**38**		**83**	
Rest of Scotland				

[6] This row shows the retention of jobs within the Economic Study Area and is included for reference

	Base Impact		High Impact	
Employment	**No. of FTE Jobs**	**Displacement and Multiplier**	**No. of FTE Jobs**	**Displacement and Multiplier**
Direct and Indirect FTE jobs	42		61	
Displacement effect	0	0.5 %	-0.3	0.5 %
Net Additional Rest of Scotland jobs	**42**		**60.7**	
Total Scotland Jobs	**80**		**143**	
Rest of UK				
Direct and Indirect FTE jobs	53		51	
Displacement effect	0	0.5 %	0	0.5 %
Net Additional Rest UK Jobs	**53**		**51**	
Total UK Jobs	***132***		***194***	
GVA Per Annum[7]	**£m p.a.**		**£m p.a.**	
Economic Study Area	4.9		10.7	
Scotland Total	10.3		18.6	
Rest of UK	6.9		6.6	
UK Total	17.2		25.2	
GVA Total OPEX	**£m**		**£m**	
Economic Study Area	24.6		53.7	
Scotland Total	51.7		93.1	
Rest of UK	34.3		33.0	
UK Total	86.0		126.1	

Operation and Maintenance Phase Economic Impacts

118 Estimated O&M phase impacts have been assessed against the current labour market, as set out in the baseline assessment, for Leith (Edinburgh), Rosyth (Fife), Dundee, Montrose, Methil, Burntisland, the Cromarty Firth (Highland) and Aberdeen.

119 Table 16.15 provides an illustration of the number of new jobs potentially created by the Development relative to the workforce available within the 60 minute drive-time catchment of each labour market location.

[7] Based on Marine Scotland Topic Sheet No. 99

Table 16.15: Operation & maintenance employment scenarios versus labour market scale

	Leith	Rosyth	Dundee	Montrose	Methil	Burntisland	Cromarty	Aberdeen
	60min	**60min**	**60min**	**60min**	**60min**	**60min**	**60min**	**60min**
Working age population (Source – NOMIS)	1,144,030	1,854,496	402,385	324,703	860,676	1,220,849	13,127	272,718
Economically active (16-74 years) (Source – NOMIS)	891,626	1,407,628	307,113	254,131	666,117	941,318	11,139	224,244
Potentially available labour pool (Source – NOMIS)	37,361	63,792	13,416	11,477	27,333	40,684	409	9,038
Manufacture and construction related workforce (Source – NOMIS)	95,742	142,006	37,358	32,660	71,070	104,998	1,195	30,825
Low scenario: Net Additional Jobs Total = 38								
As % of working age population	0.00 %	0.00 %	0.01 %	0.01 %	0.00 %	0.00 %	0.29 %	0.01 %
As % of economically active	0.00 %	0.00 %	0.01 %	0.01 %	0.01 %	0.00 %	0.34 %	0.02 %
As % of potentially available labour pool	0.10 %	0.06 %	0.28 %	0.33 %	0.14 %	0.09 %	9.29 %	0.42 %
Manufacture and construction related workforce	0.04 %	0.03 %	0.10 %	0.12 %	0.05 %	0.04 %	3.18 %	0.12 %
High scenario: Net Additional Jobs Total = 83								
As % of working age population	0.01 %	0.00 %	0.02 %	0.03 %	0.01 %	0.01 %	0.63 %	0.03 %
As % of economically active	0.01 %	0.01 %	0.03 %	0.03 %	0.01 %	0.01 %	0.75 %	0.04 %
As % of potentially available labour pool	0.22 %	0.13 %	0.62 %	0.72 %	0.30 %	0.20 %	20.29 %	0.92 %
Manufacture and construction related workforce	0.09 %	0.06 %	0.22 %	0.25 %	0.12 %	0.08 %	6.95 %	0.27 %

120 Due to the nature of the Economic Study Area, the magnitude of change experienced in the labour market catchments would only be **negligible** on **low** sensitivity catchments, resulting in a **negligible/minor** positive impact during the O&M phase.

