# MachairWind Offshore Windfarm

## Appendix K – Economic and Social Scenarios Opportunities and Impacts

ScottishPower Renewables | MachairWind Offshore Windfarm

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BiGGAR Economics

# MachairWind Development

## Economic and Social Scenarios: Opportunities and Impacts

A report to ScottishPower Renewables
April 2024

Photo by Nicholas Doherty on Unsplash

BiGGAR Economics

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Acronyms:

ABS: Annual Business Survey

CECA: Civil Engineering Contracting Association

CPP: Community Planning Partnership

HIE: Highlands and Islands Enterprise

HNC: Higher National Certificate

MACC: Machrihanish Airbase Community Company

MOWSF: MachairWind Offshore Wind Stimulus Fund

NC: National Certificate

NPF4: National Planning Framework 4

NSA: Nigg Skills Academy

O&M: Operations and Maintenance

OFC: Opportunity Cromarty Firth

ONS: Office for National Statistics

PARC: Hunterston Port and Resource Centre

SE: Scottish Enterprise

SIC: Standard Industrial Classification

SKDT: South Kintyre Development Trust

SPA: Special Protection Area

SPR: ScottishPower Renewables

SSSI: Site of Special Scientific Interest

TIF: Tax Increment Financing

UAV: Unmanned Aerial Vehicle

UHI: University of Highlands and Islands

# 1. Introduction

In 2023, BiGGAR Economics was commissioned to undertake an appraisal of the potential socio-economic impacts of the MachairWind development.

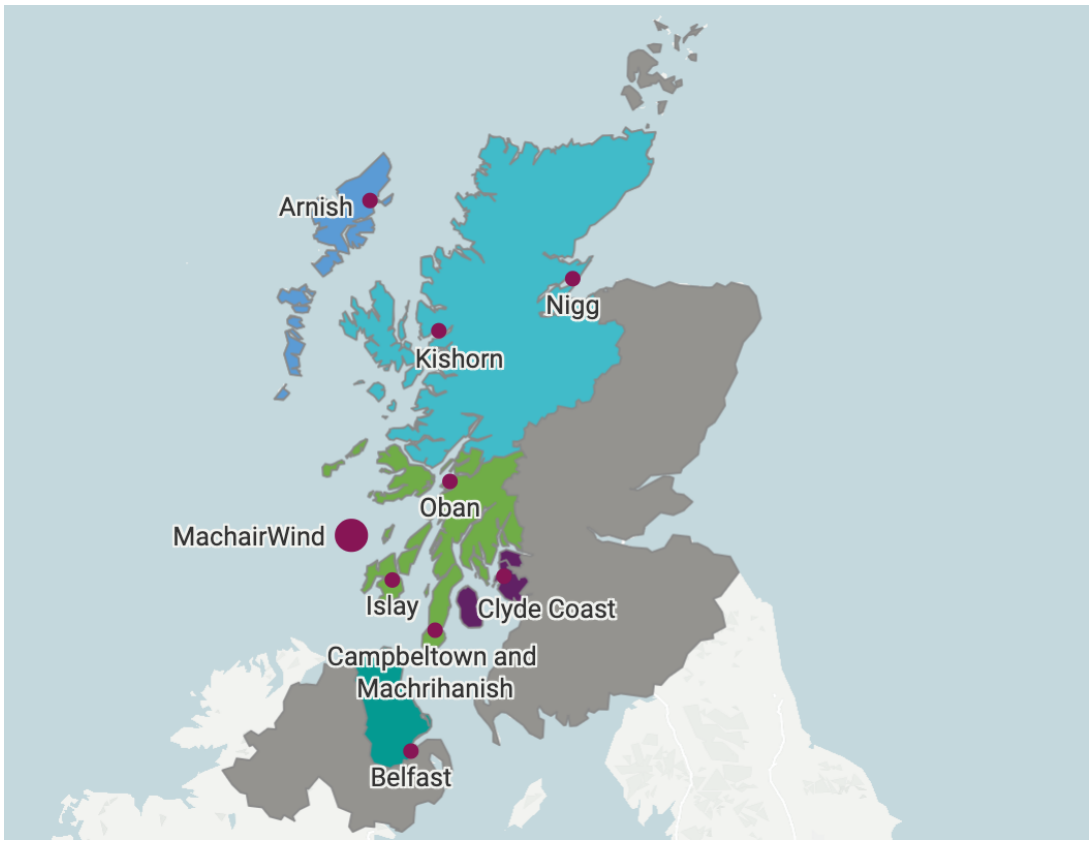
## 1.1 Project Background

### 1.1.1 MachairWind

MachairWind is an offshore windfarm being developed by ScottishPower Renewables (SPR). It has a proposed generating capacity of 2GW, providing enough electricity to power the equivalent of more than two million homes across the UK. The development is currently in the early stages and is expected to begin construction in the mid-to-late 2020s.

The site will be located off the coast of Argyll, within an area of seabed that is located north-west of Islay and west of Colonsay.

**Figure 1-1 MachairWind Offshore Windfarm: Site Location Plan**




Source: BiGGAR Economics. Made with DataWrapper

For the purposes of this study, six potential locations were investigated to host the construction phase of MachairWind and four potential locations were investigated to host an operations and maintenance (O&M) base.

In line with Crown Estate Scotland's ScotWind objectives, the ambition is to positively impact the local economy, enhance Scottish infrastructure and facilities for offshore wind, and enable local companies to become a key part of the homegrown, clean energy future. As SPR is committed to supporting investment in Scottish infrastructure and facilities, its preference is to use Scottish construction and O&M facilities for the MachairWind development. However, Belfast is a well-established port with a significant handling capacity and is located close to the windfarm. As such, Belfast fulfils some of the criteria that SPR considers when arriving at a list of potential port options for an offshore windfarm project.

The scenario planning for the construction phase assumes marshalling, assembly and storage activities over a period of three years. The scenario planning for the O&M phase assumes a 26-year lifetime and includes a logistics base; foundation staging and storage; tower, nacelle and blade storage, marshalling and assembly and, berthing of vessels.

### 1.1.2 SPR

SPR is a leading renewable energy developer that forms part of the ScottishPower group of companies, operating in the UK as part of the Iberdrola Group. The company has over 40 operational windfarm sites producing over 3,000 MW of onshore and offshore wind capacity across the UK. Across its project portfolio, SPR seeks to maximise the benefits to the local communities hosting its developments and is committed to ongoing engagement with stakeholders throughout the lifetime of this project.

## 1.2 Objectives

The study focusses on mapping and assessing the potential positive and negative impacts of developing, constructing, and operating MachairWind on local communities, local enterprises, economies, and services.

The role of this very early-stage study is to explore the potential economic and social benefits of the development and understand how these can be enhanced, and how challenges can be mitigated. The outputs will inform the next steps taken by SPR as it moves forward with the development.

Specific objectives of the study were to:

- understand the current socio-economic situation in the region and specific areas in the vicinity of the development;
- undertake a socio-economic assessment of specific port locations and that may be used in the construction phase; and
- undertake a socio-economic assessment of specific potential locations for the operation and maintenance (O&M) base.

## 1.3 Method

This report employs a mixed-method research approach, combining qualitative techniques to capture community perspectives and experiences, along with the development of a quantitative economic model. The aim is to gain an understanding of the impacts and opportunities of the MachairWind development for the communities involved.

## 1.4 Further Studies

This report does not provide a relative scoring system to indicate a preference for the locations identified. Technical feasibility is outside the scope of this study.

Further studies are required to take cognisance of changes in the political landscape and investigate technical capabilities, which will help inform the decision-making process for the location of construction and O&M facilities for MachairWind.

A port feasibility study will be undertaken to understand the technical capabilities of various ports. The report will identify a short-list of ports that could satisfy the requirements for the MachairWind construction and O&M stages. Following this process, there may be opportunities for the other locations that have been identified and investigated.

A further socio-economic impact assessment will be undertaken as part of the statutory Environmental Impact Assessment process. Thus, assessment will demonstrate the employment and social opportunities, in addition to the distributional effects, associated with the development, construction and O&M stages of MachairWind.

This initial socio-economic report forms part of a series of evidence-based reports. As the project progresses, stakeholders with an interest in, or who are impacted by MachairWind will continue to be part of the conversation.

# 2. Executive Summary

This report examines the impacts and opportunities of the MachairWind Offshore Windfarm for communities and supply chain businesses in several locations that might be influenced by its development. Using semi-structured interviews, the study method provides insights into the concerns and expectations of each community involved, alongside a quantitative economic model to assess potential impacts.

