

5 Human Environment

5.5 Socio-Economics

5.5.1 Baseline Information

Introduction

5.5.1.1 This section describes the existing socio-economic environment and sets out a baseline of socio-economic indicators. These relate to:

- Economic indicators including employment and Gross Value Added (GVA)¹;
- Social indicators such as population, house prices, education and deprivation; and
- Tourism indicators including the number of visitors and profile.

5.5.1.2 The analysis uses several geographic areas. The main study area is the same as was used in the MORL ES (2012) and is defined as covering the Moray, Highlands, Aberdeenshire and Aberdeen City Local Authority areas (Figure 5.5-1). Moray and Aberdeenshire are the closest authorities to the modified export cable route corridor. Aberdeen City and Highlands are relevant given the number of energy-related businesses and potential supply chain.

5.5.1.3 Local authority areas are used because they provide the most common basis for providing data. For some data, where it is available, more detail has been provided for smaller geographical areas. Effects beyond the study area are likely to be weaker, although given the scale of investment, the likely economic impact on Scotland as a whole is also considered. For the tourism analysis, the focus is on the potential effect of the modified export cable landfall at Inverboyndie, the modified onshore export cable route and the two onshore substations to be sited at New Deer.

Consultations

5.5.1.4 Table 5.5-1 below summarises the consultation responses received with regards to socio-economics:

Table 5.5-1 Summary of Consultation Responses

Organisation	Consultation Response	MORL Approach
Marine Scotland Policy and Planning	The socio-economic aspects of this scoping report are satisfactory. In summary, we would expect the ES to include the gross and net employment impacts, and the gross and net GVA impacts. Both of these should be presented separately for the construction, O&M and decommissioning phases. They should also be reported at a range of appropriate geographic scales. To assist with that, it would be helpful to see a clear definition of the labour market catchment area. Background information on the industry structure and employment structure would be useful. Clear consideration and use of the concepts of additionally, displacement and leakage should also be demonstrated. Ditto regarding economic multipliers.	Results of the economic assessments are presented as the gross employment and GVA supported by the investment. Displacement, leakage and multipliers are discussed in the economic Impact Assessment Section 5.5.2. Data on the labour market structure is included in the baseline information 5.5.1.

¹ Gross Value Added is defined by the Office for National Statistics in its Productivity Handbook (2007) as “the difference between output and *intermediate consumption* for any given sector/industry. That is the difference between the value of goods and services produced and the cost of raw materials and other inputs which are used up in production.”

Organisation	Consultation Response	MORL Approach
Aberdeenshire Council	This part of Aberdeenshire has a very different tourism market to that of the Highlands/Inverness and for the terrestrial element of the EIA it would not be appropriate to use a baseline based on data covering the Highlands. Both Sandend and Inverboyndie are very popular and well used by people for walking, surfing etc. The most significant impact is likely to be disturbance/closure during construction and the installation of the cable and this should be addressed as part of the mitigation.	The assessment provides a more detailed review of tourism assets within Aberdeenshire, although tourism numbers are only available at a regional level. Assessment recognises that Inverboyndie is well used and considers the impact of disturbance/closure.

Baseline Characteristics

- 5.5.1.5 The study area includes the cities of Aberdeen and Inverness with a series of smaller towns along the Aberdeenshire and Moray coast where the export cable comes onshore (Figure 5.5-1). The nearest town on the Moray coast is Buckie (population 8,100). The cable lands in Aberdeenshire at Inverboyndie a beach, close to Banff (population 3,900) and Macduff (3,700). Close to Inverboyndie beach, to the west, is Whitehills, a small fishing village with a population of around 1,000. The largest settlement further east is Fraserburgh (12,500). Inland, the closest town to the modified onshore export cable route corridor is Turriff (4,800), with a number of much smaller villages such as Cuminestown and Aberchirder close by.
- 5.5.1.6 Aberdeenshire Council and Aberdeen City Council areas are characterised by high levels of income (well above the Scottish average), higher house prices and higher proportions of the population working in oil and gas-related jobs. Banff and the Banffshire coast are designated as a priority regeneration area in the Aberdeenshire Local Development Plan 2012.
- 5.5.1.7 Aberdeenshire has a particularly fast rate of population growth. Incomes are lower in the Highland and Moray although unemployment rates in all four local authorities have been below the Scottish average since 2004.

Desktop-Based Studies

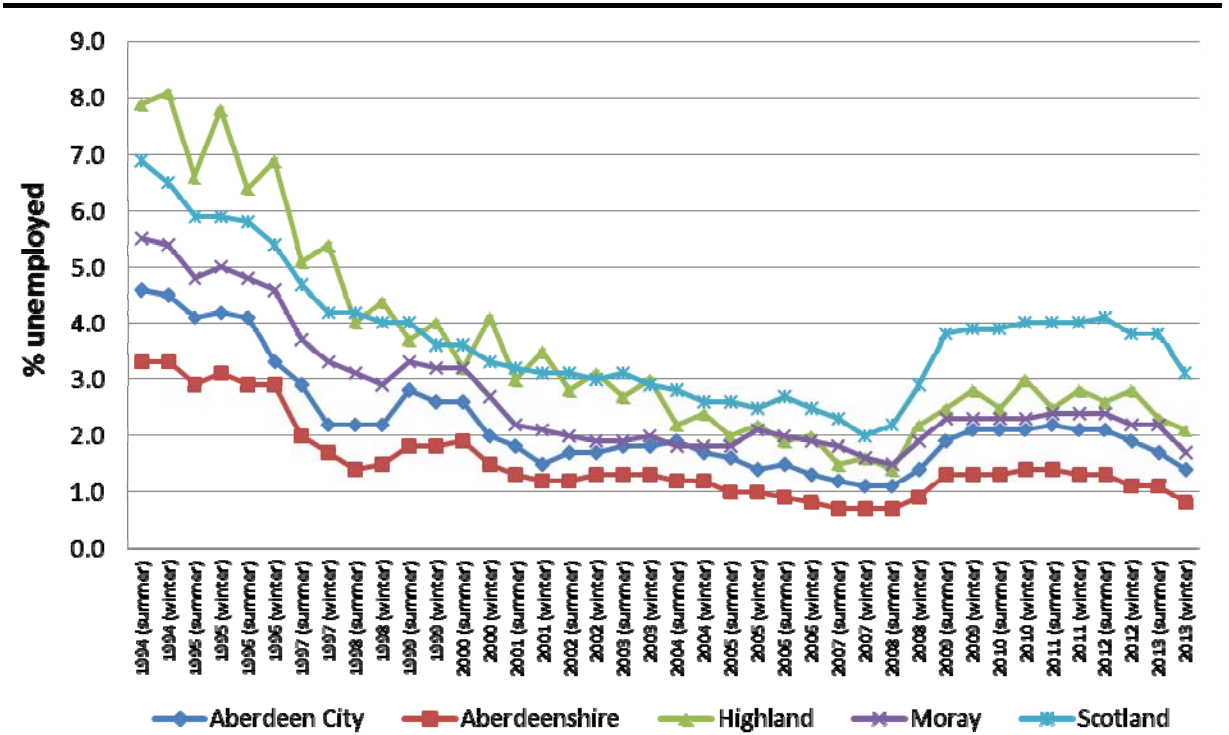
- 5.5.1.8 All the baseline data has been updated from that described within the MORL ES (MORL, 2012). Data is the most up to date available although in some cases this can be several years old.

Population

- 5.5.1.9 Across the study area the total population was 806,300 in 2012, whilst the number of working age people (aged 16 to 64) stood at 529,000 (Office for National Statistics, 2013). This represented 66% of the study area population, slightly higher than the equivalent figure for Scotland as a whole (65%). Aberdeen City had the highest proportion of working age residents (71%) across the study area, whilst Aberdeenshire (65%) was in line with the Scottish average and the Highlands and Moray were below (63% and 63% respectively). In these latter two authorities, the proportion of the population over 65 is slightly above the national average.

Unemployment

5.5.1.10 Unemployment rates in the study area have generally been below the Scottish average since 1994, as depicted in Plate 5.5-1 below (Office of National Statistics, 2014c). The exception is Highland where unemployment was consistently higher than the Scottish average until 1997. Since 2004, unemployment rates in all four local authorities have been below the Scottish average. Unemployment rates generally fell steadily between 2004 and 2008, and though they rose after the onset of the recession the increase was less pronounced than across Scotland as a whole. Data for recent years suggests that unemployment is once again falling.

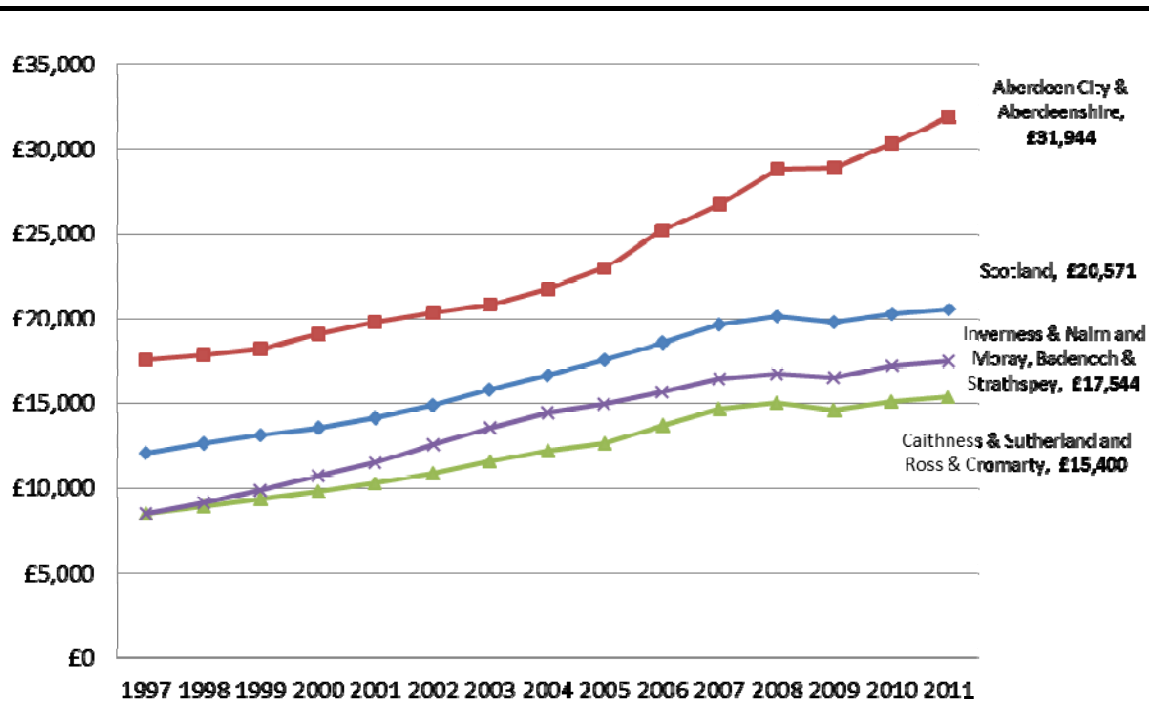


Source: (Office of National Statistics, 2014c)

Plate 5.5-1 Unemployment Rates within the Study Area

Gross Value Added (GVA)

5.5.1.11 There is a large difference in the GVA per head generated in Aberdeen & Aberdeenshire compared with the more rural Moray and Highland areas, as shown in Plate 5.5-2 below (Office of National Statistics, 2012b). This mostly reflects the very high value added of the oil and gas sector. GVA per head in Caithness & Sutherland and Ross & Cromarty is under half that of Aberdeen & Aberdeenshire, at a level below the figure for Scotland as a whole. GVA per head in Inverness & Nairn and Moray, Badenoch & Strathspey is also below the average for Scotland as a whole.