16.8.3 Effects of Decommissioning

121 A decommissioning plan will be prepared as part of the on-going development work and will be subject to approval from Scottish Ministers following the requirements of Section 105 of the *Energy Act 2004* outlined in *Chapter 3, Section 3.2.4*. The following generic activities may be required during the decommissioning phase:

- Project management;
- WTG removal;
- Substructure/foundation removal;
- Associated port activities;
- Beneficial use or disposal of materials; and
- Sub-sea survey on completion.

122 The estimated number of decommissioning jobs is likely to be lower than construction. Decommissioning work offshore will generally reverse the installation work and recover structures to shore. It is estimated there would be approximately 30 full time personnel involved in managing the activities and a further 530 temporary personnel. The decommissioning phase is estimated to take approximately 18 to 24 months for removal activities and therefore provide approximately 110 FTE jobs.

Decommissioning Phase Economic Impacts

123 Facilities at Leith, Rosyth, Dundee, Montrose, Methil, Burntisland, the Cromarty Firth and Aberdeen are also considered representative of the type of facilities that could be utilised in the decommissioning phase. They could all accommodate and process structures removed from offshore although other facilities may also be required depending on capacity and availability within these facilities at the time of decommissioning. The nature of onshore activities will be different to the construction phase and will depend on how equipment and structures will be re-used or recycled for other purposes.

124 The estimated 530 temporary decommissioning jobs (110 FTE) would have a low magnitude of change on a low sensitivity receptor, resulting in a minor non-significant effect in terms of Leith, Rosyth, Dundee, Montrose, Methil, Burntisland or Aberdeen. For the Cromarty Firth, however, the magnitude of change would potentially be low on a moderate sensitivity receptor, resulting in a minor/moderate non-significant effect for the 'Base' scenario and minor/moderate non-significant effect in the 'High' scenario. This number of jobs would be readily absorbed locally through a mixture of locally based and temporarily accommodated imported labour over the limited timescale for the decommissioning phase. Thus, the creation of new, and safeguarding of existing jobs, would have a positive effect in economic terms and each job would be valuable to the Economic Study Area economy.

16.9 Cumulative Impact Assessment (CIA)

125 GVA and job numbers have been used from the assessment for the Development and the OnTW and presented on an equivalent basis at a Scottish level with numbers for other proposed, consented, under construction or operational large scale offshore wind farm projects off the east coast of Scotland:

- Kincardine Floating Offshore Wind Farm (Kincardine Offshore Wind Ltd, proposed 2016);
- Firth of Forth Phase 1 (Seagreen Wind Energy Ltd, consented 2014);
- Neart na Gaoithe (NNG) (Mainstream Renewable Power, consented 2014);
- Levenmouth Offshore Demonstration Turbine (ORE Catapult, operational);
- Hywind Scotland Pilot Park Offshore Wind Farm (Statoil ASA, operational);
- Aberdeen Offshore Wind Farm/Aberdeen Bay, EOWDC (Vattenfall and AREG, under construction);
- Moray Firth Eastern Development (Moray Offshore Renewables and EDP Renewables (EDPR), consented 2014, pre-construction);
- Beatrice Offshore Windfarm (Beatrice Offshore Windfarm Ltd and Scottish and Southern Energy (SSE) Renewables, consented 2014 under construction); and
- Beatrice Demonstration (SSE Renewables and Talisman Energy, operational).

126 As the baseline and status for cumulative projects are ever evolving a cut-off date of November 2017 was used to allow the EIA and CIA to progress. ICOL appreciates and acknowledges that the status of some of these projects may have changed since this date and note however that the individual status of projects has not been updated in the EIA Report due to the time restrictions associated with the assessment.

127 As the CIA is based on the Development and the OnTW, the OnTW elements have been considered, however, they are not expected to significantly alter impacts from the Development alone. As such, Table 16.16 below sets out the potential impacts of the Development as assessed in this chapter cumulatively with the above projects.

128 Source references are provided and where job numbers have been derived, the basis is noted in Table 16.16. It is assumed that each project will be developed over a broadly similar timescale and will jointly draw upon the labour market catchments as shown in this assessment.