This study highlights the opportunities and challenges in establishing MachairWind's onshore facilities in economically fragile areas. The rationale includes the Governance and Sustainability Principles of the Iberdrola Group as well as potential commercial benefits from a deep relationship with host communities. These benefits involve fostering stronger local supply chains, supported by close inter-relationships, along with creative solutions from local government partners. Moreover, the availability of training and employment opportunities in remote communities fuels a dedicated and engaged workforce. Overall, these commercial advantages contribute to economic growth and social well-being, presenting a win-win situation for both the host communities and MachairWind.

MachairWind's impact on the labour market varies across regions, with potential to diversify the economic base and create jobs, bolstering communities heavily reliant on specific industries. Local authorities and public agencies are proactively addressing labour market constraints, and a strong appetite exists for skills development opportunities.

Community benefits and impacts are central, emphasising sustainability, community development, and addressing demographic challenges associated with depopulation. Consultees highlight the importance of stability, improved infrastructure, and training opportunities for young people, as well as the potential for MachairWind to contribute to net-zero goals and alleviate fuel poverty.

A major concern revolves around housing supply, especially in the Scottish Highlands and Islands, where finding affordable housing poses challenges for both existing and incoming residents. However, stakeholders are optimistic about the development's potential to contribute to addressing these issues and positively influence other sectors.

The influence of MachairWind extends beyond its host communities, affecting neighbouring regions in terms of power supply, infrastructure, and economic diversification. While the primary sites may be located in specific rural communities, the manufacturing, transportation, and service sectors can be spread across neighbouring areas. This decentralisation can lead to increased economic activity in several parts of rural Scotland and beyond.

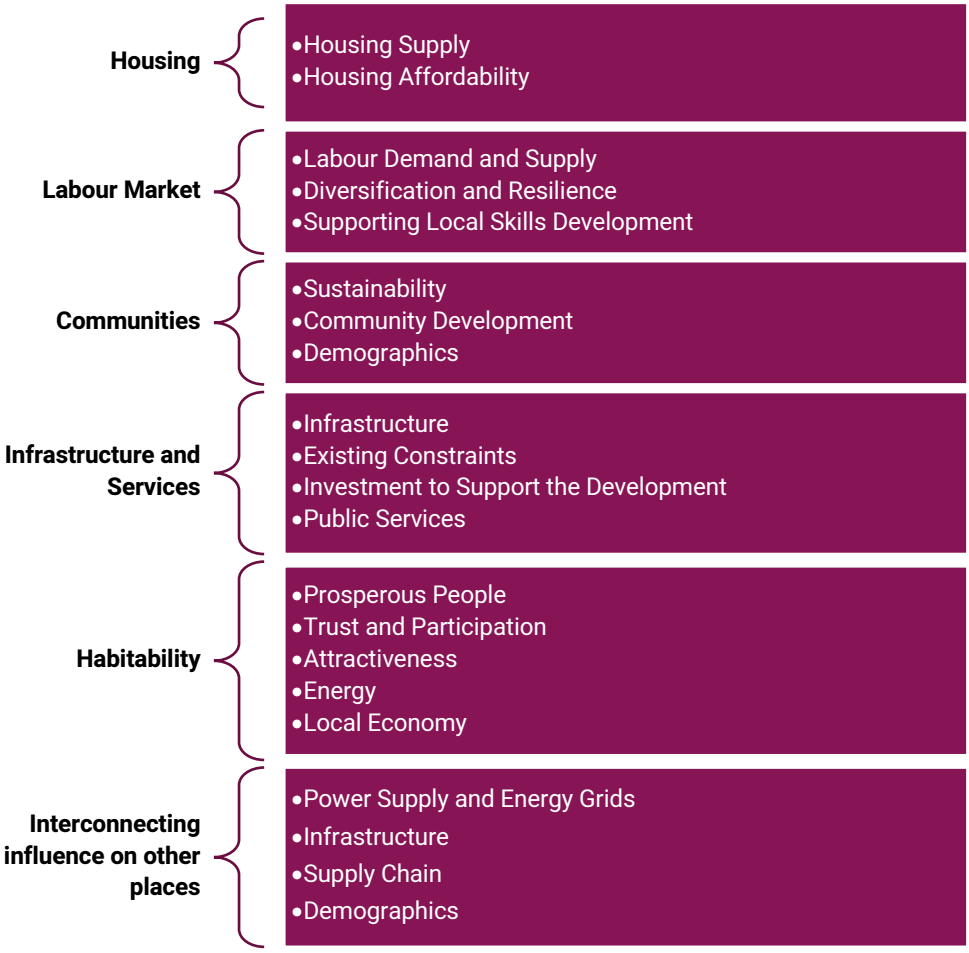
To ensure success, effective engagement with local communities is paramount. Careful planning, investment, and collaboration will help the MachairWind development bring lasting benefits, fostering economic growth, sustainability, and community well-being. There are potential impacts on habitability for island communities in particular.

# 3. Community Impacts

## Impacts and opportunities of MachairWind for its host communities.

The MachairWind development holds great promise, aiming to make substantial contributions to the sustainable energy landscape. However, it is essential to assess the potential impacts it may have on communities in the locations where its activity will be located and communities which may be influenced by MachairWind's activities. This chapter is based on information obtained from a series of semi-structured interviews with people who have an interest in each potential host community identified for MachairWind's O&M and construction activities. With open questions that were carefully crafted not to lead the participants, the discussions uncovered various issues of importance to each community.

**Figure 3-1: Issues of importance to communities**




## 3.1 Housing

Housing supply is a major concern for the Scottish Highlands and Islands communities that might host an O&M base or a construction site for MachairWind. Every consultation with a

community organisation raised housing as a relevant issue for the development of MachairWind. Noting constraints, the consultees were positive in their views about the beneficial role the development could play in mitigating these, along with developments in other sectors. People articulated the challenges in finding adequate and affordable housing for existing and incoming residents, especially in the islands.

## 3.2 Labour Market

The consultees have discussed the potential impact of MachairWind on the labour market in each place. The development has potential to create more jobs and diversify the economic base at each location, especially where a place is strongly reliant on one industry, such as whisky on Islay, for example, or where the economy has been reliant on a small number of employers, such as in Campbeltown. In this way, consultees consider that MachairWind has the potential to increase economic resilience, by diversifying the economic base. Consultees in all the places included in the study reflected that the development could provide transformational employment opportunities.

## 3.3 Communities

Community benefits and impacts were an important focus of the consultations, and opportunities to enhance or mitigate these were highlighted. Three themes emerged from these discussions: sustainability, community development, and demographic challenges associated with depopulation. Key opportunities under these themes include:

- to provide stability and encourage people to return to their local area, as well as to encourage young people to stay who might otherwise have left;
- for communities to benefit from the development of roads, housing, and other infrastructure, improving connectivity, housing standards and the various personal and community wellbeing benefits these bring;
- to attract more working families to live within the place, helping create a thriving community and support public services, for example by maintaining school rolls and GP surgery patient numbers;
- for the development to create training opportunities such as apprenticeships and encourage young people to stay who might have otherwise left;
- should there be energy supply benefits from MachairWind, this would help places move towards net zero and alleviate issues associated with fuel poverty.

## 3.4 Infrastructure and Public Services

Consultees discussed the potential impact of MachairWind on infrastructure and the benefits and impacts that might create. Consultees included community members as well as public sector and private sector people with interests in port infrastructure.

Overall, it appears that the offshore wind development has the potential to have both positive and negative impacts on port activity in these areas, and investment in port infrastructure and cooperation between ports could help to support the development and address existing constraints.

## 3.5 Habitability

This study of the potential impacts of the MachairWind development on host communities touches on several themes that are relevant to the habitability concept. This has been raised as an issue by several island consultees. There are seven themes embedded as important aspects of habitability on island communities. These relate to the importance of having a prosperous population, trust and participation among community members, access to clean water, healthy ecosystems, an attractive environment, sustainable energy sources, and a strong local economy in ensuring the long-term habitability and sustainability of an island.

Overall, this study provides valuable insights into how the MachairWind development could potentially impact various aspects of habitability in host communities. It highlights both opportunities and challenges that need to be carefully considered and addressed in order to ensure that the development supports long-term habitability and sustainability.