Source: ONS (2012b) Regional Accounts

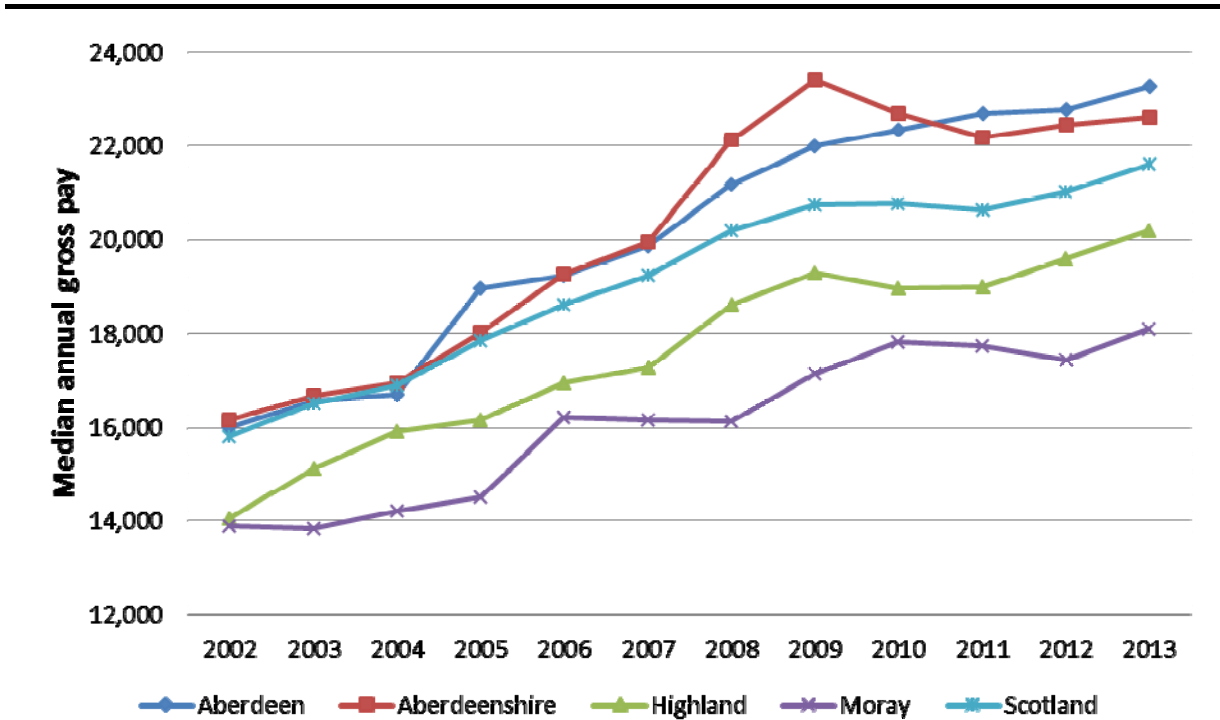
Plate 5.5-2 GVA per Head (NUTS² 3 Geographies within the Study Area)

Individual Median Earnings

5.5.1.12 Nationally, earnings increased steadily between 2002 and 2009, followed by a period to 2012 when they remained broadly stable, as shown in Plate 5.5-3 below (Office of National Statistics, 2014b). In Aberdeen, earnings increased in all years between 2002 and 2013, whereas Aberdeenshire suffered a fall in earnings between 2009 and 2011, with the Highlands also experiencing a small dip in earnings in 2010. In Moray, earnings fell between 2006 and 2008. Nationally and across all local authorities in the study area, earnings once again rose in 2013. The strength of the oil and gas sector has been important in maintaining both employment and earnings in the north east.

² Nomenclature of Territorial Units for Statistics – this is the system of geo-coding adopted for EU countries

5.5.1.13 In absolute terms, median earnings in Aberdeen and Aberdeenshire are well above the Scottish median, while Highland and particularly Moray are significantly below. Median earnings in Aberdeen are around 29% higher than in Moray.



Source: ONS (2014b) Annual Survey of Hours and Earnings - resident analysis

Plate 5.5-3 Individual Median Annual Gross Pay 2002-2013

House Prices

5.5.1.14 The pattern of house prices in the study area has closely followed the national picture (Registers of Scotland, 2013). There were sharp increases in house prices from 2003 onwards, peaking in 2008 just before the financial crisis and subsequent recession. House prices subsequently decreased slightly across all four local authorities in the study area, with the fall being most prolonged in the Highlands and Moray. Aberdeenshire and Aberdeen saw prices dip for only a single year, in 2009, before prices started to rise again. The highest median prices in 2012 were in Aberdeenshire, from where high earners commute to oil and gas related jobs in and around Aberdeen. The median of £188,000 was well above the Scottish national median of £130,050. Prices in Aberdeen City (£160,000) and in Highland (£140,000) were also well above the national figure. Moray, with lower levels of GVA per head and earnings had a slightly lower median house price (£130,000).

Education

5.5.1.15 Table 5.5-2 below sets out the highest level qualifications among the working age population, for each of the local authorities in the study area (Office for National Statistics, 2014a). Aberdeen City is the only local authority to have a higher proportion of its working age population (aged 16-64) educated to NVQ 4+, though every local authority with the exception of Moray have a greater proportion educated to NVQ 3+. All the areas are above the national average for qualifications equivalent to NVQ 2+ and NVQ 1+, and all have a lower proportion of people with no qualifications compared with the national average.

Table 5.5-2 Qualifications Jan 2013 – Dec 2013 by Local Authority area (% of pop aged 16-64)

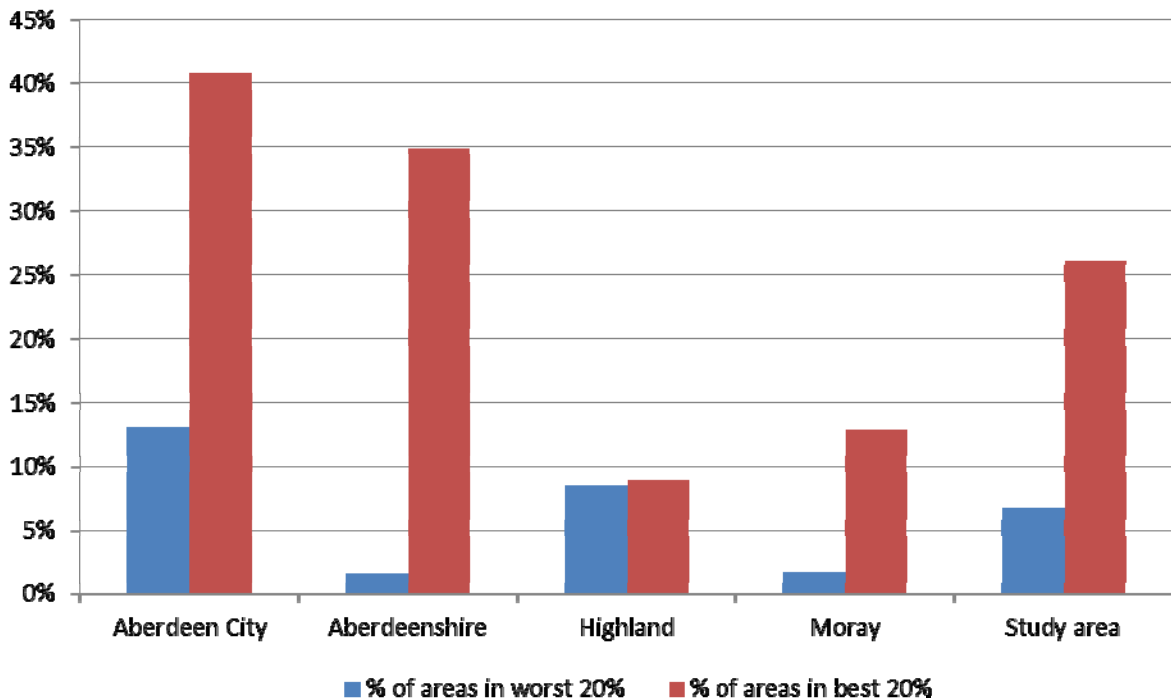
	Aberdeen City	Aberdeenshire	Highland	Moray	Scotland
NVQ 4+	45.5	39.3	38.7	32.6	39.4
NVQ 3+	64.9	61.9	62.1	55.2	59.3
NVQ 2+	79.3	75.1	76.2	75.0	73.7
NVQ 1+	85.6	86.0	87.4	86.9	83.4
None	7.1	7.9	6.6	7.3	10.3

Source: ONS (2014a) Annual Population Survey

Deprivation

5.5.1.16 One of the key measures of quality of life is captured by the indices of deprivation. Though not directly comparable, each index is based on the concept that dimensions of deprivation such as income, employment, education and health can be identified and measured separately. These dimensions, sometimes referred to as 'domains', are then aggregated to provide an overall measure of deprivation for each individual area. It should be noted that in more rural areas such as the Highlands, these scores are often not considered to be as accurate or reflective measures of deprivation as they are for urban areas.

5.5.1.17 Plate 5.5-4, below, shows that quality of life in Aberdeen City and Aberdeenshire compares positively with the Scottish benchmark (Scottish Government, 2012). Forty-one per cent of the neighbourhoods in Aberdeen are in the best 20% in Scotland and 13% in the worst 20%, whilst the figures for Aberdeenshire are 35% and 2% respectively. Whilst Highland and Moray have fewer deprived neighbourhoods than the Scottish benchmark, only 9% of neighbourhoods in Highland and 13% of neighbourhoods in Moray are in the best 20% in Scotland. Every local authority, nevertheless, has a higher proportion of neighbourhoods that are in the best 20% in Scotland than neighbourhoods that are in the worst 20% in Scotland.



Source: Scottish Government (2012) Scottish Index of Multiple Deprivation 2012

Plate 5.5-4 Proportion of neighbourhoods in the best and worst 20% in Scottish IMD rankings by Local Authority

5.5.1.18 Separately, the Scottish Household Survey 2012 collects residents' views of their neighbourhood and reports the percentage of residents that rate their neighbourhood as a "very good" place to live. In common with many of the indicators, Aberdeenshire scores well above the Scottish average (67% compared with 55% nationally), as do Highland (66%) and Moray (66%). Aberdeen City scores in line with the national average (55%) (Scottish Household Survey, 2012).