Table 16.16: Cumulative summary - Whole of Scotland

All Values - Total Scotland	Inch Cape Wind Farm	Kincardine Offshore Wind Farm	Firth of Forth Phase 1	NNG	Levenmouth Offshore Demonstration Turbine	Hywind Scotland Pilot Park Offshore Wind Farm	Aberdeen Offshore Wind Farm (also known as European Offshore Wind Deployment Centre)	Moray Firth Eastern Development (MORL)	Beatrice Offshore Windfarm	Beatrice Demo	Total
Construction (CAPEX)											
GVA – Low/Base £m	55.8	Not Stated	80	75	Construction complete so the GVA from this phase will have already benefited the Scottish economy so will not be included in this assessment	Based on scenario where only the O&M and decommissioning takes place in Aberdeenshire and the rest of Scotland	39.6	312	320	Construction complete so the GVA from this phase will have already benefited the Scottish economy so will not be included in this assessment	882.4

All Values - Total Scotland	Inch Cape Wind Farm	Kincardine Offshore Wind Farm	Firth of Forth Phase 1	NNG	Levenmouth Offshore Demonstration Turbine	Hywind Scotland Pilot Park Offshore Wind Farm	Aberdeen Offshore Wind Farm (also known as European Offshore Wind Deployment Centre)	Moray Firth Eastern Development (MORL)	Beatrice Offshore Windfarm	Beatrice Demo	Total
GVA - High £m	136.2	Not Stated	321	518	Construction complete so the GVA from this phase will have already benefited the Scottish economy so will not be included in this assessment	40	39.6	802	576	Construction complete so the GVA from this phase will have already benefited the Scottish economy so will not be included in this assessment	2,432.8
Low/Base Case - average net jobs per annum	429	110	1,728	322	Construction complete so the average jobs from this phase will have already benefited the Scottish economy so will not be included in this assessment	Based on scenario where only the O&M and decommissioning takes place in Aberdeenshire and the rest of Scotland	738	960	1,246	Construction complete so the average jobs from this phase will have already benefited the Scottish economy so will not be included in this assessment	5,533

All Values - Total Scotland	Inch Cape Wind Farm	Kincardine Offshore Wind Farm	Firth of Forth Phase 1	NNG	Levenmouth Offshore Demonstration Turbine	Hywind Scotland Pilot Park Offshore Wind Farm	Aberdeen Offshore Wind Farm (also known as European Offshore Wind Deployment Centre)	Moray Firth Eastern Development (MORL)	Beatrice Offshore Windfarm	Beatrice Demo	Total
High Case - average net jobs per annum	1,048	110	7,196	2,704	Construction complete so the average jobs from this phase will have already benefited the Scottish economy so will not be included in this assessment	260	738	2,500	2,169	Construction complete so the average jobs from this phase will have already benefited the Scottish economy so will not be included in this assessment	16,725
Operations (OPEX) per annum											
GVA – Low/Base £m p.a.	10.3	Not Stated	17.4	12	1.2	44	1.06	17.1	17.1		120.16
GVA - High £m p.a.	18.6	Not Stated	23.5	18	1.2	40	1.06	43	26.4		171.76
Low/Base Case - average net jobs per annum	80	8	200	100	15	33	35	244	188		903
High Case - average	143	8	200	145	15	33	35	376	343		1,298

All Values - Total Scotland	Inch Cape Wind Farm	Kincardine Offshore Wind Farm	Firth of Forth Phase 1	NNG	Levenmouth Offshore Demonstration Turbine	Hywind Scotland Pilot Park Offshore Wind Farm	Aberdeen Offshore Wind Farm (also known as European Offshore Wind Deployment Centre)	Moray Firth Eastern Development (MORL)	Beatrice Offshore Windfarm	Beatrice Demo	Total
net jobs per annum											
Decommissioning											
Low/Base Case - average net jobs per annum	110	Not Stated	Not Stated	275	Not Stated	21	248	75	363		1,092
High Case - average net jobs per annum	110	Not Stated	Not Stated	352	Not Stated	21	248	350	478		1,559