## 3.6 Interconnecting Influence in Rural Scotland

The development and operation of MachairWind can lead to a variety of interconnecting issues that extend beyond the immediate host communities for the O&M and construction phases of the development. These can influence neighbouring regions, infrastructure, and economic activities in several ways:

- Power Capacity: In rural areas with limited power generation capacity, MachairWind could have an influence on the energy grid.
- Infrastructure Development: Improved infrastructure, such as roads, ports, and transmission lines, can enhance connectivity and accessibility for both the host and neighbouring regions, fostering economic growth and trade opportunities.
- Supply Chain Opportunities: Opportunities for local companies to participate in the supply chain are clear. While the primary sites may be located in specific rural communities, the manufacturing, transportation, and service sectors can be spread across several regions, including neighbouring areas. This decentralisation can lead to increased economic activity in other parts of Scotland and the rest of the UK.
- Economic Diversification: Rural communities often have economies that heavily rely on specific industries or sectors. Diversification of the economic base reduces the community's vulnerability to fluctuations in traditional industries. This diversification can lead to a more resilient and sustainable economic landscape in both host and nearby regions.
- There are downstream benefits for other industries, such as the creation of jobs in tourism.

## 3.7 Conclusions

MachairWind presents opportunities to address skills issues, support sustainability efforts, community development and stimulate economic activity. Success will depend on addressing existing constraints in infrastructure, labour availability, and public services. Fulsome engagement with local communities and stakeholders is essential to ensure the development is beneficial and aligned with the needs and priorities of the places involved. Challenges can also be perceived as opportunities and consultees consider that MachairWind has the potential to bring positive and lasting benefits to the locations involved, fostering economic growth, sustainability, and community well-being.

# 4. Perspectives from the Supply Chain

People from several businesses contributed their views to this study.

There are important opportunities for Scottish supply chain companies to provide services which are fundamental to the development of offshore wind. SPR acknowledges that strengths exist within the Scottish supply chain and has committed to working with local suppliers and relevant organisations to help to deliver maximum Scottish content for the MachairWind project. SPR is also providing £25 million of funding through the MachairWind Offshore Wind Stimulus Fund (MOWSF) to support Scottish supply chain growth - working work with partners such as Scottish Enterprise (SE), Highlands and Islands Enterprise (HIE) and DeepWind to identify Scottish suppliers with the potential to fulfil subcontracted scopes of work.

## 4.1 Supply Chain Events

During the course of this study, SPR in conjunction with HIE and Argyll and Bute Council held supplier events in Oban (Dunstaffnage) and Campbeltown to begin engagement with potential supply chain companies. Over 60 different businesses attended along with several public sector and skills development organisations. Some businesses were local to Argyll and Bute but there were also companies with a Scottish, UK or international remit representing engineering, transportation, safety equipment, logistics and management sectors.

The supply chain events focussed on providing businesses with information about the development of MachairWind and how they could access new markets provided by the development. Businesses also had the opportunity to showcase their strengths to SPR and it was evident that there was a strong desire from all businesses present to engage with the supply chain – businesses most local to the development were particularly enthusiastic.

## 4.2 Business Views

Local businesses recognised that engaging in the supply chain for MachairWind could provide a platform for young people to obtain a good career and would ultimately lead to growth in the local economy. Several local businesses (within Argyll and Bute) highlighted their experience in the onshore wind sector, for example DM Fabrications (8 employees), Renewable Parts (44 employees) and McFadyens Contractors (140 employees), and described the benefits of local collaboration and support in delivering for clients. These businesses would welcome the opportunity to expand and develop - providing them with the means to retain their employees on a long-term basis and develop apprenticeships and career pathways.

There is great enthusiasm from businesses at all scales and from throughout the UK to engage in the supply chain.

## 4.3 Conclusions

Lessons learned from SPR's development of offshore local supply chain activity in East Anglia could be reviewed and applied to MachairWind where appropriate. The East Anglia Hub

comprises individual projects, including EA ONE and East EA THREE. These represent a significant contribution to the UK's renewable energy capacity and provide valuable insights for future offshore wind projects. There are also lessons to be learned from onshore development activities. Case studies of a range of different types of businesses from pre-supply to full engagement in the supply chain would provide insights into what their experiences in engaging in the supply chain – how they have adapted and what this has meant for them as a company and for the local economy. This would enable small businesses most local to MachairWind to envisage what engagement in the supply chain might mean for them and importantly begin to consider how they may start to put themselves in a position to be able to deliver.

# 5. Islay

In scope to be a host community for an O&M base.

## 5.1 Economic Context

Located in Argyll and Bute in Scotland, Islay has a total population of approximately 3,000, of which around 57% (1,711) are aged between 16 and 64 (the working age population). Around half of Islay's population is concentrated in Bowmore, at the centre of the Island, and Port Ellen in the South. Bowmore has a population of 710 people, 59% of which (418) are working age. Port Ellen has a total population of 810. Of this, 62% (500) are of working age.

'Travel to Work Areas' are zones defined in Government datasets where the bulk of their resident population work within the same area. Jura and Mull are included in the statistical dataset with Islay.[1] Key sectors of employment in the travel to work area associated with Islay include manufacturing, which accounts for 14.3% of employment, of which 69.9% are concentrated in the manufacture of beverages. Accommodation and food services is also a major employer, accounting for 14.3% of jobs. Fishing and aquaculture employment is above average at 7.3%. Transport and storage employment is above average in the area, accounting for 6.4% of total employment. The economic activity rate in the area was 87.2% in 2022, above the Scottish average, while the unemployment rate was 2.0%, below the average across Scotland.

**Figure 5-1 Islay**


Source: BiGGAR Economics. Made with DataWrapper.

[1] ONS defined travel to work area 'Mull and Islay'

## 5.2 Quantitative Economic Impacts

Islay is a potential area for an O&M base for MachairWind. Consequently, the development could generate impact in Islay through:

- Employing local people at the O&M base;
- Spending in the supply chain in Islay to support O&M;
- Investing in port redevelopment to support activities;
- Recruiting transient workers who will spend in the area; and
- The construction of housing for transient workers.

### 5.2.1 O&M

During each year of operation, the MachairWind development will create impact by hiring staff directly in the local area to work in the O&M base, who in turn generate impact when they spend their salaries. Operational impacts are also generated through spending in the supply chain.

It was estimated that approximately 31% of spending associated with the O&M base would go towards contracts with companies based in Islay, worth £0.3 million each year. This estimate was based on the current industrial capabilities of the travel to work area associated with Islay. However, in the long term, the presence of an operational base could enable development in the local supply chain, resulting in larger impacts as the operational lifetime of the project progresses.

It was estimated that the impacts generated by the O&M base and supply chain spending in the local area could generate 64 jobs in Islay.

### 5.2.2 Port Investment

To enable the operation and maintenance activities to take place on Islay, there is a potential need to invest in port expansion or redevelopment (unlikely to be entirely covered by MachairWind). It is not yet known what work will be required in each area to enable operations, and therefore the impact has been calculated assuming a baseline £1.0 million investment.

As with operational activities, the share of expenditure awarded to companies based in the local area was estimated based on the current industrial structure in Islay's travel to work area. It was therefore estimated that 15% (£150,000) of investment in port expansion would be awarded to contractors based in the local area.

It was estimated that £1.0 million of investment could support 2 jobs in in the area.

### 5.2.3 Transient Worker Impact

As well as those employed locally, transient workers will be employed to work in the area on operation and maintenance activities and port expansion. Transient workers create impact through their spending while in the local area.

Based on the current industrial structure of Islay's travel to work area, it was estimated that 68% of workers engaged in operational activities would be transient, and 85% of workers involved in port expansion would be transient.

It was estimated that 3 transient workers would be required for operational activities in Islay, with staff costs of £0.2 million, and 9 transient workers would be employed in port expansion,

with staff costs of £0.3 million. It was assumed that transient workers would spend 40% of their salaries in Islay.

The impact generated by transient worker spending was calculated using the appropriate ratios and multipliers. In this way, it was estimated that the spending of:

- O&M transient workers could generate <1 job on Islay each year; and
- Port expansion transient workers could generate 1 job on Islay.

## 5.3 Conclusions

Through a series of consultations with Islay and Jura community members, several key concerns and opportunities regarding the potential impacts of the MachairWind O&M base have emerged.

The community on Islay highlighted challenges related to housing, labour market, infrastructure, and visual impacts, while also expressing the potential for positive outcomes. Opportunities to enhance benefits include addressing the housing shortage to accommodate new workers, diversifying the economy beyond whisky, and investing in major infrastructure improvements to support the facility.