Employment

5.5.1.19 Oil and gas-related employment is important in Aberdeen and to a lesser extent Aberdeenshire, whilst professional, scientific and technical occupations are important in both areas (Office for National Statistics, 2012a). This is shown in Table 5.5-3. Food and drink production is a major employer in both Moray and Aberdeenshire, while tourism is more important in the Highlands. In Highland and Moray, the proportion of employment in health and education (mostly public sector) employment is above the Scottish average. Although the number of jobs in some sectors, such as fishing and tourism is relatively low, these are important jobs within some of the local towns and villages. Equally several large employers (Dounreay in Highland and the RAF airbases in Moray) have been crucial in maintaining levels of employment/economic activity this last decade. However, employment supported by both of these is declining as a result of the decommissioning of Dounreay and the changing status of RAF Kinloss.

Table 5.5-3 Employment by Sector for the Study Area and for Scotland (BRES data 2012)

Industry	Aberdeen City	Aberdeenshire	Highland	Moray	Scotland
Agriculture, Forestry & fishing	100	2,900	2,000	700	82,400
Mining & Quarrying (Oil & Gas Production)	23,900	3,900	400	100	32,600
Manufacturing	12,800	12,200	7,100	5,700	183,400
Electricity & Gas Supply	200	300	400	-	14,600
Water Supply & Waste	400	500	1,700	200	17,600
Construction	5,600	8,800	6,100	2,500	125,000
Retail	20,100	14,600	15,800	5,700	354,400
Transport & Storage	7,400	3,500	5,300	1,200	96,300
Accommodation & Food Services	11,900	6,100	11,800	2,400	167,100
Information & Communication	3,300	900	2,000	200	58,100
Financial Services	2,000	900	1,300	400	91,300
Real Estate	2,000	1,000	1,500	400	33,300
Professional, Scientific & Technical	24,900	10,100	5,100	1,000	172,500
Business Administration & Support Services	15,600	9,900	5,800	1,400	182,700
Public Administration & Defence	7,700	3,800	5,700	2,400	145,500
Education	9,700	7,200	7,800	3,000	179,700
Health & Social Work	25,300	9,800	18,100	5,400	376,200
Arts, Entertainment, Recreation & Other Services	6,000	4,600	5,000	1,700	113,200
Column Total	176,800	101,000	102,800	34,500	2,425,900

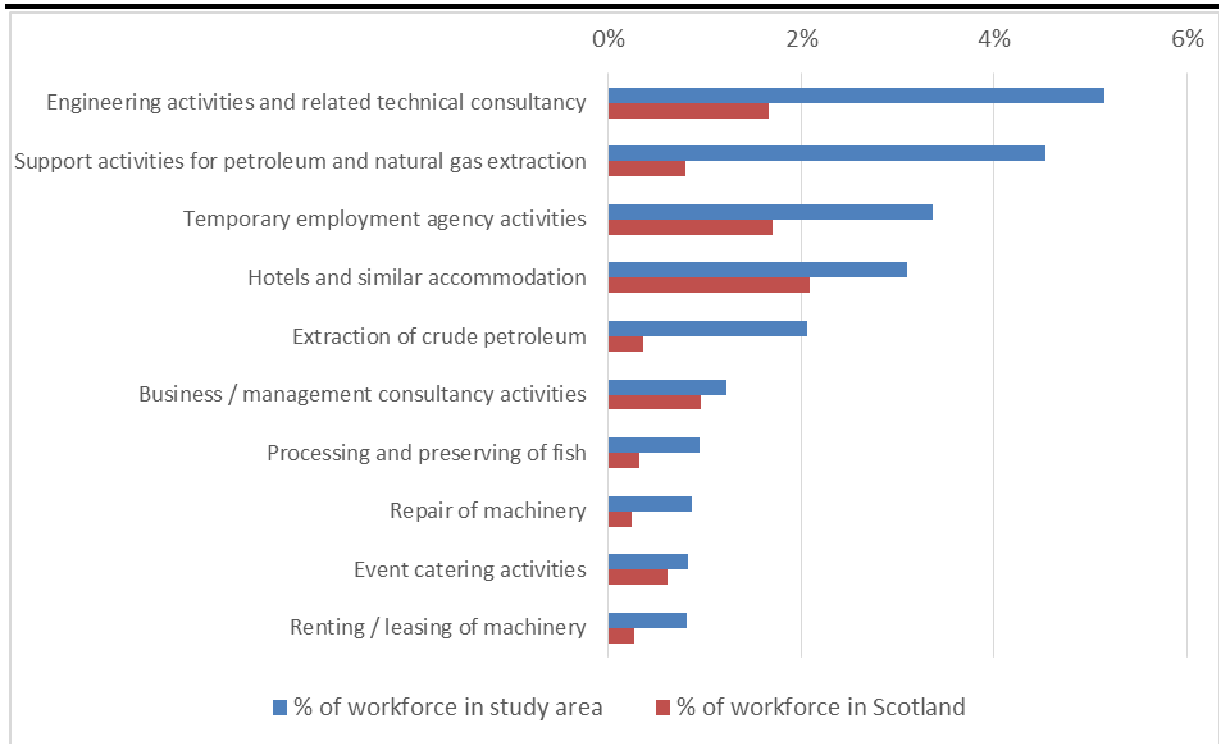
Source: ONS Business Register and Employment Survey (2012a) Note: Data Rounded to 100

5.5.1.20 Employment categorised as “professional, scientific and technical services” is also important in Aberdeen, much of this relates to the oil and gas sector. It includes, for example, engineers, chemists, technicians, designers and architects.

5.5.1.21 Plate 5.5-5 below uses four digit Standard Industrial Classification (SIC) data to show the key sectors in the study area and their importance relative with Scotland as a whole. It shows the importance of the oil and gas sectors and engineering, driven by Aberdeen, and the significance of tourism, which is largely in the Highlands.

5.5.1.22 Employment in Aberdeen City in support of activities for petroleum and natural gas extraction, engineering activities and related technical consultancy and extraction of crude petroleum comes to approximately 37,000, just over a fifth of the workforce. There is a similar pattern in Aberdeenshire with a high proportion of employment in engineering and oil and gas support.

5.5.1.23 It is important to note that the employment structure in Highland and Moray is quite different to Aberdeen, though all three have a high proportion of employment in hospital activities. In Highland there is a high proportion of hotel employment and the hazardous waste treatment at Dounreay. In Moray the dominant activities are in food manufacture, distilling, primary and secondary education.



Source: ONS Business Register and Employment Survey (2012a)

Plate 5.5-5 Key Sectors in the Study Area Relative to Scotland

Supply Chain

- 5.5.1.24 This section considers some of the recent activity in the supply chain in Scotland.
- 5.5.1.25 A study carried out by Scottish Renewables (Scottish Renewables, 2013) estimates that there were a total of 11,695 full time equivalent posts in renewable energy in Scotland in 2013. Of these, 1,842 work on offshore wind projects.
- 5.5.1.26 A report into the UK offshore wind supply chain (BVGA, 2014) notes several examples of recent supply chain activity in Scotland. For example, David Brown Wind UK has plans for a gearbox assembly facility close to Samsung Heavy Industries' proposed facility at Methil, in Fife. The Wind Towers Scotland operating tower manufacturing facilities in Campbeltown is one of only two sites in the UK, whilst Tata Steel has supplied steel plate for turbine towers from its facilities in Motherwell.
- 5.5.1.27 For the modified TI components the BVGA (2014) report describes the current capacity of the UK (not Scotland) supply chain.
- Subsea export cables – there has been no UK supply of subsea export cables to offshore wind to date;
 - HVAC substations - most HVAC substations installed in the UK have been designed and built in the UK; and
 - Subsea cable installation - a small number of vessels have been made in the UK and some vessel modification has been undertaken in the UK. The UK has world-class expertise in cable installation equipment and there are competitive operators.
- 5.5.1.28 Scotland also has a number of programmes that aim to support the supply chain. In 2013, Scottish Enterprise (SE) launched its Scottish Innovative Foundation Technologies (SIFT) fund, a £15m programme to support the demonstration of foundations for water depths of 30 m or more in return for an assurance that manufacturers will set up production facilities in Scotland. There is also support available for demonstrating new turbines, including the £35m Prototyping for Offshore Wind Energy Renewables Scotland (POWERS) fund to target inward investment for offshore wind turbine manufacturers. The Scottish Government, furthermore, is introducing new Renewable Obligation Certificate (ROC) bands to support offshore test and demonstration sites deploying innovative turbines or floating turbines.
- 5.5.1.29 Scottish Development International is working to try and secure inward investment in related manufacturing in Scotland. This will take time to establish the production facilities and then to demonstrate to the market that products are reliable. For the construction phase, Scottish-based firms appear well placed given the strong engineering base and oil and gas experience in the North Sea, however, the availability of suitable vessels and logistics could be a constraint. One of the largest interventions to support the supply chain has been the projects identified in the National Renewables Infrastructure Plan (Scottish Enterprise and Highlands & Islands Enterprise, 2010). This is supported by a £70m National Renewable Infrastructure Fund (N-RIF) within the SE area and with a commitment of support for specific investments in the Highlands and Islands.
- 5.5.1.30 As well as a number of announcements relating to potential inward investment to support offshore wind, there are a number of other related activities. Glasgow has been chosen as the location for the Offshore Renewable Energy (ORE) Catapult centre and the Green Investment Bank is in Edinburgh. Two potential suppliers, offshore engineering firms Technip and Subsea 7, have established renewable divisions in Aberdeen.

5.5.1.31 More generally, SE and Highlands and Islands Enterprise (HIE) have undertaken a number of other initiatives to support the supply chain. Both agencies have developed supply chain databases to better understand where the gaps are and to promote the opportunities from offshore wind and other renewables. SE has launched the Offshore Wind Expert Help programme and Offshore Wind Manufacturing Audits as well as awareness raising events.

Supply Chain Development - MORL Activities

5.5.1.32 MORL is working with HIE and SE in order to deliver a programme of engagement which is intended to enable existing enterprises to diversify and take the actions necessary to compete in the new markets which offshore wind development will bring to Scotland. This has involved sharing information about contracting strategy, project timescale and development and various other commercial aspects with existing local enterprises through collaboration with HIE and SE.

5.5.1.33 Most recently, this engagement included a series of supply chain engagement events in Aberdeen, Inverness and Wick, organised by HIE and SE on behalf of MORL. More than 300 local companies attended, and the events enabled MORL to put local companies in direct contact with a range of likely tier 1 suppliers and provided a forum for enabling access to other business support services provided by HIE and SE.

5.5.1.34 Through information-sharing it is intended that supply chain development can be focussed in a way which will allow local companies to participate competitively at the appropriate entry point to the supply chain.

