



Chapter 21: Local Community and Economy



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21 Local Community and Economy

21.1 Introduction

This chapter describes the baseline of the socioeconomic conditions, identifies potential impacts, and assesses the significance of effects which may arise from the construction, and operation of the NorthConnect HVDC Cable Infrastructure. Where required, mitigation measures to avoid, reduce or offset potential adverse effects or further enhance potential beneficial effects are identified.

It is noted that the decommissioning phase was scoped out of the assessment, in agreement with Marine Scotland, as detailed in Chapter 3: Methodology.

21.2 Sources of Information

This assessment has been undertaken based on standard EIA guidance and practices. The primary resources for the data within this chapter are the Scottish Neighbourhood Statistics (Scottish Government, 2018) and National Records of Scotland Scottish Government' (Scottish Government, 2018) websites, along with Aberdeenshire Council population statistics (Aberdeenshire Council, 2016a) and Marine Management Organisation fishery statistics.

Relevant policy and guidance includes:

- GEN 2 Economic benefits: Sustainable development and use which provides economic benefit to Scottish communities is encouraged when consistent with the objectives and policies of this Plan;
- GEN 3 Social benefits: Sustainable development and use which provides social benefits is encouraged when consistent with the objectives and policies of this (Scottish Government, 2015);
- Aberdeenshire Economic Development Strategy (Aberdeenshire Council, 2012); and
- Aberdeenshire Local Development Plan Supplementary Guidance 3 – Energetica (Aberdeenshire Council, 2017).

21.3 Regulatory Framework

The regulatory framework relevant to access which has informed this document is The Land Reform (Scotland) Act 2016 (as amended), and associated Scottish Outdoor Access Code, which provides a practical guide to access users.

21.4 Assessment Methodology

21.4.1 Valuation of Receptor

Standard EIA methodology has been applied in terms of assessing the value of receptors, the magnitude of any potential impact and the resulting significance of effect. Terminology and approach has followed the process as set out within Chapter 3: Methodology. Table 21.1 shows the criteria applied within this chapter to determine the value of receptors.

Table 21.1 Definitions of the receptor values.

Value	Definition
International	International effects.
National	Effects on Scotland or Great Britain (GB)
Regional	Effects on the Aberdeenshire region.
High Local	Effects on the Buchan area.
Moderate Local	Effects on neighbouring villages e.g. Boddam, Longhaven.
Low Local	Effects in the immediate vicinity and on rural residences.

21.4.2 Magnitude of Impact

Table 21. provides definitions with regard to the magnitude of impacts for socioeconomic receptors. Note those associated with employment, marked with an asterisk(*), will be taken to be the effect level and hence Tables 21.1 and 21.3 do not apply to them.

Table 21.2 Definition of the magnitude of impacts used in the assessment

Magnitude of Impact	Definition
High	A permanent or long-term measurable effect on the economy. A short-term large effect on the economy. Permanent substantial increase/decrease in recreational facilities. Permanent large effect on the community. *A permanent increase/decrease in employment by ≥ 20 Full Time (FTE). *A short term increase/decrease in employment by ≥ 150 FTE.
Medium	A permanent or long-term effect on the economy. A short-term moderate effect on the economy. Permanent increase/decrease in recreational facilities. Permanent effect on the community. Short term large effect on the community. *A permanent increase/decrease in employment by > 5 FTE. *A short-term increase/decrease in employment by ≥ 50 FTE.
Low	A short term low effect on the economy. Short-term increase/decrease in recreational facilities. Short-term effect on the community. *A permanent increase/decrease in employment by 1-5 FTE. *A short-term increase/decrease in employment by ≥ 5 FTE.
Negligible	A short-term but reversible effect on socioeconomics, that is within standard levels of variation.

21.4.3 Assessment of Effects

The value of receptor and magnitude of impact are combined to determine the significance of the effect using a matrix, as shown in Table 21.2.

Table 21.2 Matrix used to determine significance of effects

Magnitude of Impact	Value				
	International	National	Regional	Moderate Local/ High Local	Low Local
High	Major	Major	Moderate	Moderate	Minor/ Negligible
Medium	Major	Moderate	Moderate	Minor	Minor / Negligible
Low	Moderate	Minor	Minor	Minor	Minor / Negligible
Negligible	Minor	Negligible	Negligible	Negligible	Negligible

Key

	Significant Effect
	Non-Significant Effect

In order to assess the significance of the potential effects derived from the proposed development, professional judgement has been applied. Effects considered to be moderate and major must be regarded as significant and, therefore, further attention and specific mitigation measures are to be applied to ensure appropriate minimisation of the significance.