The windfarm could contribute to community sustainability in the long-term, create job opportunities for Islay and Jura, and foster skills development. Collaborating with local stakeholders and exploring a well-structured community benefit fund could further maximise the development's positive impact, addressing community needs and supporting the transition towards a sustainable future. There are some downstream impacts and some of these, on Colonsay, are a result of the windfarm itself, rather than as a consequence of the potential development on Islay.

A summary of the quantitative and wider economic impacts of MachairWind on Islay is provided below.

### Islay – in scope to host an O&M facility

**Operations & Maintenance:**

60 direct jobs at base & £0.3 million/year in local supply chain, 64 jobs total

**Port Investment:**

£1.0 million investment:

£150,000 to local contractors, 2 jobs

**Transient Worker Impact:**

O&M - 3 workers, £0.2 million staff costs, <1 job/year

Port - 9 workers, £0.3 million staff costs, 1 job

**Housing for Transient Workers:**

Housing for 19 workers

£0.3-0.6 million local expenditure, 2-3 jobs

# 6. Oban

In scope to be a host community for an O&M base.

## 6.1 Economic Context

Located in Argyll and Bute in Scotland, Oban has a total population of 8,140. Of this, 65% (5,225) are of working age.

Key sectors in the area[2] include accommodation and food services, which accounts for 16.3% of employment in the travel to work area of Oban. Transport and storage employment is slightly above average, accounting for 5.0% of jobs in the area. Employment in architectural and engineering activities is also higher than the share accounted for by this sector across Scotland, accounting for 4.4% of jobs in the area. Employment in the fishing and aquaculture sector is also higher than average at 3.8%. Of the 4.4% of workers in the manufacturing sector, 50.0% were employed in the manufacture of food products.

The economic activity rate in the area was above average at 81.3%, while the unemployment rate was 2.0%, below the Scottish average.

**Figure 6-1 Oban**


Source: BiGGAR Economics. Made with DataWrapper.

[2] ONS defined travel to work area 'Oban'

## 6.2 Quantitative Economic Impacts

Oban is a potential area for an O&M base for MachairWind. Consequently, the development could generate impact in Oban through:

- Employing local people at the O&M base;
- Spending in the supply chain in Oban to support O&M;
- Investing in port redevelopment to support activities; and
- Recruiting transient workers who will spend in the area.

### 6.2.1 O&M

It was estimated that approximately 66% of spending associated with the O&M base would go towards contracts with companies based in Oban, worth £0.5 million each year. This estimate was based on the current industrial capabilities of the travel to work area associated with Oban. However, in the long term, the presence of an operational base could enable development in the local supply chain, resulting in larger impacts as the operational lifetime of the project progresses.

It was estimated that the impacts generated by the O&M base and supply chain spending in the local area could generate 68 jobs in Oban.

### 6.2.2 Port Investment

As with Islay, Oban may require investment in existing port infrastructure to enable operation and maintenance activities to take place in Oban.

Similar to operational activities, the share of expenditure awarded to companies based in the local area was estimated based on the current industrial structure in Oban's travel to work area. It was therefore determined that, assuming a baseline investment of £1.0 million, approximately £0.6 (60%) of investment in port expansion would be awarded to contractors based in the local area.

It was estimated that £1.0 million of investment could support 7 jobs in in the area.

### 6.2.3 Transient Worker Impact

Based on the current industrial structure of Oban's travel to work area, it was estimated that 34% of workers engaged in operational activities would be transient, and 40% of workers involved in port expansion would be transient.

It was estimated that 2 transient workers would be required for operational activities in Oban, with staff costs of £88,000, and 4 transient workers would be employed in port expansion, with staff costs of £0.1 million. It was assumed that transient workers would spend 50% of their salaries in Oban.

The impact generated by transient worker spending was calculated using the appropriate ratios and multipliers. In this way, it was estimated that the spending of:

- O&M transient workers could generate <1 job in Oban each year; and
- Port expansion transient workers could generate 1 job in Oban.

## 6.3 Conclusions

While the potential development of the O&M base in Oban holds significant economic potential, it is vital to take into account the broader community views and consider measures to labour market, and infrastructure challenges for the project to thrive and benefit the region as a whole.

There are concerns and opportunities in Oban related to housing, labour market conditions, and infrastructure limitations. Providing career advancement opportunities could help address labour market challenges and promote workforce development. Careful consideration is required about infrastructure constraints, in particular in relation to roads infrastructure.

A summary of the quantitative and wider economic impacts of MachairWind on Oban is provided below.

### Oban – in scope to host an O&M facility

**Operations & Maintenance:**

60 direct jobs at base & £0.5 million/year in local supply chain, 68 jobs total

**Port Investment:**

£1.0 million investment:

£0.6m to local contractors, 7 jobs

**Transient Worker Impact:**

O&M - 2 workers, £88,000 staff costs, <1 job/year

Port - 4 workers, £0.1m staff costs, 1 job

# 7. Campbeltown & Machrihanish

In scope to be a host community for an O&M base and a construction base.

## 7.1 Economic Context

Located in Argyll and Bute in Scotland, Campbeltown and Machrihanish have a combined population of 4,534. Of this, 58% (2,579) are of working age.

Important sectors of employment in the Campbeltown and Machrihanish travel to work area[3] includes accommodation and food services, which accounts for 9.6% of total employment. Manufacturing employment is equivalent to 5.8% of jobs, of which 50.0% was accounted for by the manufacture of beverages. The share of employment accounted for by the transport and storage sector was above average, equivalent to 10.0% of jobs in the area. Construction employment was below average at 5.0%, while employment in fishing and aquaculture accounted for 2.9%.

The economic activity rate in the area was 74.3%, below the Scottish average. The unemployment rate was below average at 2.0%.

**Figure 7-1 Campbeltown and Machrihanish**


Source: BiGGAR Economics. Made with DataWrapper.

[3] ONS defined travel to work area 'Campbeltown'

## 7.2 Quantitative Economic Impacts

Campbeltown and Machrihanish is a potential area for both the development and construction and O&M bases for MachairWind. Consequently, the development could generate impact in Campbeltown and Machrihanish through:

- Spending in the supply chain in Campbeltown to support development and construction activities;
- Employing local people at the O&M base;
- Spending in the supply chain in Campbelltown to support O&M;
- Investing in port redevelopment to support activities;
- Recruiting transient workers who will spend in the area; and
- The construction of housing for transient workers.

### 7.2.1 Development and Construction

Based on the current industrial capabilities of Campbeltown and Machrihanish, it was assumed that of the total expenditure associated with the activities taking place in the local area, approximately 10% would occur in Campbeltown and Machrihanish. This is equivalent to £13.6 million over the expected three year construction period. However, in the long term, the establishment of a development and construction base may allow the development of the supply chain capabilities of the area, allowing an increase in the share of spend awarded to contractors in Campbeltown and Machrihanish during the development and construction phase.

It was determined that development and construction supply chain spending in the local area could support 117 years of employment, equivalent to 39 jobs each year of construction.

### 7.2.2 O&M

It was estimated that approximately 22% of spending associated with the O&M base would go towards contracts with companies based in Campbeltown and Machrihanish, worth £182,000 each year. This estimate was based on the current industrial capabilities of the travel to work area associated with Campbeltown and Machrihanish. However, in the long term, the presence of an operational base could enable development in the local supply chain, resulting in larger impacts as the operational lifetime of the project progresses.

It was estimated that the impacts generated by the O&M base and supply chain spending in the local area could generate 62 jobs in Campbeltown and Machrihanish.

### 7.2.3 Port Investment

As with operational activities, the share of expenditure awarded to companies based in the local area was estimated based on the current industrial structure in the travel to work area associated with Campbeltown and Machrihanish. It was therefore determined that, assuming a baseline investment of £1.0 million, approximately £0.1 (10%) of investment in port expansion would be awarded to contractors based in the local area.

It was estimated that £1.0 million of investment could support 1 job in the area.

### 7.2.4 Transient Worker Impact

Based on the current industrial structure of Campbeltown and Machrihanish's travel to work area, it was estimated that 90% of workers engaged in development and construction activities

would be transient, 78% of workers engaged in operational activities would be transient, and 90% of workers involved in port expansion would be transient.

It was estimated that 310 transient workers would be required each year for development and construction in Campbeltown and Machrihanish, with total staff costs of £42.5 million over the three year construction period. Operational activities are likely to require 4 transient workers, with staff costs of £0.2 million, and 9 transient workers would be employed in port expansion, with staff costs of £0.3 million. It was assumed that transient workers would spend 40% of their salaries in Campbeltown and Machrihanish.