All Values - Total Scotland	Inch Cape Wind Farm	Kincardine Offshore Wind Farm	Firth of Forth Phase 1	NNG	Levenmouth Offshore Demonstration Turbine	Hywind Scotland Pilot Park Offshore Wind Farm	Aberdeen Offshore Wind Farm (also known as European Offshore Wind Deployment Centre)	Moray Firth Eastern Development (MORL)	Beatrice Offshore Windfarm	Beatrice Demo	Total
Reference notes		KOWL ES p.559-560. http://pilot-renewables.com/pdf_docs/KOWL_EnvironmentalStatement_Issued_v2.pdf [Accessed 16/04/018]	FoF Phase 1 ES Table 19.14, 19.16, 19.18, and para 19.137.	NNG ES Table 23.8 and 23.10. Figure 23.12 and 23.14. Derived average over 4 year construction, 25 year operational and 3 year decommissioning periods.	Levenmouth Demonstration Turbine EIA Update Report, p.86. https://ore.catapult.org.uk/app/uploads/2018/01/2-2652_LDT_EIA-Update-Report_V3-1_KM_FM_171220.pdf [Accessed 16/04/018]	Hywind Pilot Park ES, Chapter 18, p.3. http://marine.gov.scot/datafiles/lot/hywind/Environmental_Statement/Environmental_Statement.pdf [Accessed 16/04/018]	EOWDC Aberdeen Bay EIA. http://www.gov.scot/Topics/marine/Licensing/marine/scoping/EOWDC [Accessed 16/04/018]	MORL ES Section 8.6, 11.6. Table 12.1-19 and 12.1-20. Derived average over 5 year construction, 25 year operational and 4 year decommissioning periods.	BOWL ES Table 20.19 and 20.20, Average over each period from Plate 20.6 and 20.7. http://sse.com/media/341029/ES-Volume-1-ES-Sections.pdf [Accessed 16/04/018]	No information on GVA and FTE jobs during O&M and decommissioning available	

129 Table 16.17 sets out the assessed impact of the Development cumulatively with other wind farm projects off the east coast of Scotland in relation to the Economic Study Area and drive time catchments.

Table 16.17: CIA of construction phase in relation to Economic Study Area

	Leith	Rosyth	Dundee	Montrose	Methil	Burntisland	Cromarty	Aberdeen
	60min	**60min**	**60min**	**60min**	**60min**	**60min**	**60min**	**60min**
Working age population (Source - NOMIS)	1,144,030	1,854,496	402,385	324,703	860,676	1,220,849	13,127	272,718
Economically active (16-74 years) (Source -NOMIS	891,626	1,407,628	307,113	254,131	666,117	941,318	11,139	224,244
Potentially available labour pool (Source - NOMIS)	37,361	63,792	13,416	11,477	27,333	40,684	409	9,038
Manufacture and construction related workforce (Source - NOMIS)	95,742	142,006	37,358	32,660	71,070	104,998	1,195	30,825
Low scenario: Net Additional Jobs Total = 5,533								
As % of working age population	0.48	0.30	1.38	1.70	0.64	0.45	42.15	2.03
As % of economically active	0.62	0.39	1.80	2.18	0.83	0.59	49.67	2.47
As % of potentially available labour pool	14.81	8.67	41.24	48.21	20.24	13.60	1,352.81	61.22
Manufacture and construction related workforce	5.78	3.90	14.81	16.94	7.79	5.27	463.01	17.95
High scenario: Net Additional Jobs Total = 16,725								
As % of working age population	1.46	0.90	4.16	5.15	1.94	1.37	127.41	6.13
As % of economically active	1.88	1.19	5.45	6.58	2.51	1.78	150.15	7.46
As % of potentially available labour pool	44.77	26.22	124.66	145.73	61.19	41.11	4,089.24	185.05
Manufacture and construction related workforce	17.47	11.78	44.77	51.21	23.53	15.93	1,399.58	54.26

16.9.1 Effects on Construction

130 Table 16.17 shows the potential cumulative effect of the Development, and the other offshore wind farms specified in the assessment, on the eight catchments that make up the Economic Study Area.

131 Under the 'Base' scenario the magnitude of change experienced for the Leith, Rosyth, Methil and Burtisland labour market catchments would only be low on low sensitivity catchments, resulting in a minor positive non-significant effect as the level of demand for construction labour would not result in any pressure on labour market capacity in either the 'Base' or 'High' scenarios.