5.5.1.35 In April 2014, MORL and Global Energy Group signed a memorandum of understanding to facilitate discussions about the use of Nigg Energy Park for assembly and fabrication activities, engineering services, and use of the port to provide onshore facilities to support the offshore activities associated with project delivery.

5.5.1.36 Consideration has also been given to the use of local ports and harbours for the long-term operations and maintenance of the facility, and it is expected that over the summer MORL will announce that other memoranda of understanding have been signed with local ports which are suitable for these purposes, including one in Aberdeenshire.

Skills Development

5.5.1.37 A related part of the effectiveness of the supply chain in Scotland will be the availability of people with the right skills. The jobs created will require a range of skills across the different phases of development, from environmental consultants, engineers, planners, welders, divers, technicians and vessel crew. There are major overlaps with the oil and gas industry.

5.5.1.38 An action plan for energy has been developed by Skills Development Scotland (Skills Development Scotland, 2011). This is being updated in 2014. It describes the main requirements for the sector and reported that the main skills gaps are in engineering (marine, structural, civil, structural and mechanical) leadership and management, project management, welders, turbine technicians and divers. The majority of these jobs require the equivalent of NVQ level 3 qualifications. It estimates that there are around 8,000 undergraduates in related subject areas along with 3,000 postgraduates, while Scotland's Colleges support around 25,000 to 30,000 learners in relevant subjects and there are about 3,000 new apprenticeship starts each year in engineering and energy related jobs.

Tourism

- 5.5.1.39 Tourism is an important part of the Scottish economy. The tourism sector contributes approximately £3 billion in GVA and employs over 180,000 people in over 13,000 tourism-related businesses across the country (Scottish Government, 2014). Despite difficult economic conditions and significant international competition, the industry has proved resilient and is playing an important role in supporting the economic recovery.
- 5.5.1.40 Using a different methodology, a recent Deloitte & Oxford economic report (Deloitte and Oxford Economics, 2013) on the 'tourism economy' estimates that, in Scotland, the sector accounted for around £11.6 billion GVA (10.3% of Scotland's GVA) and 292,000 jobs (10.9% of the workforce) in 2013.
- 5.5.1.41 There are several factors that differentiate tourism from other industries, which make it particularly important in relation to wind farm developments. The first is that it is often disproportionately important in rural and more remote parts of the country. It is one of a few industries that help retain population and income in these areas. The second is that many of the jobs it supports require fewer technical skills and qualifications.
- 5.5.1.42 Its importance to Scotland means that the tourism sector is one of a number of priority industries identified by the Scottish Government, SE and HIE. The national tourism aims are set out in "Tourism Scotland 2020" (The Scottish Tourism Alliance, 2013), which aims to grow annual overnight visitor spend to £6.5bn.
- 5.5.1.43 In the study area, the baseline employment data indicates that tourism is of greater importance in Moray and Highland, where the hotel and restaurant sectors comprise a higher proportion of the businesses and employment. Each of the areas has its own characteristics, but the coast is a major part of the tourism offer for Aberdeenshire in particular.
- 5.5.1.44 The impact of the modified TI construction and operation is an important effect to consider, particularly for the areas immediately located around the onshore substations and the modified export cable route corridor. There is no research on the potential effects of transmission infrastructure on its own; it is usually linked to the potential effects of wind farms. However, a report for the Welsh Government (Regeneris, 2014) notes that in relation to infrastructure; *"Wind farm specific studies as well as more general tourism research have found that wind farms tend to be ranked fairly low amongst the factors that could detract from tourism experience. However, electricity pylons tend to be ranked more highly than wind farms as having a negative effect on landscape value"*.
- 5.5.1.45 The Regeneris study like several studies for VisitScotland (2012) finds that the majority of tourists are neutral about wind farms and do not expect their future visiting behaviour to be affected. The proportions reporting that they were less likely to visit as a consequence of a wind farm development are typically small.
- 5.5.1.46 In 2013 (the most recent data) Scotland attracted just under 15 million visitors a year of which 12 million were from within the UK (6.3 million were from within Scotland). Visitors in total spent nearly 63 million nights in Scotland and spent just over £4.6 billion (VisitScotland, 2014).
- 5.5.1.47 Although tourism is less important in Aberdeen and Aberdeenshire than in the Highlands overall, in particular areas – and for specific communities – it can be a major source of income and employment. The most recent tourism figures from VisitScotland for the relevant areas are shown in Table 5.5-4 (VisitScotland, 2013).

Table 5.5-4 Highland, Aberdeen & Grampian Tourism Data (2012)

		Number	Nights	Expenditure
Highland	Overseas Visitors	0.39m	1.43m	£116m
	Domestic (GB) Visitors	1.87m	6.84m	£393m
	Total	2.26m	8.27m	£509m
Aberdeen & Grampian	Overseas Visitors	0.28m	1.59m	£133m
	Domestic (GB) Visitors	1.43m	3.61m	£259m
	Total	1.71m	5.2m	£392m
Scotland	Overseas Visitors	2.23m	17.5m	£1,401m
	Domestic (GB) Visitors	12.75m	43.32m	£2,891m
	Total	14.98m	60.82m	£4,292m

Source: GBTS and IPS data 2012 Sourced from VisitScotland (2013b)

5.5.1.48 Domestic tourists are fairly evenly divided between English and Scottish visitors across Scotland as a whole, whereas in Aberdeen & Grampian over three-quarters of domestic visitors are from Scotland.

5.5.1.49 The strongest markets for overseas visitors to Aberdeen & Grampian are the USA (13%) with France second (11%). Overseas visitors to Scotland stay an average of 7.9 nights compared with Aberdeen and Grampian where this is 5.7. Visitors from within Great Britain stay an average of 2.5 nights in Aberdeen & Grampian compared with a total of 3.4 for Scotland.

Tourism characteristics of the Immediate Study Area

5.5.1.50 The following descriptions are adapted from VisitScotland and the Banffshire Coast Tourism Partnership (2014).

5.5.1.51 The north of Aberdeenshire combines fishing towns, villages and beaches on the coast while inland the main attractions are castles and distilleries.

5.5.1.52 The modified offshore export cable will come ashore at Inverboyndie (Boyndie Bay) which lies between Banff and Whitehills. Inverboyndie is a Blue Flag beach and recommended by the Marine Conservation Society. It is described by VisitScotland as a popular beach which attracts walkers, swimmers, surfers and windsurfers. Behind the beach is the Banff Links Caravan Park which has 38 touring stances with electricity, 20 stances for tents or touring caravans and an on-site shop.

5.5.1.53 The coast from Whitehills to Melrose the other side of Banff and Macduff is listed as a Site of Special Scientific Interest (SSSI). Whitehills has a redeveloped, village-owned marina with 47 berths. It holds an annual regatta. It also offers a number of walks, one of which connects the town to nearby Banff along the foreshore – a site of special scientific interest.

- 5.5.1.54 Banff is a Georgian town which attracted Robert Burns in the 1700s. Highlights include Banff Castle and Duff House (home to a permanent collection of art from the National Galleries of Scotland). It is possible to take a guided tour around Banff which takes in many architectural highlights, and the town's old harbour has recently been developed as a marina. There is an annual arts festival held in Banff in May and several walks nearby.
- 5.5.1.55 West of Banff lies Macduff, where commercial fishing vessels continue to come in and out of port and land their catch on the quayside. There is always a significant amount of activity at the local shipyard, where boats undergo construction or repair on the slipway. The town is also home to the award-winning Macduff Marine Aquarium. Further east of Macduff, lie Gardenstown, Crovie and Pennan – three picturesque villages – and the nearby RSPB bird reserve at Troup Head. Seabird City at Troup Head, is home to tens of thousands of birds – gannets, puffins, shags, kittiwakes, guillemots and razorbills.
- 5.5.1.56 Further inland and just south of the modified onshore export cable route corridor is Turriff, home to one of Scotland's best-known annual agricultural shows attended by up to 40,000 people. Just a few miles outside of Turriff lies Delgatie Castle.
- 5.5.1.57 Portsoy, west of Inverboyndie, stages the annual Aberdeen Asset Management Scottish Traditional Boat Festival, which attracts up to 16,000 people each year – one of the region's biggest events. Nearby there is Glenglassaugh Distillery as well as Findlater Castle.

Dolphin tourism

- 5.5.1.58 According to the Banffshire Coast Tourism Partnership Programme, the Moray Firth is home to a population of around 130 bottlenose dolphins which is a draw for UK and international tourists. There are around ten identified popular viewing points to see the dolphins, one of which is located at Inverboyndie Beach in Boyndie Bay, where the modified TI will come onland. Sixteen different species of cetaceans – whales, dolphins and porpoises – and other marine life have been recorded in the stretch of water.
- 5.5.1.59 In 2010, The Moray Firth Partnership commissioned Aberdeen Centre for Environmental Sustainability (ACES) to undertake a study to Value the Tourism Expenditure related to the East of Scotland Bottlenose Dolphin Population (Aberdeen Centre for Environmental Sustainability, 2010). The study estimated that the total direct expenditures related to the bottlenose dolphin population was at least £10.4 million, but around a third would potentially be spent elsewhere in Scotland even in the absence of opportunities to see these dolphins. It estimates that the additional tourism expenditure that depends on the presence of the east of Scotland bottlenose dolphin population was at least £4 million, supporting approximately 202 Full Time Equivalent (FTE) jobs. The study found 33% considered seeing dolphins as the main reason for their visit. Estimates were based on a 526 person survey of visitors to recognised dolphin viewing locations and centres around principally the Moray Firth. The bulk of dolphin tourist expenditure is received by general tourist providers around the Moray Firth region, particularly Highland (61%) and Moray (14%).
- 5.5.1.60 There are approximately 12 dolphin and wildlife watching boats and cruises operating around the Moray Firth, some of which sail from Banff, Macduff and Buckie. The tours allow tourists to get close enough to the dolphins – albeit at a safe distance – to take photographs. Visits to see the marine life along the Banffshire coast are often accompanied by the WDCS Wildlife Centre in Spey Bay and the Macduff Marine Aquarium.

Sailing

5.5.1.61 Data on recreational craft use was collected as part of the Shipping and Navigation Assessment and the types of risks that relate to recreational use are considered in more detail in Chapter 5.2: Shipping and Navigation.

Surfing

5.5.1.62 There are a number of sites on the south side of the Moray coast. Marine Scotland (Marine Scotland, 2011) reports a quote from Surfers Against Sewage that “surfing is popular on the south side of the Moray Firth”. The beach at Inverboyndie is described by the website ‘Welcome to Scotland’ as “one of the best surfing spots on the north east coast”. There are also surfing beaches further east at Fraserburgh and to the west at Lossiemouth. There are no estimates of the number of surfers throughout the year, although Inverboyndie is one of the most popular.