The impact generated by transient worker spending was calculated using the appropriate ratios and multipliers. In this way, it was estimated that the spending of:

- Development and construction transient workers could generate 134 jobs in Campbeltown and Machrihanish;
- O&M transient workers could generate <1 job in Campbeltown and Machrihanish each year; and
- Port expansion transient workers could generate 1 job in Campbeltown and Machrihanish.

### 7.2.5 Housing of Transient Workers

From qualitative information gathered through consultations, it was determined that there would be a requirement for temporary housing for transient workers in Campbeltown and Machrihanish. In order to house transient workers, Campbeltown and Machrihanish would require investment of approximately £1.0 million to refit the closed RAF Machrihanish base to be suitable for purpose.

Based on the current industrial structure in the local area, it was determined that companies based in Campbeltown and Machrihanish could benefit from 25% of investment associated with the refit of the army base, equivalent to £0.3 million. It was estimated that the refit of the army base could support 2 jobs in Campbeltown and Machrihanish.

## 7.3 Conclusions

There are concerns about housing constraints in the area, and various housing-related issues have been raised, such as accessibility, rental properties, and housing options. The labour market faces challenges due to limited job opportunities, a declining population, and a fragile local economy. These challenges present opportunities to create benefits.

There is enthusiasm and capacity among local people to take up job opportunities generated by MachairWind, and existing supply chain companies offer relevant skills and capacity for work. The communities express strong support for the development, seeing it as a means to address the employment deficit and boost local economic activity. The presence of a stable and consistent source of economic activity is wanted to contribute to the community's long-term sustainability.

Attracting people to the area remains a concern, and the development is seen as a potential game-changer in this respect. Existing infrastructure and services in Campbeltown are viewed as valuable, and while there are constraints around the road network, the area has a proud history of access by sea.

A summary of the quantitative and wider economic impacts of MachairWind on Campbeltown is provided below.

## Campbeltown – in scope to host an O&M and a construction facility

**Development and Construction:**

£13.6m spend in local supply chain

117 job years (36 jobs each year of construction phase)

**Operations & Maintenance:**

60 direct jobs at base

£0.2 million/year in local supply chain, 62 jobs total

**Port Investment:**

£1.0 million investment:

£0.1 million to local contractors, 1 job

**Transient Worker Impact:**

Construction - 310 transient workers per year, £42.5 million staff costs, 134 jobs

O&M - 4 transient workers, £0.2 million staff costs, <1 job

Port - 9 transient workers, £0.3m staff costs, 1 job

**Housing for Transient Workers:**

£0.3 million local expenditure, 2 jobs

# 8. Clyde Coast

In scope to be a host community for an O&M base and a construction base.

## 8.1 Economic Context

The Clyde Coast, which extends from Hunterston, located in North Ayrshire, to Inverkip, located in Inverclyde, has a total population of 10,095, of which approximately 59% (5,958) are of working age.

The relevant sectors of employment in the travel to work areas of Clyde Coast[4] include manufacturing, which accounts for 8.1% of employment in the area. Of this, 19.8% are employed in the manufacture of fabricated metal products. Accommodation and food services is also a major employer in the area, accounting for 7.8% of jobs. Construction employment in the area is above average at 9.0%, as is transport and storage employment, which accounts for 8.7% of employment in the travel to work areas.

The economic activity rate in the area was 74.8% in 2022, below the Scottish average, while the unemployment rate was 2.3%, below the unemployment rate of Scotland as a whole.

**Figure 8-1 Clyde Coast**


Source: BiGGAR Economics. Made with DataWrapper.

[4] ONS defined travel to work areas 'Kilmarnock and Irvine' and 'Greenock'

## 8.2 Quantitative Economic Impacts

Clyde Coast is a potential area for both the development and construction and O&M bases for MachairWind. Consequently, the development could generate impact in Clyde Coast through:

- Spending in the supply chain in Clyde Coast to support development and construction activities;
- Employing local people at the O&M base;
- Spending in the supply chain in Clyde Coast to support O&M;
- Investing in port redevelopment to support activities;
- Recruiting transient workers who will spend in the area; and
- The construction of housing for transient workers.

### 8.2.1 Development and Construction

Based on the current industrial capabilities of Clyde Coast, it was estimated that of the total expenditure associated with the activities taking place in the local area, 79% would occur in Clyde Coast. This is equivalent to £112.6 million over the expected three year construction period.

It was determined that development and construction supply chain spending in the local area could support 1,155 years of employment, equivalent to 385 jobs each year of construction.

### 8.2.2 O&M

It was estimated that approximately 76% of spending associated with the O&M base would go towards contracts with companies based in Clyde Coast, worth £0.6 million each year.

It was estimated that the impacts generated by the operations base and supply chain spending in the local area could generate 71 jobs in Clyde Coast.

### 8.2.3 Port Investment

The share of expenditure awarded to companies based in the local area was estimated based on the current industrial structure in the travel to work area associated with Clyde Coast. It was therefore determined that, assuming a baseline investment of £1.0 million approximately £0.9 million (85%) of investment in port expansion would be awarded to contractors based in the local area.

It was estimated that £1.0 million of investment could support 12 jobs in the area.

### 8.2.4 Transient Worker Impact

Based on the current industrial structure of Clyde Coast's travel to work area, it was estimated that 21% of workers engaged in development and construction activities, would be transient, 24% of workers engaged in operational activities would be transient, and 15% of workers involved in port expansion would be transient.

It was estimated that 73 transient workers would be required for development and construction in Clyde Coast, with total staff costs of £10.1 million over the three year construction period. Operation activities are likely to require 1 transient worker, with staff costs of £62,300, and 2 transient workers would be employed in port expansion, with staff costs of £51,000. It was assumed that transient workers would spend 60% of their salaries in Clyde Coast.

It was estimated that the spending of:

- Development and construction transient workers could generate 50 jobs in Clyde Coast;
- O&M transient workers could generate <1 job in Clyde Coast each year; and
- Port expansion transient workers could generate <1 job in Clyde Coast.

## 8.3 Conclusions

The closure of Hunterston Terminal in 2016 resulted in the loss of 120 jobs, but the establishment of the Hunterston Port and Resource Centre (PARC) is seen as an opportunity to create jobs, support skills development, and stimulate economic growth in various sectors. The project also has the potential to support the Ayrshire Growth Deal and benefit from transferable skills due to the decommissioning of the existing power station.

The project's designation as an energy hub in the National Planning Framework 4 (NPF4) presents strategic opportunities for the blue economy, renewable energy, and marine centres.

A summary of the quantitative and wider economic impacts of MachairWind on Clyde Coast is provided below.

**Clyde Coast – in scope to host an O&M and a construction facility**

**Development and Construction:**

£112.6 million spend in local supply chain

1,155 jobs years (385 jobs each year of construction phase)

**Operations & Maintenance:**

60 direct jobs at base & £0.6 million/year in supply chain, 71 jobs total

**Port Investment:**

£1.0 million investment:

£0.9 million to local contractors, 12 jobs

**Transient Worker Impact:**

Construction - 73 transient workers per year, £10.1 million staff costs, 50 jobs

O&M - 1 transient worker, £62,000 staff costs, 1 job

Port - 2 transient workers, £51,000 staff costs, <1 job

# 9. Arnish

In scope to be a host community for a construction base.

## 9.1 Economic Context

Located in the Western Isles in Scotland, the settlement of Arnish has a total population of approximately 93. The wider electoral ward of Sgire Nan Loch has a population of 1,793, 57% of which (1,019) are of working age.

Significant sectors of employment in the travel to work area associated with Arnish[5] include accommodation and food services, which accounts for 7.5% of total employment. Construction also accounts for 7.5% of employment in the area, above the Scottish average. Employment in manufacturing is equivalent to 6.7% of all employment, of which 62.7% is in the manufacture of food products. There is above average employment in fishing and aquaculture in the area, accounting for 3.3% of total employment. Transport and storage employment was also slightly above average at 5.0%

The economic activity rate in the area was 84.1% in 2022, above the Scottish average of 77.1% while the unemployment rate of 2.3% was below the Scottish average of 3.4%.

**Figure 9-1 Arnish**


Source: BiGGAR Economics. Made with DataWrapper.