21.5 Baseline Information

21.5.1 Socio-Economics

The population of Aberdeenshire in 2017 was 261,800, an increase of 2% from 2013, which represents 4.8% of the Scottish population when compared to the 2017 Mid-Year Population Estimates for Scotland (National Statistics, 2018). It is projected that by 2037 the population will be 299,000, an increase of 12.3% (National Statistics, 2018). The median age for Aberdeenshire is 42, although a higher proportion of people aged 0-17 and 36-68 live in Aberdeenshire. Aberdeenshire holds a significantly lower population aged 18-35 compared to the Scottish average (Aberdeenshire Council, 2016a).

The employment levels in Scotland in 2017 were 74.3%, while in Aberdeenshire they were 78.6%, the fourth highest rate in the country (Scottish Government, 2017). When analysed by gender, Aberdeenshire has the highest male employment rate at 82.3% (the overall level for Scotland is 74.3%), whereas the area was not in the top three for female employment rates, with a level of 72.3%, but still higher than the Scottish average of 66.5%. By the end of 2017, the unemployment rate in Buchan was 0.9%, compared to a Scottish rate of 2.8% (Aberdeenshire Council, 2016a).

Table 21.3 21.4 provides an overview of the basic socioeconomic baseline for the Aberdeenshire Local Authority (Aberdeenshire Council, 2016a).

Table 21.3: Statistical Overview of the Aberdeenshire Area Demography in 2013

Socioeconomic parameter	Value	
	Aberdeenshire*	Scotland
Total population	257,740	5,327,700
Percentage of population between 0-15 year of age	18.7%	17.1%
Percentage of population between 16-59 year of age	57.7%	59.1%
Percentage of population between 60-+75 year of age	23.6%	23.8%

*not including Aberdeen City

The settlement of Boddam is the closest to the proposed development. Its population by 2016 was 1,270 people. Peterhead is the nearest major town with a population of 19,270 (Aberdeenshire Council, 2016b). Peterhead relies heavily on fishing and the oil and gas sector for local employment, while the harbour facilities are also now starting to provide support to the rapidly expanding renewable energy industry. Peterhead has been identified as a potential location for development to support renewables within Scotland, building on its experience in supporting the oil and gas industry of the North Sea.

As discussed in Chapter 2: Project Description, Section 2.3: Needs Case, the Scottish Government has set a challenging target to reduce carbon emissions. To facilitate the increase in renewables into the energy mix to meet the targets, it is anticipated that a total investment of £46 billion is required in both electricity generation and the transmission network (Scottish Government, 2011).

In 2016, UK vessels landed 701 thousand tonnes of sea fish (including shellfish) into the UK and abroad with a value of £936 million. This represents a 1 per cent decrease in quantity, but a 21 per cent increase in value, compared with 2015. Landings by Scottish vessels were well over 400 thousand tonnes in each of the last three years, a result of increased mackerel landings. In 2016, the Scottish fleet's share of total landings was 65 per cent, compared with 29 per cent for the English fleet. Peterhead remained the port with the highest landings – 145.4 thousand tonnes with a value of £157.6 million (Marine Management Organisation, 2017).

The largest education facility in the region (and in Scotland, in terms of area, at 22,920m²) is the Peterhead Academy, run by Aberdeenshire Council, and catering for around 1,400 students from 11 to 18 years of age (Personal Communications, 2018).

Longhaven is the closest residential community to the HVDC cable corridor, approximately 16km south of Peterhead with no more than 10 residential properties and a local shop. The residential community previously sustained a school (Longhaven School) which is currently closed.

At a local level, Boddam is one of the larger communities close to the HVDC cable corridor, and is just under 5km south of Peterhead. As with Peterhead, Boddam grew during the 18th century due to the local fishing industry, however, in the 1800s, the local fleet outgrew the harbour and many vessels moved to use the expanding Peterhead harbour instead. Quarrying was also an important local industry, with 'Peterhead granite' being exported both around the UK and overseas. The town was also the location of a former RAF base, and a railway branch, both now closed, although the RAF Buchan Ness radar station still maintains a small operations staff of around 30 people made up of military and civilian personnel.

In the present day, Boddam is a commuter settlement for workers in Aberdeen or Peterhead, with some inshore fishing still based here, primarily fishing for crab, lobster and mackerel.

21.5.2 Recreation

21.5.2.1 Paths

The rights of way within the vicinity of the onshore HVDC cable corridor are shown in Figure 21.1. As shown, there is a right of way immediately to the west of Fourfields and part of the cable corridor; this route has been in use since the 17th Century.