132 For Dundee under the 'Base' scenario, the effect upon the potentially available labour pool (41.24 per cent) would have a moderate magnitude of change on a low sensitivity receptor, resulting in a minor/moderate positive non-significant effect upon the potentially available labour pool.

133 For Montrose under the 'Base' scenario, the effect upon the potentially available labour pool (48.21 per cent) would have a moderate magnitude of change on a low sensitivity receptor, resulting in a minor/moderate positive non-significant effect upon the potentially available labour pool.

134 For Aberdeen under the 'Base' scenario, the effect upon the potentially available labour pool (61.22 per cent) would have a moderate magnitude of change on a moderate sensitivity receptor, resulting in a moderate positive non-significant effect upon the potentially available labour pool.

135 For the Cromarty Firth under the 'Base' scenario, the effect upon the potentially available labour pool (1352.81 per cent) would have a high magnitude of change on a high sensitivity receptor, resulting in a M**ajor** positive significant effect upon the potentially available labour pool. However, given that the potentially available labour pool would be unable to meet the cumulative labour force requirements if all projects were developed concurrently using facilities in this area, the percentage impact on those 'economically active' would result in a moderate magnitude of change on a moderate sensitivity receptor, resulting in a moderate negative non-significant effect in this regard. However, this could be addressed through skills and training initiatives and the import of such labour into the catchment area attracted by the available jobs. In these circumstances this would result in a moderate positive non-significant effect.

136 For the Rosyth catchment area under the 'High' scenario, the effect upon the potentially available labour pool (26.22 per cent) would have a low magnitude of change on a low sensitivity receptor, resulting in a minor positive non-significant effect upon the potentially available labour pool.

137 For the Leith and Burntisland catchment area under the 'High' scenario, the effect upon the potentially available labour pool (44.77 per cent and 41.11 per cent respectively) would have

a moderate magnitude of change on a low sensitivity receptor, resulting in a minor/moderate positive non-significant effect upon the potentially available labour pool.

138 For Methil under the 'High' scenario, the effect upon the potentially available labour pool (61.19 per cent) would have a moderate magnitude of change on a moderate sensitivity receptor, resulting in a moderate positive non-significant effect upon the potentially available labour pool.

139 For Dundee, Montrose and Aberdeen under the 'High' scenario the sensitivity would be high given that the demand would be higher than the potentially available labour pool (124.66 per cent, 145.73 per cent and 185.05 per cent respectively) and the magnitude would be high, resulting in a **Major** positive significant effect. Despite the demand being more than the potentially available labour pool the impact on those 'economically active' in the catchment area would not result in a negative effect.

140 In the 'High' scenario, the Cromarty Firth would experience considerable pressure on the potentially available labour pool (4,089.24 per cent) and those economically active within the population (150.15 per cent). Currently, the local labour market would be unable to meet these labour requirements, which would lead to labour shortages and 'over-heating' in the economy. Were this to occur, the result would be **Major** negative significant effects for the local economy in this regard (high magnitude of change on high sensitivity receptor). However, this could be addressed through skills and training initiatives and the import of such labour into the catchment area attracted by the available jobs. In these circumstances this would result in **Major** positive significant effects.

141 In practice not all of the offshore wind farm projects would be located at a single facility for the duration of their construction phases for a variety of market, logistical and geographic reasons. Geographic proximity to a given project, developer and manufacturer infrastructure, along with labour force availability, would mean that the various offshore wind farm construction activities are likely to be distributed between these facilities or other more distant locations. This CIA therefore illustrates the 'worst case' for negative effects or 'best-case' for positive effects upon each of the facilities.

16.9.2 Effects of Operation and Maintenance

142 The Development would generate between 80 and 143 FTE net additional jobs, with the combined O&M employment of all the wind farms being between 903 and 1,298 FTE jobs. As this number is no more than 25 per cent of the cumulative construction employment, it is likely there will be negligible magnitude of change on a low sensitivity receptor, resulting in negligible negative non-significant effects within any catchment area within the Economic Study Area, with moderate positive non-significant effects (moderate magnitude of change on moderate sensitivity receptor) likely to arise over the O&M period depending on what combination of projects were supplied from facilities in each catchment areas.