[5] ONS defined travel to work area 'Eilean Siar'

## 9.2 Quantitative Economic Impacts

Arnish is a potential area for the development and construction base for MachairWind. Consequently, the development could generate quantitative economic impact in Arnish through:

- Spending in the supply chain in Arnish to support development and construction activities;
- Investing in port redevelopment to support activities; and
- Recruiting transient workers who will spend in the area.

### 9.2.1 Development and Construction

Based on the current industrial capabilities of Arnish, it was estimated that of the total expenditure associated with the activities taking place in the local area, 60% would occur in Arnish. This is equivalent to £86.1 million over the expected three year construction period. However, in the long term, the establishment of a development and construction base may allow the development of the supply chain capabilities of the area, allowing an increase in the share of spend awarded to contractors in Arnish during the development and construction phase.

It was determined that development and construction supply chain spending in the local area could support 800 years of employment, equivalent to 267 jobs each year of construction.

### 9.2.2 Port Investment

As with other areas, Arnish may require investment in existing port infrastructure to enable construction activities to take place in the local area.

The share of expenditure awarded to companies based in the local area was estimated based on the current industrial structure in the travel to work area associated with Arnish. It was therefore determined that, assuming a baseline investment of £1.0 million approximately £0.7 million (70%) of investment in port expansion would be awarded to contractors based in the local area.

It was estimated that £1.0 million of investment could support 4 jobs in in the area.

### 9.2.3 Transient Worker Impact

As well as those employed locally, transient workers will be employed to work in the area on development and construction and port expansion activities. Transient workers create impact through their spending while in the local area.

Based on the current industrial structure of Arnish's travel to work area, it was estimated that 40% of workers engaged in development and construction activities, would be transient, and 30% of workers involved in port expansion would be transient.

It was estimated that 138 transient workers would be required for development and construction in Arnish, with staff costs of £18.7 million in total over the three year construction period. Port expansion activities are likely to require 7 transient workers, with staff costs of £0.2 million. It was assumed that transient workers would spend 40% of their salaries in Arnish.

The impact generated by transient worker spending was calculated using the appropriate ratios and multipliers. In this way, it was estimated that the spending of:

- Development and construction transient workers could generate 61 jobs in Arnish; and

- Port expansion transient workers could generate 1 job in Arnish.

## 9.3 Conclusions

Jobs associated with the construction base will be welcomed and may provide the opportunity/impetus for new housing to be built in the area. A clear aspiration for delivering community benefit will influence local perceptions.

The availability of a skilled workforce, the capacity of Harland and Wolf to take on business, and the investment in infrastructure such as a deepwater port and housing are all important factors in the success of the project. At the same time, there may be challenges related to capacity and the need to balance economic development with community benefit.

A summary of the quantitative and wider economic impacts of MachairWind on Arnish is provided below.

### Arnish – in scope to host a construction facility

Development and Construction:

£86.1 million spend in local supply chain

800 job years (267 jobs each year of construction phase)

Port Investment:

£1 million investment:

£0.7 to local contractors, 4 jobs

Transient Worker Impact:

Construction - 138 transient workers per year, £18.7 million staff costs, 61 jobs

Port - 7 transient workers, £0.2 million staff costs, 1 job

# 10. Kishorn

In scope to be a host community for a construction base.

## 10.1 Economic Context

Located in the Scottish Highlands, Kishorn has a total population of approximately 136. The wider electoral ward of Wester Ross, Strathpeffer and Lochalsh has a total population of 12,225, and a working age population of 7,350 (60%).

Significant sectors of employment in the travel to work area associated with Kishorn[6] include accommodation and food services, which accounts for over a quarter (25.8%) of total employment. The construction sector is also a significant employer, accounting for 7.2% of jobs in the area. There is above average employment in fishing and aquaculture in the area, with the sector accounting for 6.4% of jobs. Manufacturing employment is below average at 2.4%, though 41.7% of this is in the manufacture of other transport equipment. Transport and storage employment is also below average at 3.3%.

The economic activity rate in the area was 52.7% in 2022, significantly below the Scottish average. Unemployment in the area was higher than average at 4.0%.

**Figure 10-1 Kishorn**


Source: BiGGAR Economics. Made with DataWrapper.

[6] ONS defined travel to work area 'Broadford and Kyle of Lochalsh'

## 10.2 Quantitative Economic Impacts

Kishorn is a potential area for the development and construction base for MachairWind. Consequently, the development could generate quantitative economic impact in Kishorn through:

- Spending in the supply chain in Kishorn to support development and construction activities;
- Investing in port redevelopment to support activities;
- Recruiting transient workers who will spend in the area; and
- The construction of housing for transient workers.

### 10.2.1 Development and Construction

Based on the current industrial capabilities of Kishorn, it was estimated that of the total expenditure associated with the activities taking place in the local area, 47% would occur in Kishorn. This is equivalent to £67.2 million over the expected three year construction period. However, in the long term, the establishment of a development and construction base may allow the development of the supply chain capabilities of the area, allowing an increase in the share of spend awarded to contractors in Kishorn during the development and construction phase.

It was determined that development and construction supply chain spending in the local area could support 526 years of employment, equivalent to 158 jobs each year of construction.

### 10.2.2 Port Investment

Based on the current industrial structure of Kishorn, it was determined that, assuming a baseline investment of £1.0 million approximately £0.7 million (70%) of investment in port expansion would be awarded to contractors based in the local area.

It was estimated that £1.0 million of investment could support 3 jobs in in the area.

### 10.2.3 Transient Worker Impact

Based on the current industrial structure of Kishorn's travel to work area, it was estimated that 53% of workers engaged in development and construction activities, would be transient and 30% of workers involved in port expansion would be transient.

It was estimated that 188 transient workers would be required for development and construction in Kishorn, with total staff costs of £25.2 million over the three year construction period. It is expected that 7 transient workers would be employed in port expansion, with staff costs of £0.2 million. It was assumed that transient workers would spend 40% of their salaries in Kishorn.

It was estimated that the spending of:

- Development and construction transient workers could generate 80 jobs in Kishorn; and
- Port expansion transient workers could generate 1 job in Kishorn.

### 10.2.4 Housing for Transient Workers

The wider impact section of this chapter will discuss the housing background in Islay. Based on the qualitative information gathered about the housing market on Islay, it was estimated that 80% of transient workers involved in operation and maintenance activities and port

redevelopment would require accommodation to be built to enable them to work on operational activities and on the port redevelopment.

Based on the current industrial capabilities in Kishorn, it was determined that approximately 40% of contracts associated with construction of the temporary housing would go to Kishorn. With an estimated 150 workers requiring accommodation each year, local investment in the construction of housing to enable transient workers to live locally during the construction period was determined to be between £5.3 million and £10.0 million, with potential investment varying with the type of accommodation constructed.

It was calculated that the construction impacts associated with housing transient workers could generate between 28 and 54 jobs in Kishorn.

## 10.3 Conclusions

The housing situation in the area reflects general rural housing challenges, with a lack of affordable options. The community seeks stable job opportunities to attract residents and support housing and infrastructure growth.

Kishorn Port aims to have a locally settled workforce. Upgrading the road infrastructure is vital for transportation and tourism opportunities, with the development of the port potentially accelerating road improvements and bringing associated benefits to the community.

A summary of the quantitative and wider economic impacts of MachairWind on Kishorn is provided below.

### Kishorn – in scope to host a construction facility

**Development and Construction:**

£67.2 spend in local supply chain

526 job years (175 jobs each year of construction phase)

**Port Investment:**

£1.0 million investment:

£0.7 million to local contractors, 3 jobs

**Transient Worker Impact:**

Construction - 188 transient workers per year, £25.2 million staff costs, 80 jobs

Port - 7 transient workers, £0.2 million staff costs, 1 job.

**Housing for Transient Workers:**

Housing for 150 workers

£5.3-10.0 million local expenditure, 28-54 jobs

# 11. Nigg

In scope to be a host community for a construction base.

## 11.1 Economic Context

Located in Highland in Scotland, Nigg has a total population of approximately 156. The wider electoral ward of Tain and Easter Ross has a total population of 4,731, of which 57% (2,685) are of working age.

Significant sectors of employment in the travel to work area associated with Nigg[7] include manufacturing, which accounts for 15.1% of total employment. Of this, 42.4% is accounted for by the manufacture of fabricated metal products. Construction employment was also above average at 7.5%, as was transport and storage at 5.6%. Of all jobs in the travel to work area and accommodation and food services accounts for 5.6% of employment, below the average across Scotland.