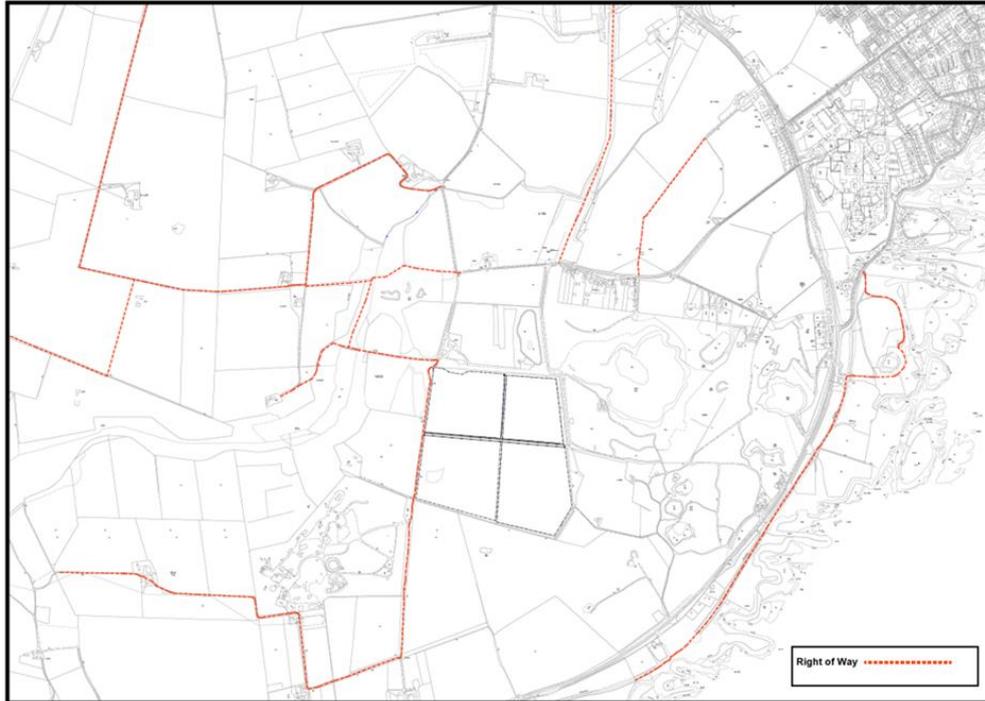


Figure 21.1 Rights of Way in the Vicinity of the HVDC

In addition to the rights of way, there are core paths around the east, west and south sides of the Fourfields site and along the cliff top at Long Haven Bay, as shown in Figure 21.2.



Figure 21.2 Core Paths (after Aberdeenshire Council, 2014)

The Boddam & District Community Association completed construction of an additional path in 2012, bisecting the Fourfields site west to east (as shown in green on Figure 21.2). The area around Fourfields is utilised for recreational purposes, primarily walking/jogging and exercising dogs. The NorthConnect Converter Station plans include the realignment of the path which bisects Fourfields around the converter station, and the addition of new paths in the north east field as shown in Drawing 3022. The new paths will not be available until the Converter Station construction is suitably advanced.

The coastal path in this area is part of the network of Core Paths in Aberdeenshire and links Whinnyfold just south of Cruden Bay with Boddam, Peterhead and further north to Rattray Head. The terrain is rough coast path, muddy in places with unprotected cliff edges. The section at Long Haven Bay runs through the Long Haven Scottish Wildlife Trust reserve. The Trust provides parking for a small number of cars at Longhaven on the A90, which gives easy access to the coastal path.

21.5.2.2 Tourism

The nearest hotels and Bed & Breakfasts are in Boddam, however, the area is not known as a tourist destination. Most visitors to the area are there for business purposes.

21.5.2.3 Climbing Crag

There are a number of climbing crags along this section of the North East coast, with one particularly close (c.120m) to the landing point at Long Haven Bay, called Hare Craig. It is a concave off-vertical wall of granite, bird free and south east facing, which are positives from a climber's perspective. The deep pool at the base may make it less attractive to novice climbers. The records accessible from www.ukclimbing.com do not show any recently logged ascents at this site (UK Climbing, 2018).

21.5.2.4 Sub-aqua diving

Aberdeen Divers, a small collective of recreational cold-water divers based on the north east coast use Boddam harbour as a base for diving in this area, as well as the Den Dam inland near the Fourfields site. However, they do not tend to venture as far south as the Long Haven Bay area and usually concentrate dives around the Buchan Ness lighthouse at Boddam, although a small number dive on a wreck to the north of Long Haven Bay directly from boats (Personal Communications, 2018). This recreational activity is therefore not considered further.