Walking and Cycling

5.5.1.63 The Banffshire Coast Tourism Partnership identifies over 30 walking routes along the Banffshire coast. There is no data on the number of people walking these routes. The walks that cross or come to close proximity of the modified onshore export cable corridor are the coastal walk from Banff to Whitehills. Away from the coast, there is a popular circular route which takes in the grounds of Duff House, the River Deveron and the Bridge of Alvah. There are more coastal walks to the west, around Cullen and east from Gardenstown, Crovie and Pennan, but these are further away from the modified cable corridor. In addition to the walking routes, six cycling routes are described by the Banffshire Coast Tourism Partnership. Of these the route along the coastal path and a circular route from Fyvie to Turriff via Cuminestown will cross the modified cable corridor.

Legislation and Planning Framework

5.5.1.64 There are no specific statutory guidelines for the assessment of socio-economic impacts, or in any other statutory or advisory guidance on the preparation of EIAs. The methodology here is the same as was used for the MORL ES (MORL, 2012) which was accepted in support of the consented wind farms and OfTI to Fraserburgh.

5.5.1.65 The concept of economic benefit is explicitly confirmed in the draft consolidated Scottish Planning Policy (2014). This fits with the priority of the Scottish Government to grow the Scottish economy and, more particularly, with the published policy statement “Securing a Renewable Future: Scotland’s Renewable Energy”. The development would also qualify as a National Project under the proposed NPF3.

5.5.1.66 The Scottish Planning Policy Consultation Draft (2014) considers that the planning system should “attach significant weight to economic benefit of proposed development as a material consideration, particularly the creation of new jobs, recognising and responding to economic and financial conditions” (paragraph 17).

5.5.1.67 The methodology used here draws on good practice guidance for assessing economic impact published by agencies including HM Treasury Green Book, English Partnerships (now the Homes and Communities Agency) Additionality Guide (2008) and Scottish Enterprise’s Additionality & Economic Impact Assessment Guidance Note (2008).

5.5.1.68 The economic element of this assessment focuses on the scale of employment that would be associated or supported by the MORL Modified TI. This does not take into account any loss of employment or economic activity that may occur elsewhere as a result of, for example changes in the electricity market.

5.5.1.69 The scope of the economic element of the assessment is to estimate the significance of the employment and GVA that would be associated with the expenditure made in relation to the construction, operation and decommissioning of the modified TI investment. This is subsequently referred to as the economic impact.

5.5.2 Impact Assessment

Summary of Effects and Mitigation

5.5.2.1 The socio-economic effect of the modified TI is limited to the construction, operation and decommissioning of the:

- Supply and installation of 2 Offshore Substation Platforms (OSPs);
- Supply and installation of offshore export cables; and
- Supply and installation of onshore cables and substations.

5.5.2.2 The total number of jobs supported at its peak in the study area is anticipated to be between 40 and 220 and, in Scotland, between 160 and 250 during construction. This employment is relatively short term lasting up to five years.

5.5.2.3 While both the Base Case and High Case results are shown for employment and GVA, the assessment is undertaken using the Base Case results, given their higher degree of certainty than those associated with the High Case.

5.5.2.4 During construction the employment and GVA effects are considered to be **major positive**, while there is a **minor negative effect** on tourism and recreational walking as a result of the temporary construction close to the shore at Inverboyndie.

5.5.2.5 During operation the effects on employment and GVA are considered to be **minor positive** while the other effects are **negligible**. During decommissioning the effects are the same as for construction.

Proposed Mitigation Measures and Residual Effects

5.5.2.6 As there are no significant negative effects identified in the assessment, there are no mitigation measures and the residual effects are as the assessment conclusions. Table 5.5-5 below summarises the impact assessment.

Table 5.5-5 Impact Assessment Summary

Effect	Receptor	Pre-Mitigation Effect	Mitigation	Post-Mitigation Effect
<i>Construction</i>				
GVA	Businesses	Major (+)	None	Major (+)
Employment	Residents/businesses	Major (+)	None	Major (+)
Leisure Tourism	Visitors/businesses	Minor	None	Minor
Business Tourism	Visitors/businesses	Negligible	None	Negligible
Walking	Residents/visitors	Minor	None	Minor
Surfing & Sea Kayaking	Residents/visitors	Negligible	None	Negligible
<i>Operations</i>				

Effect	Receptor	Pre-Mitigation Effect	Mitigation	Post-Mitigation Effect
GVA	Businesses	Minor (+)	None	Minor (+)
Employment	Residents/businesses	Minor (+)	None	Minor (+)
Leisure Tourism	Visitors/businesses	Negligible	None	Negligible
Business Tourism	Visitors/businesses	Negligible	None	Negligible
Walking	Residents/visitors	Minor	None	Minor
Surfing & Sea Kayaking	Residents/visitors	Negligible	None	Negligible
<i>Decommissioning</i>				
GVA	Businesses	Minor (+)	None	Minor (+)
Employment	Residents/businesses	Minor (+)	None	Minor (+)
Leisure Tourism	Visitors/businesses	Negligible	None	Negligible
Business Tourism	Visitors/businesses	Negligible	None	Negligible
Walking	Residents/visitors	Minor	None	Minor
Surfing & Sea Kayaking	Residents/visitors	Negligible	None	Negligible

Introduction to Impact Assessment

5.5.2.7 This section provides details of the methodology used to estimate the significance of effects that the modified TI will have on the economies that make up the study area (Aberdeen, Aberdeenshire, Moray and Highlands) and on Scotland as a whole.

5.5.2.8 It is not possible or appropriate for this analysis to provide an indication of who the successful contractors might be or where they might be based. The assessment should be considered as indicative of the pattern of expenditure anticipated, but may not reflect the actual procurement decisions when they are made.

5.5.2.9 It represents the “best estimates”, at this time, of the ranges of expenditure and employment that could be supported. This chapter is presented in two parts covering:

- The approach to assessing the effect of project expenditure; and
- The approach to assessing the effect on tourism and recreation.

5.5.2.10 Recreation includes the effects on surfing, sea kayaking and walking. There are also potential recreational aspects related to fishing and sailing. The effects on fish and fishing are fully discussed in Chapter 4.2: Fish and Shellfish Ecology and Chapter 5.1: Commercial Fisheries. Recreational sailing is discussed in Chapter 5.2: Shipping and Navigation.

5.5.2.11 The modified TI elements considered in this assessment are:

- Supply and installation of 2 OSPs;
- Supply and installation of offshore export cables; and
- Supply and installation of onshore cables and substations.

5.5.2.12 This chapter contains relevant information on the modified TI to allow Aberdeenshire Council and Marine Scotland to make decisions on the applications for consent.

5.5.2.13 The Socio-Economics, Recreation and Tourism assessment interacts with assessments for the following receptors and where relevant linkages have been made within the assessment:

- Chapters 3.1: Hydrodynamics Sedimentary and Coastal Processes;
- Chapters 4.3: Marine Mammals;
- Chapters 5.1: Commercial Fisheries;
- Chapters 5.2: Shipping and Navigation; and
- Chapters 5.3: Seascape, Landscape and Visual Assessment.

Rochdale Envelope Parameters Considered in the Assessment

5.5.2.14 Relevant parameters defining the 'Rochdale Envelope' for Socio-Economics, Recreation and Tourism are presented in Table 5.5-6 below. The maximum foreseeable adverse scenario for Socio-Economics relates to the minimum predicted expenditure in transmission infrastructure to export energy from the three consented windfarms. Therefore these parameters are based on an indicative layout and outputs from financial models carried out by MORL which are available at the time of writing this assessment.

5.5.2.15 Tourism impacts relate to the maximum predicted seascape, landscape and visual effect and for recreation the maximum number of structures / longest modified export cable route option.

Table 5.5-6 Rochdale Envelope Parameters Relevant to the Socio-Economics, Recreation and Tourism Impact Assessment

Potential Effect	Rochdale Envelope Scenario Assessed
<i>Construction, Operation & Decommissioning</i>	
Employment and GVA	<p>For employment and GVA impacts, uses the minimum predicted expenditure, in the local area and Scotland, to transport energy from the three consented wind farms. This provides the minimum jobs and GVA supported in these areas:</p> <ul style="list-style-type: none"> • Maximum of 2 OSPs; • Two onshore substations with the following dimensions (280 m x 180 m and 290 m x 170 m by 12.5 m high); • Screening to be agreed; • Both unmanned; • Modified offshore export cable route corridor of 52 km from the three consented wind farms to landing; • Cable Trench width 4 m; • Target depth 1 m; • Maximum working width 60 m; and • Inverboyndie (length from shore to onshore substations at New Deer) 33 km.
Tourism and Recreation	<p>For tourism and recreation uses, maximum predicted seascape, landscape and visual effect/maximum number of substructures/longest modified export cable route options.</p>

EIA Methodology

5.5.2.16 The methodology adopted is the same as outlined in the MORL ES (2012) (Section 8.6.5 of Chapter 8.6: Socio-Economics, Recreation and Tourism). This includes the description of the scope and limitations of the analysis.

Assessment of Significance Criteria

5.5.2.17 The assessment combines conclusions on sensitivity and magnitude to produce an overall significance as shown in Table 5.1-7. For the purposes of this assessment a moderate effect or above is regarded as significant in EIA terms.

Significance Criteria

5.5.2.18 The assessment of significance is based on combining the degree of sensitivity of the receptor (i.e. the economy) with the magnitude of the predicted effects (scale and duration). These effects can be characterised as positive, negative or neutral.

Sensitivity of Receptor

5.5.2.19 This criterion considers how sensitive receptors are to changes. Sensitivity is defined using professional judgement based on the overview of the economy, for example, the levels of unemployment, skills and business capacity.

Magnitude of Effect

5.5.2.20 The magnitude of the effect within the study area will depend on a number of factors, primarily the scale and duration of effects. In some cases the effect is assessed directly from the estimates of the number of jobs and the value of GVA that would be supported by the project's expenditure. The duration relates to the length of time that the effect will last.

To determine an overall assessment as to whether the magnitude of effect is negligible, low, medium or high, the scale and duration of effect are considered together.

There is no specific number or guidance that defines whether the magnitude is negligible, low, medium or high and the conclusion is a professional judgement.

Table 5.5-7 Matrix of Significance Effect

		Magnitude			
		Negligible	Low	Medium	High
Sensitivity	Low	Negligible	Minor	Minor	Moderate
	Medium	Negligible	Minor	Moderate	Major
	High	Negligible	Moderate	Major	Major

Impact Assessment

5.5.2.21 Although the employment and GVA associated with the expenditure of the OSPs are included here, the visual effects of the OSPs are considered by the Seascape, Landscape and Visual Impact Assessment (SLVIA) (see Chapter 5.3) and are considered to be inseparable from the three consented wind farms. Therefore they are not included as part of the modified TI assessment for tourism and recreation.