The economic activity rate in the area was significantly below average at 60.3%. Unemployment was above average at 4.0%.

**Figure 11-1 Nigg**


Source: BiGGAR Economics. Made with DataWrapper.

[7] ONS defined travel to work area 'Alness and Invergordon'

## 11.2 Quantitative Economic Impacts

Nigg is a potential area for the development and construction base for MachairWind. Consequently, the development could generate quantitative economic impact in Nigg through:

- Spending in the supply chain in Nigg to support development and construction activities;
- Investing in port redevelopment to support activities; and
- Recruiting transient workers who will spend in the area.

### 11.2.1 Development and Construction

Based on the current industrial capabilities of Nigg's travel to work area, it was estimated that of the total expenditure associated with the activities taking place in the local area, 73% would occur in Nigg. This is equivalent to £105.1 million over the expected three year construction period. However, in the long term, the establishment of a development and construction base may allow the development of the supply chain capabilities of the area, allowing an increase in the share of spend awarded to contractors in Nigg during the development and construction phase.

It was determined that development and construction supply chain spending in the local area could support 950 years of employment, equivalent to 317 jobs each year of construction.

### 11.2.2 Port Investment

The share of expenditure awarded to companies based in the local area was estimated based on the current industrial structure in the travel to work area associated with Nigg. It was therefore determined that, assuming a baseline investment of £1.0 million approximately £0.9 million (85%) of investment in port expansion would be awarded to contractors based in the local area.

It was estimated that £1.0 million of investment could support 11 jobs in in the area.

### 11.2.3 Transient Worker Impact

Based on the current industrial structure of Nigg's travel to work area, it was estimated that 27% of workers engaged in development and construction activities would be transient and 15% of workers involved in port expansion would be transient.

It was estimated that 92 transient workers would be required for development and construction in Nigg, with staff costs totalling £12.7 million over the three year construction period. Port expansion activities are likely to require 2 transient workers, with staff costs of £51,000. It was assumed that transient workers would spend 40% of their salaries in Nigg.

The impact generated by transient worker spending was calculated using the appropriate ratios and multipliers. In this way, it was estimated that the spending of:

- Development and construction transient workers could generate 41 jobs in Nigg; and
- Port expansion transient workers could generate <1 job in Nigg.

## 11.3 Conclusions

The large travel to work area means that a construction base at Nigg would be able to draw on a wide populated area to meet short and longer-term employment and housing needs.

Collaboration between University of Highlands and Islands (UHI) and Skills Development Scotland helps develop workforce skills, with a long-established skills academy sited at the port.

Hosting a construction base at the Port of Nigg would complement the Opportunity Cromarty Firth (OFC) strategy.

A summary of the quantitative and wider economic impacts of MachairWind on Nigg is provided below.

### Nigg – in scope to host a construction facility

**Development and Construction:**

£105.1 million spend in local supply chain

950 job years (317 jobs each year of construction phase)

**Port Investment:**

£1.0 million investment:

£0.9 million to local contractors, 11 jobs

**Transient Worker Impact:**

Construction - 92 transient workers per year, £12.7 million staff costs, 41 jobs

Port - 2 transient workers, £51,000 staff costs, <1 job

# 12. Belfast

## In scope to be a host community for a construction base.

As SPR is committed to supporting investment in Scottish infrastructure and facilities, its preference is to use a Scottish construction facility for MachairWind. However, Belfast is a well-established port with a significant handling capacity and is located close to the windfarm. As such, Belfast fulfils some of the criteria that SPR considers when arriving at a list of potential port options for an offshore windfarm project.

## 12.1 Economic Context

Located in County Antrim in Northern Ireland, Belfast has a total population of 345,006, 66% of which (227,883) are of working age.

Accommodation and food services, generally associated with the tourism industry, is a key employer in Belfast, accounting for 18.4% of total employment. Manufacturing accounts for 4.9% of employment, lower than average in Northern Ireland. Construction employment accounts for 4.0% of employment in Belfast.

The economic activity rate of Belfast was 70.3%, below the average across Northern Ireland as a whole (73.7%). Data on unemployment at the local authority level was not available for Belfast. Unemployment across Northern Ireland as a whole was 2.3% in 2022.

**Figure 12-1 Belfast**


Source: BiGGAR Economics. Made with DataWrapper.

## 12.2 Quantitative Economic Impacts

As SPR is committed to supporting investment in Scottish infrastructure and facilities, its preference is to use a Scottish construction facility for MachairWind. However, Belfast is a well-established port with a significant handling capacity and is located close to the windfarm. As such, Belfast fulfils some of the criteria that SPR considers when arriving at a list of potential port options for an offshore windfarm project.

Belfast is a potential area for the development and construction base for MachairWind. Consequently, the development could generate quantitative economic impact in Belfast through:

- Spending in the supply chain in Belfast to support development and construction activities;
- Investing in port redevelopment to support activities; and
- Recruiting transient workers who will spend in the area.

### 12.2.1 Development and Construction

Based on the current industrial capabilities of Belfast, it was estimated that of the total expenditure associated with the activities taking place in the local area, 81% would occur in Belfast. This is equivalent to £116.5 million over the expected three year construction period. However, in the long term, the establishment of a development and construction base may allow the development of the supply chain capabilities of the area, allowing an increase in the share of spend awarded to contractors in Belfast during the development and construction phase.

It was determined that development and construction supply chain spending in the local area could support 1,337 years of employment, equivalent to 446 jobs each year of construction.

### 12.2.2 Port Investment

The share of expenditure awarded to companies based in the local area was estimated based on the current industrial structure in the travel to work area associated with Belfast. It was determined that Belfast could benefit from 100% of investment associated with port expansion, meaning £1.0 million is likely to be awarded to contractors based in the local area.

It was estimated that £1.0 million of investment could support 16 jobs in in the area.

### 12.2.3 Transient Worker Impact

Based on the current industrial structure of Belfast's travel to work area, it was estimated that 19% of workers engaged in development and construction activities, would be transient, and 0% of workers involved in port expansion would be transient.

It was therefore estimated that 65 transient workers would be required for development and construction in Belfast, with total staff costs of £7.3 million over the three year construction period. It was assumed that transient workers would spend 60% of their salaries in Belfast.

It was estimated that the spending of transient development and construction workers could generate 41 jobs in Belfast.

## 12.3 Conclusions

The Belfast Harbour, a significant waterfront regeneration site with extensive land holdings, presents opportunities for housing development to support the city's growth vision. A

MachairWind construction base at Belfast port could draw from a wide labour market, benefiting from the city's strategic location.

Locating the base in Belfast aligns with city initiatives, including the Belfast Region City Deal and the Belfast Agenda, contributing to economic regeneration. The development also offers a chance to enhance the city's commitment to reducing carbon emissions through engagement with climate commissions. Belfast Harbour's importance to the economy makes it an attractive location for infrastructure development, supported by Invest Northern Ireland and Belfast City Council's City Investment Service.

A summary of the quantitative and wider economic impacts of MachairWind on Belfast is provided below.

### Belfast – in scope to host a construction facility

**Development and Construction:**

£116.5 million spend in local supply chain

1,337 job years (446 jobs each year of construction phase)

**Port Investment:**

£1.0 million investment:

£1.0 to local contractors, 16 jobs

**Transient Worker Impact:**

Construction - 65 transient workers per year, £7.3 million staff costs, 41 jobs

# 13. Conclusions

MachairWind is an important offshore wind development lying off the west coast of Scotland, the closest of Scotland's projected offshore developments to the rural and island communities of Argyll and Bute. Decisions are yet to be made about the location of the construction phase and O&M phase of MachairWind. Several communities are in scope to play host to each of these activities, and SPR is keen to understand what difference they might make to each place, as well as how it can best enhance the benefits and mitigate the impacts that will land there.

The quantitative economic impacts that arise vary by location. The estimated economic benefits outlined in this report were in part informed by the current industrial structures of the potential host communities. In areas where employment in relevant sectors, such as construction, were relatively low, it is expected that the local impacts would be smaller than in areas with relatively high employment in these sectors. This is because the areas where these sectors are underrepresented, such as Campbeltown and Machrihanish, would currently be less able to supply the direct workers required for the development. This results in a smaller share of expenditure going towards businesses located in the local area, and therefore smaller indirect impacts along the local supply chain, resulting in a lower overall impact. However, the presence of a construction base or operation and maintenance base has the potential to support the development of a stronger local supply chain, enabling local areas to maximise the opportunities created by project.