21.5.2.5 Recreational vessels

This activity is assessed within Chapter 19: Navigation and Shipping, Section: 19.4.6 Recreational Activity. Density of recreational vessels was found to be highest in coastal waters off Peterhead, with fewer crossings of the cable corridor farther offshore. The consenting corridor is outside of indicative areas of general recreational boating identified by the RYA, which mainly relate to club training and racing areas. Peterhead harbour offers excellent shelter for recreational vessels in all weather. It is also home to a sailing club (Peterhead Sailing Club), a Sea Cadet Unit and three RYA training centres.

21.5.3 Local Residencies

The small settlement of Longhaven lies just to the south of the cable route, spread for a short distance along the A90 trunk road. The village of Boddam lies approximately 1km to the northeast of the northerly section of the HVDC cable corridor. There are a number of rural properties closer to the HVDC cable corridor: Longhaven Mains (125m from nearest corridor point); Station House (270m from nearest corridor point); Ivy Cottage (345m from nearest corridor point); and Four Winds Croft (390m

from nearest corridor point). Highfield is located to the north of the cable corridor, immediately adjacent to the Fourfields site.

21.6 Impact Assessment

21.6.1 Construction

21.6.1.1 Direct Employment

During preparation and installation of the onshore HVDC cable route there will be the potential for a range of jobs to be created. It is NorthConnect’s intention to encourage and support the local workforce to tender for work packages where possible and in compliance with procurement law. However, given the technical and specialist nature of some elements of the work and the high employment levels in the area, some imported labour may be required.

The estimated value of the whole project is c. £1.5billion and while a significant proportion of that value cannot be allocated in the UK (because it takes place in Norway or offshore, or due to manufacturing / supply capability of specialist equipment) a large amount of value could be added to Scotland and directly to Aberdeenshire. For example, the full UK enabling works package value is c. £40m. All of the activities required under this package are available through the supply chain in the UK and many are local to the area, having been directly involved in current major infrastructure projects such as the AWPR near Aberdeen. Even with the main converter station contract involving specialist supply of the large electrical components from outside of the UK, many of the lower tiers of that supply chain will involve services, materials and equipment associated with the buildings construction, building services and small electrical power which will provide opportunities for local supply.

An estimation of the potential number of workers required for both onshore and marine HVDC cable installation is provided in One-year FTE are calculated, based on workforce numbers and duration of works.

Table 21.4. This is in addition to the previously estimated 40-200 people for the previously consented Converter Station and HVAC cable route (NorthConnect Converter Station and HVAC Cable ES, Chapter 17). This will be direct labour employed by the main contractors and their 1st, 2nd or lower tier sub-contractors for the construction works. One-year FTE are calculated, based on workforce numbers and duration of works.

Table 21.4 Estimates of the Number of Workers Required

Construction task.	Estimated number of workforce required	FTE	Duration
Enabling works	8-15 people	3.75	3 months
HDD operation	10-20 people	8.33	5 months
HVDC onshore cabling	1. 25 – 30 people 2. 20 people	2.5 3.33	1. pull-in operation - 1 month 2. preparation of trenches 2 months
Guard vessels for marine HVDC cable installation	Up to 16 guard vessels required, assumes a 4-5 person crew.	40-80	Up to 12 months
Marine cable installation	100-200 UK marine & cable vessel crews. In addition, Route	300	Up to 18 months

	Clearance, Survey Work, MMO's, etc. required		
Total		398	

In addition to the construction work force, during the proposed construction period for onshore and offshore cable routes, there will be a requirement for non-construction personnel, for example security guards and administrative staff.

The magnitude of impact associated with construction jobs relating to this element of the project will be **high**, so the resulting beneficial effect is assessed as **major: significant**.

21.6.1.2 Indirect Employment

As well as those individuals and businesses directly employed by NorthConnect during the phases of the interconnector's development, there is also the potential for indirect benefits for local businesses. Due to the nature of the works involved in the laying of the HVDC cables, there may be the need for specialist teams to be brought into the area. Furthermore, there will be the need for members of the project management team to be present during specific periods to oversee particular activities.

These individuals will require accommodation, food and drink and other services, therefore local hotels, restaurants and entertainment venues are likely to benefit from the influx of people and additional revenue generated. As indicated in Section 21.5.2.2, levels of tourism to Boddam are relatively low, therefore these additional visitors may prove beneficial, specifically to local businesses in the area.