5.5.2.22 In order to assess the employment and GVA that could be generated in Scotland and in the Study Area, estimates of expenditure were made by MORL, based on the best knowledge to date of the likely expenditure on each of the components of the modified TI investment. Given the uncertainties involved, this was done under two scenarios:

- Base Case - the total value of contracts that have been delivered, or are expected to be delivered, from within each geography, assuming the current supply chain.
- High Case - the total value of contracts that could be secured by firms based in Scotland (and the study area) with a stronger supply chain. This assumes that where Scottish-based firms are not currently in a position to tender for work, (but there is good reason to expect them to be in the future), they are successful.

5.5.2.23 Despite Base Case and High Case results being shown for employment and GVA, the assessment is undertaken using Base Case results given the higher degree of uncertainty associated with the High Case.

Displacement, Leakage and Multipliers

5.5.2.24 Displacement occurs where the new or supported economic activity created is at the expense of economic activity somewhere else. For example, if the new jobs and GVA created by constructing the modified TI were to reduce employment and GVA in other businesses at a local level, the economic activities supported through the investment are likely to be new and additional. The potential for displacement to result from supply bottlenecks, for example where several projects are developed at the same time, is considered in the Cumulative Impacts section.

5.5.2.25 Leakage occurs when the benefits of the investment do not accrue within the study area. For example where the investment supports jobs elsewhere. The analysis has been careful to use information from MORL about their expenditure with specific business *sites* from where goods and services would be delivered and not simply the companies that they may use. This means that the local employment and GVA should occur at these sites and should therefore exclude any leakage.

5.5.2.26 In addition to the direct employment effects, it is also important to consider the **indirect** and **induced** multiplier effects that the development investment will generate.

- Indirect effects - as suppliers increase output to meet the additional demand for their goods and services, there will also be a resultant increase in demand on their own suppliers and so on down the supply chain.
- Induced effects - as a result of the direct and indirect effects, household incomes will increase in line with the increased employment created by the development directly and throughout the supply chain. A proportion of this increased income will be re-spent on other goods and services creating employment.

5.5.2.27 Both the employment and GVA estimates include multiplier effects. The Scottish Input-Output Tables (Scottish Government) have been used to produce ratios of turnover to GVA for the different industries that would be likely to be contracted to carry out this work. Details of the calculations and the multipliers used are set out in the MORL ES (2012) (Section 8.6.6 Socioeconomics, Recreation and Tourism).

5.5.2.28 The assessment does not include land lease payments or compensation that may be made to landowners.

Construction

Employment Effects during Construction of Modified TI

5.5.2.29 The employment effects relate to the jobs associated with the expenditure on the three elements of the modified TI described. Employment will be supported through the supply and installation of OSPs, offshore and onshore export cables and onshore substations.

5.5.2.30 Table 5.1-8 below summarises the projected employment associated with the modified TI expenditure. For the study area, under the Base Case, the total number of job years is anticipated to be around 140, and 790 under the High Case. For Scotland as a whole this is from 560 to 920. Under the Base case, while a proportion of the substation work is expected to come from within Scotland, other installation activities are expected to be sourced from either the rest of the UK or overseas.

Table 5.5-8 Employment Effects in Job Years for Modified Transmission Infrastructure

	Study Area			Scotland		
	Direct	Indirect + induced	Total	Direct	Indirect + induced	Total
Base Case	90	50	140	310	240	560
High Case	510	280	790	580	340	920

5.5.2.31 Employment in relation to the supply and installation of the modified TI lasts only through the construction period, although it is substantial. Table 5.1-9 shows the peak employment under each of the scenarios.

5.5.2.32 In the peak year, including the multiplier (indirect and induced effects), under the Base Case, there are estimated to be around 40 jobs from within the local study area rising to 218 under the High Case. In Scotland (including the study area) the Base Case supports around 162 jobs and the High Case 251.

Table 5.5-9 Employment Effect Summary during Construction of Modified TI

		Construction Phase (Peak Employment in 2018)		
		Direct	Indirect + induced	Total
Study Area	Base Case	26	14	40
	High Case	140	78	218
Scotland (Including Study Area)	Base Case	90	72	162
	High Case	158	93	251

Sensitivity

5.5.2.33 Employment is a core measure of socio-economic activity, reflected in the importance attached to rates of employment and unemployment. Levels of unemployment and the availability of employment opportunities are very important for the economic health of communities, the Study Area and Scotland. Changes in employment are therefore considered to be of high sensitivity.

Magnitude

5.5.2.34 Within the study area the assessment suggests that employment associated with the modified TI, under the Base Case, is more short term than that supported by the operation of the wind farms. The employment effects from construction last only until 2021. Even so, there is the potential for a relatively large number of jobs to be supported depending on the contracts that are secured by businesses in Scotland.

5.5.2.35 At both the level of the Study Area and in Scotland, these levels of employment in the Base Case are considered to be of medium magnitude.

Significance

5.5.2.36 Combining the sensitivity and magnitude assessments, the employment associated with the modified TI in the Base Case is considered a **major positive** effect and is therefore significant in terms of the EIA.

GVA Effects during Construction of Modified TI

5.5.2.37 Table 5.1-10 provides a summary of the GVA effects for the Study Area, Scotland and the rest of the UK under the Base and High Cases. For the study area, it is estimated that the modified TI will generate £15 million in GVA under the Base Case and £71 million under the High Case, including the multiplier effects.

5.5.2.38 In Scotland the modified TI would generate GVA of between £56 million and £81 million, including the multiplier effects. The difference reflects the potential levels of local and national supply.

Table 5.5-10 GVA Effects in £ Millions (2014 prices) during Construction of Modified TI

	Study Area			Scotland		
	Direct	Indirect + Induced	Total	Direct	Indirect + Induced	Total
Base Case	10	5	15	33	23	56
High Case	48	23	71	53	28	81

Sensitivity

5.5.2.39 GVA represents the difference between the value of goods and services produced and the cost of raw materials, from which is paid wages, salaries and profits. It is therefore a core measure of economic wealth. Wages, salaries and income are all important elements in determining quality of life for residents in the study area and in Scotland. Sensitivity to changes in GVA is therefore considered to be high.

Magnitude

5.5.2.40 The magnitude of the GVA generated by the modified TI in the Base Case, both at the Study Area level and in Scotland, is judged to be medium. The figure of £15 million is significant although a relatively small proportion of the overall GVA for the local area.

Significance

5.5.2.41 Combining the sensitivity and magnitude assessments, the GVA effect associated with the expenditure on construction of the modified TI in the Base Case is considered to be of **major positive** significance, and therefore significant in terms of the EIA.

Leisure Tourism during Construction of Modified TI

5.5.2.42 The tourism element of the analysis considers the effect of the modified TI on the volume and value of tourists visiting the study area and Scotland. The assessment excludes any visual impacts from the OSPs which were considered by the Seascape, Landscape and Visual Impact Assessment (SLVIA) to be inseparable from the three consented wind farms (see Chapter 5.3 Seascape, Landscape & Visual Assessment). Therefore they are also not included as part of the modified TI assessment for tourism and recreation.

5.5.2.43 The analysis distinguishes between two types of effect:

- **Direct effects** on local tourism 'assets' (e.g. physical changes to public rights of way, paths, scenic areas and so on) which the new development may cause. This could include factors such as closure or diversion of access to tourism assets or the removal of those assets.
- **Indirect effects** on local tourism assets. In this case, indirect effects mainly relate to changes in amenity through the permanent or temporary modification of land and seascapes. There could also be effects as a result of any disturbance or injury to terrestrial, coastal or marine wildlife interests (e.g. for wildlife watching) during construction, operation or decommissioning of the modified TI.

5.5.2.44 There is potential for the export cable laying activity offshore, and onshore, to limit access to the sea and/or areas of land during construction. While the impacts of the cable laying will be temporary (lasting only during the construction phase), the onshore substations will be permanent, or at least for the lifetime of the project.

5.5.2.45 A full assessment of the visual effects of the modified TI on seascape, landscape and visual receptors is provided in Chapter 5.3: Seascape, Landscape and Visual Assessment of this ES, and this has not been considered as part of the tourism assessment.

5.5.2.46 The main strengths of the tourism offer on the Banffshire coast and North Aberdeenshire are its unspoilt environment, wildlife, the coast, castles, walking, cycling and whisky. The construction of the modified offshore and onshore export cable route will not cause permanent changes to these assets but some temporary disruption for visitors. These are likely to be direct effects, limiting access to parts of the beach, and close to the shore while cables are laid. There will require to be diversions for walking routes, and noise from the construction work itself. These temporary effects are likely to impact on beach users, those staying nearby and users of the Whitehills marina. The number of people this will affect depends on the time of year the work will be done.

5.5.2.47 The onshore substations are permanent constructions, however their location and screening will mean that their effect on tourism will be very limited.

5.5.2.48 The marine mammal assessment states that no significant long term effects are predicted on the Moray Firth bottlenose dolphin population from the construction of the modified TI (Chapter 4.3: Marine Mammals of this ES) and therefore no significant effects are predicted on dolphin tourism.

5.5.2.49 Tourist sensitivity will be low when laying the cable further offshore. Nearer to the shore, construction will have a temporary impact on tourists visiting the coast, walking, staying in the caravan park or using the beach and marina. Sensitivity of tourists to the construction is considered to be medium.

5.5.2.50 The magnitude of the effect (which takes into account the level of effect, its duration and the number of people that are affected) relative to the study area is likely to be low as the effects will be temporary and the number of tourists affected small, relative to the overall tourism numbers in the study area as a whole. Together this indicates **minor** significance.

Business Tourism during Construction of Modified TI

5.5.2.51 The construction of the modified TI will generate some new trade for tourism related businesses locally. This would include accommodation, bar and restaurant services. The level of business tourism activity locally will be sensitive to the business that this would create, although the magnitude of the effect is considered to be negligible. This indicates **negligible** significance.

5.5.2.52 A summary of the effects on tourism during construction of the modified TI is shown in Table 5.5-11.

Table 5.5-11 Tourism Effect Significance during Construction of Modified TI

	Sensitivity	Magnitude	Significance
Leisure Tourism	Medium	Low	Minor
Business Tourism	Medium	Negligible	Negligible

Walking during Construction

5.5.2.53 The proposed route crosses the coastal walk between Whitehills and Banff and access may be limited for a short period during the export cable laying. The route will be used mainly by local day visitors along with tourists in the summer. Inland the construction of the substations will cause some disruption around New Deer, although it does not affect the Formatine and Buchan long distance routes which pass through Maud.

5.5.2.54 Sensitivity to the construction phase is medium for walkers using the coastal route, but the temporary nature of the work means that the magnitude is low and the significance is considered to be **minor**.

Surfing and Sea Kayaking during Construction

5.5.2.55 For surfers, the surfing wave quality is critical to the attraction of a location. The landfall point near a surf spot could interfere with the waves and installation of the export cables could restrict access. Sea kayaking, like surfing, also requires access and appropriate sea conditions. Any effect would be at Inverboyndie beach where the export cable comes ashore, but would be a temporary effect. The sensitivity of surfers and other recreational sea users during construction would be medium, but the magnitude of the effect would be negligible given the short duration and relatively small number participating. Combining the sensitivity and magnitude assessments, the recreation effect associated with the modified TI is considered to be **negligible**.