16.9.3 Effects of Decommissioning

143 The Development is estimated to generate 110 FTE net additional jobs during decommissioning. Whilst estimates are not available for all projects, the cumulative impact of the decommissioning of all of the wind farm projects may result in between 1092 and 1559 FTE jobs over the temporary decommissioning phase. As this value is no more than 25 per cent of the cumulative construction employment, the magnitude of change experienced in all the labour market catchments (other than Cromarty Firth) would only be negligible on low sensitivity catchments, resulting in a negligible/minor positive non-significant effect. However, it is likely that there would be a considerable demand on the Cromarty Firth labour catchment area and the magnitude of change would be high, resulting in a Major positive significant effect. Despite the demand being more than the potentially available labour pool the impact on those 'economically active' in the catchment area would not likely result in a negative effect.

16.10 Impact Interactions

144 No impact interactions have been identified within the chapter between different areas or disciplines covered in this EIA Report. However, the results of the assessment will support *Chapter 8: Benefits of the Development* in its discussion of the economic benefits of the Development.

16.11 Conclusion and Effects

16.11.1 Development

145 Table 16.18 below provides a summary of the economic impacts and residual effects that have been assessed as being likely to occur as a result of the Development.

146 For one of the eight catchment areas within the Economic Study Area, significant beneficial effects are assessed as being likely to occur during the construction phase only, these being in the labour market catchment area around the Cromarty Firth.

147 For wider impacts it is considered feasible that during the construction process there will be opportunities for those employed to develop skills that will be of benefit to the Economic Study Area in the longer term, and indeed would be transferrable to other projects. Examples might include, the development of project management and engineering skills, which could be beneficial in terms of ensuring that local companies or individuals are much better placed to compete for future construction work in the wider area, or increasing the number of new starts and supporting small businesses that can benefit from work related to the Development. Once established, these firms or individuals will be in a stronger position to survive and benefit from ongoing work elsewhere. There is also a number of offshore wind farms on the east coast of Scotland at differing stages of construction, as such, there is existing trained resource within the economic study area that can be utilised further during the construction phase of the Development.

148 During the O&M phase, the Development will provide wider opportunities for the involvement of suppliers in the Economic Study Area and, more generally, Scottish suppliers in a range of activities including research and development, design, project management, engineering design, fabrication/manufacture, installation and maintenance.

149 The Development will have positive effects in terms of the development of the renewables sector in the Economic Study Area, and more generally in Scotland. Demand resulting from advancement of the Development would further support production and employment in Scotland, providing a boost to Scottish industry and production capacity. Strengthening Scotland's industrial base, particularly in an industry where global demand is growing, will improve the ability of Scottish firms to compete in world markets, further boosting Scotland's economy.

150 With an increasing number of offshore wind projects under development in Scotland, the potential for long term commercial viability and growth prospects for Scottish firms will increase. Cluster benefits in the industry increase where firms are supported by final demand and intermediate demand. The net effect is to increase business and employment opportunities within both the local and regional renewable energy sector, boosting the performance of local and national economies.

151 For wider impacts, those derived from the decommissioning phase would be similar to those which would arise from the construction phase.

Table 16.18: Summary of effects

Impact	Receptor	Embedded Mitigation and commitments	Effect
Construction			
Moderate/major (positive)	Cromarty Firth ('Base' Scenario)	National, regional and local initiatives involving the Scottish Government and regional and local development agencies with the aim of providing enhanced skills training, supply chain enhancement, and support for business improvement working in the offshore wind industry will assist in realising and maximising the opportunities in the Economic Study Area and where appropriate ICOL will support these initiatives. These would contribute to enhancing the likelihood of employment and output being based within the Economic Study Area.	**Moderate/major significant (positive)**
Major (positive)	Cromarty Firth ('High' Scenario)	See above	**Major significant (positive)**
Negligible/minor (positive)	Economic Study Area ('Base' and 'High' Scenario minus Cromarty Firth)	See above	Negligible/minor non-significant positive)
O&M			
Negligible/minor (positive)	Economic Study Area ('Base' and 'High' Scenario)	See above	Negligible/minor non-significant (positive)
Decommissioning			
Minor (positive)	Economic Study Area (('Base' and 'High' Scenario minus Cromarty Firth)	See above	Minor non-significant (positive)
Minor/moderate (positive)	Cromarty Firth ('Base' and 'High' Scenario)	See above	Minor/moderate non-significant (positive)

16.11.2 Cumulative Impacts

152 The following economic impacts and residual effects are assessed as being likely to occur as a result of the cumulative effect of the Development and the OnTW, and the other offshore wind farms specified in the assessment (*Section 16.9*), on the eight catchments that make up the Economic Study Area.