It is also possible that the vessels required in the cable laying process will use Peterhead Port to mobilise/demobilise, and berth when not required at sea. Again, this would have an indirect benefit for the local economy through the payment of port, berthing, bunkering and pilotage fees.

Some raw materials associated with the construction process will be sourced locally to avoid transport expenses. This is likely to include construction materials such as concrete. In addition, consumable items are likely to be procured locally.

The impact magnitude of indirect construction impacts is **low** within the Buchan, so the resulting impact is assessed as **minor/negligible: non-significant**.

21.6.1.3 Local Residents

Impacts on local residents during construction have been assessed in topic specific chapters. Chapter 6: Noise and Vibration have identified potential significant effects on a small number of local receptors during the period of construction. The impacts are not reassessed here, however, it is recognised that this element of the project as a whole could have a short-term negligible effect on amenity for a small number of local residents, giving rise to a **low** magnitude effect on a **moderate local** value receptor. The resulting impact assessed as **minor: non-significant**.

21.6.1.4 Navigation and Shipping, and Commercial Fisheries

Whilst there is the potential risk of disruption to fishing activities as well as to shipping and navigation as assessed in Chapters 19: Shipping and Navigation, and 20: Commercial Fisheries, no significant residual effects were identified. As such, with regard to the socioeconomic impacts, the effect magnitude is **low**, on a receptor of **national** value, giving rise to a **minor: non-significant** impact.

21.6.1.5 Recreation

NorthConnect and the construction contractor will ensure that during all phases of the Proposed Development, the requirements of both the Land Reform Act (Scotland) 2016 (as amended) and the Scottish Outdoor Access Code are met in full.

The HVDC cable is buried or ducted along the entire length of the route from the Converter Station to the exit point, some 200m offshore. Work to bury the cable at Long Haven Bay will take place away from the Coastal Path and so will cause minimal disruption to the coastal footpath users and potential climbers. As with local residents, impacts will relate to noise and sense of place, giving rise to a **low** magnitude of impact, on a receptor of **high local** value, so the resulting impact is assessed as **minor: non-significant**.

Work to install ducting at the entry to the Fourfields site will see one section of the core path closed temporarily with diversions in place via the bisecting path. Appropriate notification will be put in place to advise users of this activity. Subsequently, this portion of the path will have vehicular access controlled via a gate system, manned when required. The amenity value of the core paths will be reduced temporarily during the construction phase, which will give rise to a **low** magnitude of impact, on a **moderate local** value receptor, resulting in a **minor: non-significant** impact.

Offshore, recreational sailors may be required to re-route their journeys, however only by a small degree, and therefore the potential impacts are considered to be **low** magnitude on a receptor of **regional** value, resulting in a **minor: non-significant effect**.

21.6.2 Operation

21.6.2.1 Energy Market

The qualitative discussion of the benefits from NorthConnect and interconnector has been described in Chapter 2: Project Description, Section 2.3 Needs Case. One of the quantified benefits, CO₂ reduction, has also been covered in Chapter 12: Air Quality.

As energy is not a devolved policy and Regulation is applied at a GB level, most of the economic analyses referred to in this section are carried out from a GB-wide perspective, and therefore describe socio-economic impacts on the UK as a whole, including Scotland. Some exceptions to this interpretation occur when describing grid impacts, where there are features highlighted which specifically affect Scotland.

The NorthConnect project has been named on the first, second and now third European Union wide lists of Projects of Common Interest, meaning that it has been identified as one of the projects crucial to achieving the goals of Europe's 'Energy Union' initiative [Regulation (EC) No.714/2009 and amending Regulation (EU) No.347/2013]. Furthermore, in 2017 it was chosen as part of a smaller subset of the PCI projects for E-Highways 2050 status, essentially seen as a vital part of long-term plans for a European 'SuperGrid'.

In a UK context, the project has received a positive decision from the UK Regulator Ofgem on the Initial Project Assessment (IPA) stage of its suitability for 'Cap & Floor' regulation of GB interconnectors. As a result of that decision, NorthConnect KS have been granted an Operating Licence by Ofgem under the UK Electricity Act, 1989. It is noted that the Licence Conditions are still to be modified or determined by later stages of the Cap & Floor approval process, at contract close and construction completion.

The need for interconnectors is also clearly established within Scotland’s national policy, falling within the category of “national development” in terms of the National Planning Framework 3. The Scottish Energy strategy published in Dec-17 referred to the project directly stating:

“....the NorthConnect cable [that] would enable renewable electricity to be traded directly between Scotland and Norway. Ofgem’s initial assessment of this project has concluded that it is likely to benefit consumers, and that it could also improve our security of supply by providing access to a vast alternative source of renewable generation when required” (Scottish Ministers, 2014).