5.5.2.56 A summary of the recreation effects during construction of modified TI are shown in Table 5.5-12 below.

Table 5.5-12 Tourism Effect Significance during Construction of Modified TI

	Sensitivity	Magnitude	Significance
Walking	Medium	Low	Minor
Surfing, Sea Kayaking	Medium	Negligible	Negligible

Operation

Employment Effects during Modified TI Operation

5.5.2.57 The employment effects relate to the jobs associated with the operations and maintenance of the modified TI, and the operation of the onshore substations. There is no separate expenditure data on the costs of operating the modified TI, which is essentially its maintenance and security. This is likely to support a small amount of employment as part of a maintenance and security contract. There is therefore considered to be **minor positive** significance for both employment.

5.5.2.58 The effect on GVA during operation is similar to employment. Although there is no separate expenditure data available for the maintenance and security of the modified TI once in operation, it is likely that there will be contracts tendered for provision of these services which will support GVA, although this will be low relative to the expenditure and GVA associated with construction. There is therefore considered to be **minor positive** significance for GVA under the Base Case.

Tourism Effects during modified TI Operation

5.5.2.59 The tourism element of the analysis considers the effect of the modified TI on the volume and value of tourists visiting the study area and Scotland.

5.5.2.60 Once in operation the landing point at Inverboyndie will be returned to its previous condition, where reasonably practicable, and the onshore export cables will be buried. The only element of the modified TI that could have an effect on tourism will be the onshore substations. The onshore substations are not located in an area that attracts significant numbers of tourists and therefore it is not considered that it will have an effect on the number of tourists in the study area. During operation the export cables will be buried and therefore have no effect on leisure tourism. The effect is assessed as being of **negligible** significance.

Business Tourism Effects during Modified TI Operation

5.5.2.61 During operation there is not expected to be any related business tourism associated with the modified TI. The significance of the effect during operation would be **negligible**. A summary of the tourism effects during operation are shown in Table 5.5-13.

Table 5.5-13 Tourism Effect Significance during Modified TI Operation

	Sensitivity	Magnitude	Significance
Leisure Tourism	Medium	Negligible	Negligible
Business Tourism	Medium	Negligible	Negligible

Walking

5.5.2.62 A direct effect on walking would occur where the modified TI would limit access or use of paths. During operation, the export cables will be buried and have no effect on access to walking routes. The onshore substations are not located where they would impact on recreational walking routes and the magnitude of the effect would be low. This indicates a **minor** significance.

Surfing & Sea Kayaking

5.5.2.63 During operation, the offshore export cables would be buried and would have no significant effect on waves (see Chapter 3.1: Hydrodynamics, Sedimentary and Coastal Processes) and surfing activity. The effect is considered to be **negligible**.

5.5.2.64 A summary of the recreation effects is shown in Table 5.5-14.

Table 5.5-14 Recreation Effect Summary during Operation of Modified TI

	Sensitivity	Magnitude	Significance
Walking	Medium	Low	Minor
Surfing, Sea Kayaking	Medium	Negligible	Negligible

*Decommissioning**Employment and GVA Effects during Modified TI Decommissioning*

5.5.2.65 The employment effects relate to the jobs associated with the decommissioning of the modified TI. There are no separate estimates of the employment of this part of the decommissioning work which would take place alongside the decommissioning of the three consented wind farms. The estimate for the full decommissioning is included in the wind farms impact assessment described in the MORL ES (2012) (Chapter 8.6: Socio-Economics, Recreation and Tourism). However, it should be noted that, although not quantified, a small proportion of these jobs could be attributed to the modified TI, and therefore this is considered to be of **minor positive** significance for both employment and GVA under the Base case.

Tourism Effects during Modified TI Decommissioning

5.5.2.66 As was covered in the construction phase, the tourism element of the analysis considers the effect of the modified TI decommissioning on the level of tourists visiting the study area and Scotland. As was identified in the construction phase there is the potential for the removal of the onshore export cables and substations to limit access to the areas of land (and sea shore).

5.5.2.67 There is likely to be temporary disruption to access to part of the seashore, coastal path and potentially some limitations to boat use. However the temporary nature of the work and the relatively small number of tourists means that the magnitude is considered to be negligible. Combined, significance is considered to be **negligible**.

Business Tourism during Modified TI Decommissioning

5.5.2.68 During decommissioning any related business tourism associated with the modified TI would be expected to be limited. The significance of the effect during decommissioning would be negligible. A summary of the tourism effects during operation are shown in Table 5.5-15.

Table 5.5-15 Tourism Effect Significance during Modified TI Decommissioning

	Sensitivity	Magnitude	Significance
Leisure Tourism	Medium	Negligible	Negligible
Business Tourism	Medium	Negligible	Negligible

Walking

5.5.2.69 A direct effect on walking would occur where the decommissioning of the modified TI would limit access or use of paths. As described for the construction phase, the modified onshore export cable route would cross the coastal path between Whitehills and Banff and the decommissioning work could directly prevent users from accessing parts of the route temporarily. For users, or potential users of the walk, sensitivity to this work would be medium. The effect would be temporary and require some diversions for users. The magnitude of the effect would therefore be low. Taken together this indicates a **minor** significance.

Surfing & Sea Kayaking

5.5.2.70 The modified export cable route will come ashore at Inverboyndie and decommissioning, although temporary, would impact on access for a short time, and only on part of the beach. The magnitude of the effect will depend on how quickly the work can be completed, the time of year and how much access to the beach is restricted. Sea kayaking, like surfing, also requires access and appropriate sea conditions which could be disrupted temporarily.

5.5.2.71 Sensitivity to the modified TI decommissioning is considered to be medium. The magnitude of the effect relates to its scale, its duration and the number of people affected. In this case although the beach is well used, the impacts will be for a short time. For both surfing and sea-kayaking, the temporary nature of the work and the small proportion of the population in the study area that would be affected indicate that the magnitude would be negligible.

5.5.2.72 Combining the sensitivity and magnitude assessments, the recreation effect associated with the modified TI is considered to be **negligible** and not significant in terms of the EIA.

5.5.2.73 A summary of the recreation effects during decommissioning of the modified TI are shown in Table 5.5-16.

Table 5.5-16 Recreation Effect Summary during Decommissioning of Modified TI

	Sensitivity	Magnitude	Significance
Walking	Medium	Low	Minor
Surfing, Sea Kayaking	Medium	Negligible	Negligible

Proposed Monitoring and Mitigation

5.5.2.74 From the assessment above there are no negative effects of moderate or greater significance and therefore no significant adverse effects have been identified. Accordingly, no mitigation is required.

5.5.3 Cumulative Impact Assessment

Summary

5.5.3.1 This section presents the results of assessment of potential cumulative Socio-economic effects arising from the modified TI in conjunction with other existing or reasonably foreseeable marine coastal and onshore developments and activities. MORL's approach to the assessment of cumulative effects is described in Chapter 1.3: Environmental Impact Assessment.

5.5.3.2 The developments and activities considered in detail within this assessment are listed below.

- MORL three consented wind farms;
- MORL Western Development Area (WDA);
- BOWL wind farm and TI; and
- SHE – T reinforcement (cable from Caithness to Blackhillock, coming onshore at Portgordon).

5.5.3.3 In relation to the employment and GVA cumulative effects, the timing of expenditure and the supply chain are important. If the development of the modified TI coincides with other demands for similar resources, it could lead to supply bottlenecks with more elements of the development being contracted from outside Scotland.

5.5.3.4 In the case of the modified TI, the supply chain is fairly specialised. There are not likely to be supply constraints caused by work on the main elements of the wind farm construction. The Base Case assumes a relatively small proportion of the TI construction would be sourced locally so this should not be constrained further by supply.

5.5.3.5 Considered cumulatively with the other TI construction (Beatrice Offshore Wind Farm (BOWL) TI and SHE-T) there may be slightly more chance of supply constraints as these projects require many of the same resources. Any effect is unlikely to be significantly large to change the conclusions for the modified TI. Cumulatively the significance for GVA and employment therefore remains **major positive** during construction and **minor positive** during operation.

5.5.3.6 For tourism, the projects considered in the assessment of cumulative effects include the three consented MORL wind farms and BOWL and the MORL Western Development Area (WDA). Given the distance between the wind farm sites and visible TI aspects there are no additional or exacerbated visual effects likely to impact on tourism (Chapter 5.3: Seascape, Landscape and Visual Assessment) and so these are not considered.

- 5.5.3.7 However, there may be some cumulative effects when considering the modified export cable construction together with the BOWL TI and SHE-T reinforcement. These would disrupt access to the beaches, the near shore and coastal paths. Together this would impact on the tourism experience. Although there is scope for slightly more disruption if the projects proceeded together, they would still be short term and the number of tourists affected would be small in the context of tourism in the study area.
- 5.5.3.8 The onshore substations for the modified TI will be approximately 30 miles from the substation at Blackhillock where the BOWL cable and SHE-T reinforcement meet and there will be no significant cumulative effect for the modified MORL TI. As a result, the cumulative significance on tourism remains **minor** during construction and **negligible** once in operation
- 5.5.3.9 For recreation, the wind farms are considered to be too distant to have any impact on recreation on the south side of the Moray Firth and so will have no cumulative impact associated with the modified TI. However, there may be some cumulative effects when considering the export cable construction together with the BOWL TI and SHE-T reinforcement, which would either exacerbate or extend the periods of disruption.
- 5.5.3.10 This would exacerbate disruption in access to the beaches, near shore and coastal path, affecting the use of the beaches for surfing, sea kayaking and for walking. For a short period of time the cumulative effect would be to further limit the options for recreation for residents and visitors. It is arguable whether the work on the three cables (MORL modified TI, BOWL TI and SHE-T) would be better taking place simultaneously, or separately.
- 5.5.3.11 Together there is scope for more disruption if the projects proceeded together, however, this would still be short term and the number of tourists affected would be small in the context of tourism in the study area. As a result the cumulative significance on recreation remains **minor** during construction and **negligible** once in operation.
- 5.5.3.12 Table 5.5.17 sets out the key projects and the cumulative impacts.