Table 16.19: Summary of effects and mitigation

Impact	Receptor	Pre-mitigation Effect	Mitigation	Post-Mitigation Effect
Construction				
Minor (Positive)	Leith, Rosyth, Methil and Burtisland ('Base' Scenario)	Minor (Positive)	National, regional and local initiatives involving the Scottish Government and regional and local development agencies with the aim of providing enhanced skills training, supply chain enhancement, and support for business improvement working in the offshore wind industry will assist in realising and maximising the opportunities in the Economic Study Area and where appropriate ICOL will support these initiatives. These would contribute to enhancing the likelihood of employment and output being based within the Economic Study Area.	Minor (Positive)
Minor/Moderate (Positive)	Dundee ('Base' Scenario)	Minor/ Moderate (Positive)	See above	Minor/Moderate (Positive)
Minor/Moderate (Positive)	Montrose ('Base' Scenario)	Minor/ Moderate (Positive)	See above	Minor/Moderate (Positive)
Moderate (Positive)	Aberdeen ('Base' Scenario)	Moderate (Positive)	See above	Moderate (Positive)
Major (Positive) on potentially available labour pool / Moderate (Negative) on those 'economically active'	Cromarty Firth ('Base' Scenario)	**Major (Positive)** / Moderate (Negative)	Addressed through skills and training initiatives and the import of such labour into the catchment area attracted by the available jobs.	Moderate (Positive)

Impact	Receptor	Pre-mitigation Effect	Mitigation	Post-Mitigation Effect
Minor (Positive)	Rosyth ('High' Scenario)	Minor (Positive)	National, regional and local initiatives involving the Scottish Government and regional and local development agencies with the aim of providing enhanced skills training, supply chain enhancement, and support for business improvement working in the offshore wind industry will assist in realising and maximising the opportunities in the Economic Study Area and where appropriate ICOL will support these initiatives. These would contribute to enhancing the likelihood of employment and output being based within the Economic Study Area.	(Minor Positive)
Minor/Moderate (Positive)	Leith and Burtisland ('High' Scenario)	Minor/ Moderate (Positive)	See above	Minor/Moderate (Positive)
Moderate (Positive)	Methil	Moderate (Positive)	See above	Moderate (Positive)
Major (Positive)	Dundee, Montrose and Aberdeen	**Major (Positive)**	See above	**Major (Positive)**
Major (Negative)	Cromarty Firth ('High' Scenario)	**Major (Negative)**	Addressed through skills and training initiatives and the import of such labour into the catchment area attracted by the available jobs.	**Major (Positive)**
Operation and Maintenance				
Negligible/Minor (Positive)	Economic Study Area ('Base' and 'High' Scenario)	Negligible/Minor (Positive)	National, regional and local initiatives involving the Scottish Government and regional and local development agencies with the aim of providing enhanced skills training, supply chain enhancement, and support for business improvement working in the offshore wind industry will assist in realising and maximising the opportunities in the Economic Study Area and where appropriate ICOL will support these initiatives. These would contribute to enhancing the	Negligible/Minor (Positive)

Impact	Receptor	Pre-mitigation Effect	Mitigation	Post-Mitigation Effect
			likelihood of employment and output being based within the Economic Study Area.	
Decommissioning				
Major (Positive)	Cromarty Firth ('Base' and 'High' Scenario)	**Major (Positive)**	See above	**Major (Positive)**
Negligible/Minor (Positive)	Economic Study Area (('Base' and 'High' Scenario minus Cromarty Firth)	Negligible/Minor (Positive)	See above	Negligible/Minor (Positive)

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