In addition, the project will provide opportunity for jobs, supply chain and economic benefits to Scotland from the construction and operation of the asset itself, as well as similar secondary economic benefits from interconnection with Norway, facilitating the development of further cost-effective renewable generation in Scotland. To support this, the supply chain opportunities initiatives described above are currently being commenced in Scotland, alongside the project’s procurement processes.

Many studies have been carried out with regard to the socio-economic benefit of interconnection, and the most pertinent are referenced here. As they are based on economic models looking into the future, they all differ slightly in their methodologies and assumptions, and often quote their findings in ranges of values, or across a spread of different stated scenarios.

The Project will provide a link between the electricity grids of Scotland and Norway, connecting two countries with high volumes of renewables; wind and hydro respectively, and will support the achievement of Scottish, Scandinavian and European renewable energy targets.

The socio-economic benefits of interconnection between countries derive from connecting areas of surplus generating capacity with areas of high demand (or storage capacity) at every point in time. These differences fluctuate between regions on an hourly, daily, weekly, or seasonal basis dependent upon many variables on both the supply side and the demand side. A greater proportion of renewables and the switch to low carbon over the coming decades will increase those fluctuations on the supply side (e.g. wind, wave, solar, hydro and biomass), since renewable generation tends to be heavily weather dependent. The increase fluctuations are also influenced on the demand side through changing our energy-consuming behaviours (e.g. carbon tariffs, energy efficiency, the switch to electric vehicles and micro-generation such as home solar or ground source heat pumps).

Interconnection helps to ensure that across Europe, despite those fluctuations in supply and demand (and hence price), any one consumer can be connected to the most cost-effective source of power at any one time, and this is where much of the economic benefit of interconnection derives from through the following mechanisms:

- At times of high renewable generation in GB, when GB power prices are relatively low, NorthConnect will export electricity towards Norway, thus enabling GB generators to earn higher revenues;
- Conversely, at times of low renewable generation in GB, NorthConnect will facilitate a benefit from the storage capacity present in the Norwegian power system by importing hydro power to GB; and
- Both of these mechanisms benefit GB consumers by reducing the average wholesale electricity price and by stabilizing the price pattern.

NorthConnect will also bring additional security of supply benefit in being able help stabilise the grid in Scotland and also by helping to relieve grid constraints (which result in very high costs to consumers) at the border between Scotland and England. The fast reacting Voltage Sourced Converter (VSC) modern design, coupled with Pelton Wheel hydro plants in the Norwegian system enables the interconnector to be used in such a way to support the Scottish grid for system frequency and voltage control, as well as reactive power and inertia services. It can also be used to re-start the grid in Scotland in a very short space of time following a ‘Black-Out’ scenario.

The Department of Energy & Climate Change (now Business, Energy & Industrial Strategy) in their report on the economics of interconnectors (Redpoint-Baringa, 2013), quantified the saving from all UK interconnection at between £800 million and £1.3 billion per annum.

In January this year, the NorthConnect project received the Cap & Floor IPA decision from the UK Regulator Ofgem. Ofgem assessed the needs case for the project on behalf of GB electricity consumers and concluded NorthConnect had a socio-economic net present benefit over 25 years in the region of £2-3 billion in the base case scenario, with positive consumer benefit in all scenarios. A further study by National Grid, since the IPA using improved models of the Norway-Scotland system interactions specifically, revealed a possible further £1bn+ of grid savings* in the base scenario, driven by the relief of Scottish constraints costs by having NorthConnect in place. The grid savings remain positive in all scenarios over the 25-year assessment, even with the assumption of the East Coast HVDC (sometimes referred to as the Eastern Link “Bootstrap”) construction between Scotland and England by 2028. This demonstrates the value of the 3-way flexibility for grid balancing between Scotland, England and Norway with NorthConnect in place.

*[*Note: Grid savings values derived from constraints relief only. The ancillary services such as Black Start and grid stability services provided by NorthConnect will also have a positive socio-economic benefit through being able to deliver these cost-effectively to the Scottish Market at zero to negligible marginal cost (i.e. the modern design of the interconnector can inherently deliver these services with the costs already accounted for in the base case cost-benefit figures above)]*

NorthConnect will therefore have a beneficial socio-economic case in Norway and a positive impact on the Norwegian grid.