Table 5.5-17 Cumulative Impact Summary

Effect/Receptor	Residual Significance Level for Modified TI	Whole Project Assessment: Modified TI + Stevenson, Telford and MacColl Wind Farms	Mitigation Method
<i>Construction</i>			
Employment	Major (+)	Major (+)	None
Total Cumulative Impact Assessment <i>(Whole Project plus those developments listed in Section 5.5.3.13)</i>	Effect remains major positive as development generates new employment. Capacity constraints from cumulative effects are unlikely to significantly change level of use of anticipated Scottish supply.		
GVA	Major (+)	Major (+)	None
Total Cumulative Impact Assessment <i>(Whole Project plus those developments listed in Section 5.5.3.13)</i>	Effect remains major positive as development generates new GVA. Capacity constraints from cumulative effects are unlikely to significantly change level of use of anticipated Scottish supply.		
Leisure Tourism	Minor	Minor	None
Total Cumulative Impact Assessment <i>(Whole Project plus those developments listed in Section 5.5.3.13)</i>	Cumulatively with the construction of the BOWL export cable route there could be slightly greater limitations, temporarily, on access to the coast. And this could cause additional disruption for tourists. However, this would not be sufficient to change the assessment of significance.		
Business Tourism	Negligible	Negligible	None
Total Cumulative Impact Assessment <i>(Whole Project plus those developments listed in Section 5.5.3.13)</i>	Considered together with the other projects, the modified TI will not contribute to any changes in business tourism or availability of services e.g. accommodation.		
Walking	Minor	Minor	None
Total Cumulative Impact Assessment <i>(Whole Project plus those developments listed in Section 5.5.3.13)</i>	The BOWL TI is situated 15 miles further west (onshore distance) and together with the MORL modified TI may cause additional temporary disruption on the coastal paths, but the significance will remain minor.		
Surfing, Sea Kayaking	Negligible	Negligible	None
Total Cumulative Impact Assessment <i>(Whole Project plus those developments listed in Section 5.5.3.13)</i>	<i>The cumulative effects would be most likely if the BOWL TI was developed at the same time. This could reduce options for sea-based recreation slightly, but the temporary nature of both projects and the relatively low number affected indicates that the significance would remain negligible.</i>		
<i>Operation</i>			
Employment	Minor (+)	Minor (+)	None
Total Cumulative Impact Assessment <i>(Whole Project plus those developments listed in Section 5.5.3.13)</i>	During operation there will be no supply chain issues as a result of considering the projects cumulatively and the significance remains minor positive.		
GVA	Minor (+)	Minor (+)	None

Effect/Receptor	Residual Significance Level for Modified TI	Whole Project Assessment: Modified TI + Stevenson, Telford and MacColl Wind Farms	Mitigation Method
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	During operation there will be no supply chain issues as a result of considering the projects cumulatively and the significance remains minor positive.		
Leisure tourism	<i>Negligible</i>	<i>Negligible</i>	None
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	Once operating the only potential impact would be through the presence of the substations. There are no additional cumulative effects.		
Business tourism	<i>Negligible</i>	<i>Negligible</i>	None
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	Effects are negligible and will not impact on supply of tourism facilities such as accommodation.		
Walking	<i>Minor</i>	<i>Minor</i>	None
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	Once operating there are no additional cumulative effects.		
Surfing, Sea Kayaking	<i>Negligible</i>	<i>Negligible</i>	None
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	Once operating there are no additional cumulative effects.		
<i>Decommissioning</i>			
Employment	<i>Minor (+)</i>	<i>Minor (+)</i>	None
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	Significance remains minor positive. Capacity constraints from the cumulative effects are unlikely to significantly change level of use of Scottish suppliers.		
GVA	<i>Minor (+)</i>	<i>Minor (+)</i>	None
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	Effect remains minor positive as decommissioning generates new GVA. Capacity constraints from cumulative effects are unlikely to significantly change level of use of Scottish suppliers.		
Leisure tourism	<i>Negligible</i>	<i>Negligible</i>	None

Effect/Receptor	Residual Significance Level for Modified TI	Whole Project Assessment: Modified TI + Stevenson, Telford and MacColl Wind Farms	Mitigation Method
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	Cumulatively with the decommissioning of the BOWL export cable route there could be slightly greater limitations, temporarily, on access to the coast. And this could cause additional disruption for tourists. However, this would not be sufficient to change the assessment of significance.		
Business tourism	<i>Negligible</i>	<i>Negligible</i>	None
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	Considered together with the other projects, the modified TI will not contribute to any changes in business tourism or availability of services e.g. accommodation.		
Walking	<i>Minor</i>	<i>Minor</i>	None
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	The BOWL TI is situated 15 miles further west (onshore distance) and together with the MORL modified TI may cause additional temporary disruption on the coastal paths during decommissioning, but significance remains negligible.		
Surfing, Sea Kayaking	<i>Negligible</i>	<i>Negligible</i>	None
<i>Total Cumulative Impact Assessment (Whole Project plus those developments listed in Section 5.5.3.13)</i>	The cumulative effects would be most likely with the BOWL TI if both were decommissioned together. This would reduce options for sea-based recreation slightly, but the temporary nature of both projects and the relatively low number affected indicates that the significance would remain negligible.		

Assessment of Cumulative Effects

5.5.3.13 The developments and activities considered in detail within this assessment are listed below.

- MORL three consented wind farms;
- MORL WDA;
- BOWL wind farm;
- BOWL TI; and
- SHE – T reinforcement (cable from Caithness to Blackhillock, coming onshore at Portgordon).

Methodology

5.5.3.14 The assessment methodology considers the same core receptors as the main assessment. Each of these has been assessed cumulatively with the projects set out above. The receptors identified for consideration in this cumulative assessment are:

- Employment;
- GVA;
- Tourism; and
- Recreation.

- 5.5.3.15 For the first two of these receptors, employment and GVA, the potential cumulative impacts relate to supply constraints from local businesses if the projects proceed simultaneously. This could limit the ability of local businesses to meet demand and lead to less local content than anticipated in the modified TI assessment. The assessment must consider the amount and type of local content anticipated by these projects to determine if this could reduce the positive effects for the local economy.
- 5.5.3.16 For tourism the cumulative effects include the consented MORL and BOWL wind farms and the MORL WDA. However, given the distance between the wind farm sites and visible TI aspects there are no additional or exacerbated visual effects likely to impact on tourism. The assessment therefore considers the cumulative effect of the three cable routes (MORL modified TI, BOWL TI and SHE-T) and onshore substations on tourism and recreation.

Other Developments

- 5.5.3.17 We also note that for employment and GVA the potential constraints on supply from Scottish suppliers would not just come from offshore wind projects, but also from oil and gas activity as well as other major infrastructure projects in Scotland.

Cumulative Assessment

Employment

- 5.5.3.18 The Base Case for the modified TI assumes that employment is generated through expenditure on local supply of the services and components. In practice the elements that involve most local content are the supply and construction of the substations and some of the export cable installation. If this took place at the same time as the other projects it could reduce the capacity of these suppliers to meet demand. However, the scale of the modified TI work is specialised and is less likely to interact with construction of the wind farms.
- 5.5.3.19 Scope for supply constraints would be more likely to occur in relation to the other cable projects (BOWL TI and SHE-T). Even then, the scale of the work to be delivered by Scottish suppliers is relatively modest under the Base Case and this would reduce the scope for supply constraints. While it may have a small negative effect when considered cumulatively it is concluded that the significance remains **major positive** during construction and **minor positive** during operation. The cumulative effect of decommissioning is likely to follow a similar pattern to construction. The positive employment effect could be reduced if there were supply constraints which further reduced the local and Scottish content of the work. This is not likely to be sufficient to change the level of significance which remains **minor positive**.

GVA

- 5.5.3.20 Like employment, the Base Case for the modified TI assumes that GVA is generated through expenditure on the local supply of the services and components. In practice the elements which involve most local content are the supply and construction of the substations and part of the export cable installation. The main scope for supply constraints would occur in relation to the other cable projects (BOWL TI and SHE-T). Even then, the scale of the work to be delivered by Scottish suppliers is relatively modest under the Base Case which would reduce the likelihood of supply constraints. While it may have some small negative effect when considered cumulatively it is concluded that the significance remains **major positive** during construction and **minor positive** during operation. The cumulative effect of decommissioning is likely to follow a similar pattern to employment. The positive effect could be reduced if there were supply constraints which reduced the local and Scottish content of the work. This is not likely to be sufficient to change the level of significance which remains **minor positive**.

Tourism

- 5.5.3.21 For tourism, the cumulative effects include the consented MORL and BOWL wind farms and the MORL WDA. Given the distance between the three consented wind farm sites and visible TI aspects there are no additional or exacerbated visual effects likely to impact on tourism.
- 5.5.3.22 Cumulative effects could result from more severe access limits to the coast and beaches if both BOWL and SHE-T cable routes are constructed at the same time as the MORL modified TI. In this case the cumulative effect could detract from the tourist experience. It is arguable whether it would be better or worse for the projects to take place simultaneously or in series, over a longer period of time. Although the cumulative disruptive effect of constructing three cable routes together would be greater than constructing one, it may be less than would be caused by three, one after the other.
- 5.5.3.23 Inland, the BOWL export cable will come ashore at PortGordon, 16 miles west of Inverboyndie. It continues onshore 20 km to Blackhillock, near Keith. This is a sufficient distance to mean that the construction of the BOWL export cable route is unlikely to add to the cumulative impact of modified TI in this assessment, even if construction was undertaken at the same time. The SHE-T cable also comes onshore at Portgordon and crosses the modified MORL TI offshore. The onshore substations for the modified TI will be approximately 30 miles from the substation at Blackhillock and there will be no significant visual cumulative effect.
- 5.5.3.24 Whether the cable constructions happen simultaneously (in which case there would be a shorter period of greater disruption), or separately, the construction work will be short term and the effects felt by a relatively small number of tourists relative to tourism in the study area as a whole. Consideration of cumulative effects therefore does not change the original conclusion that the effect would be of **minor** significance for leisure tourism and **negligible** for business tourism during construction and **negligible** for both during operation
- 5.5.3.25 Cumulatively decommissioning will cause similar effects to construction, and similar arguments apply. This may for a short period exacerbate the disruption if undertaken at the same time as the decommissioning work for the other considered projects, but it is arguable whether this is better or worse than decommissioning separately. The conclusion therefore remains that significance for decommissioning is **negligible** for both leisure and business tourism.

Recreation

- 5.5.3.26 For recreation, the three consented wind farms are considered to be too far away to have any impact on recreation (walking, surfing and sea-kayaking) on the south side of the Moray Firth and so there is no additional cumulative impact associated with the modified TI. However, there may be some cumulative effect when considering the export cable laying activities together with the BOWL TI and SHE-T reinforcement, which would extent the periods of disruption.
- 5.5.3.27 For walking, with the construction of the BOWL TI to the west and the SHE-T reinforcement there may be some additional temporary disruption on the coastal paths, but significance remains **minor** given it is short term and will effect relatively few people. During operation the main issue effect on walking remains **minor**.

5.5.3.28 It could also reduce options for sea-based recreation, surfing and sea-kayaking (if access to two areas was restricted at once) but the temporary nature of both projects and the relatively low number affected indicates that the significance would remain **negligible** during construction and operation. During decommissioning the main potential cumulative effect is through any increase in disruption and access. As for tourism, the cumulative effect would be as a result of extended periods of disruption but given the relatively short time periods this is not considered to change the conclusions which remain **minor** for walking and **negligible** for surfing and sea-kayaking.

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