The Norwegian central grid is divided into several price areas which differ widely. In some areas there are few or no foreign connections, in others there are many. For example, in southern Norway, there are currently five interconnector cables, and there are also two under construction. NorthConnect will be associated with an area in Western Norway where it will be the first international connection. At the same time, this area has the highest power surplus, which is currently not exploited during precipitous periods because there is not enough capacity in the network, in the same way that Scotland is not able to exploit all of its wind power during very windy periods. In reverse, the region also has locked in storage capability which cannot be accessed easily from other areas of the Nordic region. Without NorthConnect, substantial investments would have to be made in network development in Norway in order to transport the power or access storage by other areas of the country which would require investment from the Norwegian consumer. This also holds true for the UK.

NorthConnect would handle this surplus power and storage capability through exchange of power with the UK. Calculations show that NorthConnect will yield NOK14 billion (£140 million) per-annum in socio-economic gains for Norway also.

The socio-economic benefits associated with electricity transmission through the interconnector at a **national** and **international** level are long-term and measurable and hence have a **high** impact value giving rise to a **positive major: significant** effect. It should however be recognised that this is the effect of the whole NorthConnect project and will only be realised if all elements of the project can be developed.

21.6.2.2 Employment

Once the project is operational, there will be minimal routine maintenance carried out on the onshore HVDC Cable, and hence no direct job opportunities expected. The operations and maintenance staff requirements are associated with the Converter Station. Additional, short-term, one-off, or specialist contractual opportunities may also arise for services at the Fourfields site, for example, cleaning, grass-cutting, landscaping, building maintenance, etc. The employment opportunities associated with the converter station were assessed as part of the Environmental Statement accompanying the planning application for that element of the works, and as such will not be reassessed here to avoid double counting (NorthConnect, 2015).

As detailed in the Post Installation Survey Plan (NorthConnect, 2018b) there will be periodic surveys of the cables completed, and potentially maintenance on the marine cables. This will require specialist vessels, equipment and personnel to carry out the operations. The work could be carried out by national or internationally based companies. The survey and maintenance will be carried out in short campaigns; hence, it is estimated that 1 FTE job would be created for the lifetime of the project giving rise to a **low** impact magnitude, and a **negligible: non-significant** effect.

21.6.2.3 Local Residents

Impacts on local residents of operations have been assessed in topic specific chapters and, as such, will not be repeated here. Once the site is operational it is expected that there will be no significant impacts on local residents. As such the potential impacts on local residents during operation are assessed as **no-change**.

21.6.2.1 Navigation and Shipping, and Commercial Fisheries

Whilst there is the potential risk of disruption to fishing activities as well as to shipping and navigation as assessed in Chapters 19: Shipping and Navigation, and 20: Commercial Fisheries, no significant residual effects were identified. As such, with regard to the socioeconomic impacts, the impact magnitude is **low**, on a receptor of **national** value, giving rise to a **minor: non-significant** effect.

21.6.2.2 Recreation

All existing onshore paths/climbing routes will be fully available during operations. Recreational sailing will not be affected by the operational phase.

NorthConnect and the construction contractor will ensure that during all phases of the Proposed Development, the requirements of both the Land Reform Act (Scotland) 2016 (as amended) and the Scottish Outdoor Access Code are met in full.

As such the potential impacts on recreation during operation are assessed as **no-change**.

21.7 Mitigation Measures

21.7.1 Construction

21.7.1.1 Direct and Indirect Employment

NorthConnect will take steps to maximise both direct and indirect socio-economic effects in relation to employment on the local economy. Supply chain plans have been developed to make local content an important and appropriate component of tenderers proposals for contract delivery. They include requirements for the encouragement and timely communication of local sourcing opportunities to the market, in order to maximise the projects benefits to the local economy.

NorthConnect has already initiated engagement with the local supply chain (<http://northconnect.no/northconnect-meet-the-buyer-days>) presenting the potential opportunities available within each of the packages of work as well as overall project requirements. Over 70 delegates attended over two days. Prior to construction works commencing, there will be a programme of further supply chain engagement, including more 'Meet the Buyer' events, to allow local companies to meet with the potential tier 1 and 2 contractors to offer their services.

NorthConnect has worked with economic development agencies and business networks locally during the project planning stage including: Energetica, Scottish Enterprise, Aberdeenshire Council, Aberdeen Renewable Energy Group, and the Aberdeen and Shire Chamber of Commerce. Through this relationship, NorthConnect has initiated a supply-chain communications exercise, with attendance at events (All Energy 2018, AGCC and AREG business networking events) as well as arranging the 'Meet the Buyer' days in Aberdeen and Peterhead noted above. Engagement activity will continue and is designed to gather details of potential suppliers, facilitate networking up and down the supply chain and inform the market of the significant potential opportunities available.

Works will be publicly tendered wherever possible to ensure fair competition and to allow local companies to compete for work.

NorthConnect is also in discussion with Scottish Government and Scottish Renewables about how to maximise the promotion of opportunities to the wider renewables supply chain in Scotland.

21.7.1.2 Local Residents

An onshore construction communications plan will be developed by NorthConnect and the Cable Contractors, to ensure that local residents are kept informed about the project. Contact details will be provided to allow any concerns or queries residents may have to be raised and dealt with in a timely manner.

21.7.1.3 Recreation

The onshore communications plan will include communications with recreational users of the area around the proposed development during construction. This will ensure that prior warning to any changes in path routes etc. is provided, or if there is a need for a short-term closure of any areas for safety reasons. Contact details will be provided on signage around the site to allow recreational users to raise concerns or queries.

NorthConnect have developed a communications strategy relating to marine users has also been developed, this will guide communications with marine stakeholders during construction and

operation of the project. Further detail can be found in the NorthConnect HVDC Cable Infrastructure UK Communications Strategy NCGEN-NCT-X-FA-0001 (NorthConnect, 2018a).

21.8 Residual Effects

The mitigation identified aims to minimise negative effects and maximise positive effects in line with best practice. However, none of the mitigation is sufficient to significantly change the effect significance determined in Section 21.6.

21.9 Cumulative Effects

It should be recognised that the HVDC cable infrastructure which this EIAR focuses on cannot operate without the other project elements including: the Converter Station at Fourfields, the HVAC cable connection to the Peterhead Substation and the Norwegian elements of the project. In addition, the UK connection to the grid is currently via the planned 400kV Substation at Peterhead, which is yet to be constructed. Hence it is acknowledged that the main operational socioeconomic benefits are in effect a cumulative benefit of all the parts, no one element can bring the benefits without the others.

21.10 Summary

During construction there is a potential for short-term direct and indirect positive impacts on the local economy. However, there may be a low level of negative effects on users due to short-term impacts on the local path network and installation of the marine HVDC cables.

Once operational, the NorthConnect Interconnector project will have significant positive Socio-Economic benefits at an international level.

Table 21.6 summarises the socio-economic effects of the project, both before and after mitigation.

Table 21.6 Summary of Effects on Local Community and Economy

Nature of Impact	Receptor Value	Impact Magnitude	Significance of Effect	Mitigation Summary	Residual Impact Magnitude	Residual Significance of Effect
Construction						
Direct Employment	N/A	High Positive	Major: Significant	Procurement Policy Supply Chain Engagement	High Positive	Major: Significant
Indirect Employment	N/A	Low Positive	Minor/Negligible: Non-Significant	Procurement Policy Supply Chain Engagement	Low Positive	Minor/Negligible: Non-Significant
Local Residents	Moderate Local	Low Negative	Minor: Non-Significant	Onshore Communications Plan	Low Negative	Minor: Non-Significant
Navigation and Shipping and Commercial Fisheries	National	Low Negative	Minor: Non-Significant	Marine Communications Plan	Low Negative	Minor: Non-Significant
Recreation – Impacts on Coastal Paths and Climbers	High Local	Low Negative	Minor: Non-Significant	Onshore Communications Plan	Low Negative	Minor: Non-Significant
Recreation – Impacts on Core Paths	Moderate Local	Low Negative	Minor: Non-Significant	Onshore Communications Plan Appropriate Diversions Reinstatement of Paths	Low Negative	Minor: Non-Significant
Recreation – Impacts on Recreational Sailors	Regional	Low Negative	Minor: Non-Significant	Marine Communications Plan	Low Negative	Minor: Non-Significant
Operations						
Energy Market	National/ International	High Positive	Major: Significant	No Specific Mitigation Required	High Positive	Major: Significant
Employment	N/A	Low Positive	Negligible: Non-Significant	Procurement Policy	Low Positive	Negligible: Non-Significant
Local Residents	Moderate Local	None	No-Change	No Specific Mitigation Required	None	No-Change
Navigation and Shipping and Commercial Fisheries	National	Low Negative	Minor: Non-Significant	Marine cable over-trawlable Marine Communications Plan	Low Negative	Minor: Non-Significant
Recreation – Impacts on local Paths.	High Local	None	No-Change	No Specific Mitigation Required	None	No-Change
Recreation – Impacts on Recreational Sailors	Regional	None	No-Change	No Specific Mitigation Required	None	No-Change

Key	Significant
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21.11 References

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