Wider impacts in the small and rural locations of Argyll and Bute and in the Western Isles also vary by what might happen in response to the development of this new economic activity in such small communities. There are several moving parts to be considered - SPR's onshore activity, demographic changes, including people returning to their home community to capture employment benefits, the extent of transient labour required to locate in the area, responses by and collaboration with housing authorities. This means that the quantitative and qualitative benefits that could be created are different than one might expect where there is a larger local labour market and fewer constraints on infrastructure development to support the population.

It is noteworthy that housing is an issue raised in every Highland and Island location included in this study. The housing situation in Argyll and Bute and in the Western Isles is described by our consultees as a crisis, and Argyll and Bute Council declared a housing emergency in June 2023. This poses an existential threat to the habitability of these places, and the local authorities involved are working hard with partners in the public sector and with employers to solve the challenges they face. The Council hosted an Argyll and Bute Housing Summit in November 2023 with key stakeholders, which aimed to identify solutions and interventions to mitigate the housing emergency. The consultations for this study highlighted several opportunities for collaboration with SPR and other employers, already ongoing, which provide mutual benefit for employers, workers, and communities. There is great potential here for SPR to create wide ranging benefits for the long-term sustainability and habitability of host communities.

For the rural communities included in the study, there are also meaningful benefits to be secured from capturing sustainable long term employment opportunities, supporting economic resilience, skills development, and community and individual well-being.

Onshore development at Hunterston and also at Belfast brings a different type of benefit. The regional economy in these places is less fragile, and the offshore wind sector holds potential to strengthen regional economic growth in the marine economy.

Consultees for this study reflected positively on the economic and social benefits that could be created by MachairWind, and SPR's commissioning of such a study was heartily welcomed. Indeed, the focus of this study and its exploration of opportunities to enhance benefits in fragile communities fits well with the Governance and Sustainability Principles of the Iberdrola Group, of which SPR is part[8]. The Group's purpose includes the Board's commitment to fighting for "more accessible conditions of well-being for all, and the creation of a society that favours inclusion, equality, equity and development" and in doing so it will "support initiatives that contribute to a more healthy, egalitarian and just society".

This reflects the notion of a "just transition" which empowers local communities and strengthens local economies to ensure that national social, economic and climate goals are delivered together. Scotland's Climate Change Act 2019 embeds the principles of a "just transition"[9]. A successful transition to net zero will therefore need to be underpinned by a strengthening of social partnerships in Scotland, with Government, business, and communities coming together towards a shared goal. As part of delivering this just transition, it is vital to consider the important link between industry and place, and utilise opportunities to promote social partnership, ensuring that local communities feel the transition to net zero is being done with them and for them, rather than to them.

In order to ensure a just transition to net zero, there is merit in supporting local areas to develop their economy, allowing them to take advantage of more opportunities in the long term. This is an important consideration for MachairWind, where there are clear opportunities for SPR to drive benefits into places whose fragile economies are threatened, creating a legacy that can showcase the principles of a just transition on an international stage.

This study has brought attention to the challenges and opportunities associated with establishing MachairWind's O&M and construction facilities in places where there are some aspects of economic fragility. The rationale for addressing these lies not just in the Governance and Sustainability Principles of the Iberdrola Group, but also in the potential commercial benefits that arise from establishing a deep and mutually beneficial relationship with host communities. Commercial benefits include fostering stronger local supply chains, with close inter-relationships and support networks across its businesses. Local government partners have already demonstrated their alignment with the potential benefits, fostering creative solutions to employers' challenges for the greater good of their areas. Finally, people in Scotland are hungry for opportunities for training and employment that allows them to stay, return or move to some of the remote communities associated with this development, ensuring a dedicated and engaged workforce in those places. Ultimately, these commercial advantages contribute to both economic growth and social well-being, creating a win-win situation for the host communities and MachairWind alike, should SPR choose to locate its activities in the Highlands and Islands.

[8] The Governance and Sustainability System is a distinctive feature of Iberdrola, which was a pioneer in the development of its own internal regulations, initially called the Corporate Governance System https://www.iberdrola.com/corporate-governance/governance-sustainability-system

[9] Just Transition Commission,The Scottish Government. https://www.gov.scot/groups/just-transition-commission/.

# 14. Appendix 1: Qualitative Method

A series of consultations were held with people in each place considered by this study.

The research method acknowledges the importance of incorporating the perspectives and experiences of community members to gain a comprehensive understanding of MachairWind's influence on different aspects of their lives. By using qualitative techniques, this study aimed to capture rich and nuanced data, allowing for a deeper understanding of the communities' perceptions about the impacts of the development.

## 14.1 Qualitative Research Objectives

- To explore community members' attitudes and concerns regarding the activities required for the construction and operation of MachairWind.
- To identify the perceived social and economic impacts of MachairWind in each place.
- To identify strategies to mitigate any negative impacts and enhance positive outcomes of MachairWind's construction and operation.

## 14.2 Sampling Strategy

Purposeful Sampling: We identified and selected community groups with members that represent the places considered within the study. Additional consultees included public and private sector organisations with an interest in the economic and/or social resilience of those places. A list of consultees is provided at the end of this section. A stakeholder mapping exercise was undertaken to identify relevant individuals for each group.

In addition, attendance at open supply chain events allowed a more random approach to interaction with people from companies in the supply chain:

- DeepWind Supply Chain Roadshow – Campbeltown, 21st June 2023; and
- DeepWind Supply Chain Roadshow - Oban, 6th July 2023.

## 14.3 Data Collection

Qualitative data was collected in two ways:

1. Document Analysis: Reviewing relevant documents such as local news articles, official reports, community development plans and public records to gather contextual information and identify emerging themes.
2. In-depth Interviews: Individual interviews with community group members to gather detailed narratives about their experiences, perceptions, and concerns related to MachairWind.

## 14.4 Data Analysis

Two analytical methods were applied to the qualitative data:

1. Thematic Analysis: Interview transcriptions/notes were analysed using thematic coding techniques to identify patterns, recurring themes, and key findings related to MachairWind's impacts.
2. Cross-case Analysis: Data was compared and contrasted across different community groups to identify similarities, differences, and unique perspectives.

## 14.5 Ethical Considerations

The ethical underpinnings of the research included:

- Informed Consent: Obtaining informed consent from all participants, ensuring they understood the purpose, risks, and benefits of their involvement in the research.
- Confidentiality and Anonymity: Safeguarding the personal information and attribution of views of participants through anonymisation and secure data storage practices.
- Respect for Autonomy: Allowing participants to withdraw from the study at any time without repercussions.
- Researcher Reflexivity: Researcher reflexivity refers to the process by which researchers critically reflect on their own background, biases, assumptions, and values that may influence the research process and the interpretation of data. For this study the researchers maintained reflexivity throughout the research process to minimise potential biases during data collection and analysis.

## 14.6 Consultees

The sample of consultees for this study is diverse and representative of various sectors and stakeholders, encompassing a total of 28 participant groups/organisations, with several individual consultations held with members of some of these organisations. 41 organisations were invited to contribute their views to the study, which has secured engagement from 68% of those invited.

Among the consultees are 10 representatives from Public Sector Bodies, including officials from HIE, Argyll and Bute Council, Comhairle nan Eilean Siar, and Belfast City Council, with key roles in projects, partnerships, regeneration, housing and infrastructure development. Additionally, there were three Community Councils, and two schools, including both teaching staff and groups of pupils. The study also engaged with 13 third sector or other organisations, including businesses, with an interest in individual places.

In all, 40 people were included in these conversations.

Finally, our research team attended two supply chain events with over 60 businesses present. Conversations were held with several people attending.

### 14.6.1 Public Sector Bodies:

- HIE (Head of Projects and Partnerships)
- Argyll and Bute Council (Transformation Projects and Regeneration Manager)
- HIE (Head of Social Enterprise Development)
- Argyll and Bute Council (Team Lead - Housing Strategy)
- Argyll and Bute Council (Rural Growth Deal Programme Manager)
- Skills Development Scotland

- Scottish Government's Islands Team (Repopulation and Island Communities Policy Manager)
- Argyll and Bute Council (Head of Economic Development and Strategic Transportation)
- CMAL (Senior Civil Engineer and Project Manager for Port Ellen Terminal Development)
- Comhairle nan Eilean Siar (Director Environment)
- Belfast City Council (Enterprise & Business Growth, Place & Economy)

### 14.6.2 Community Councils:

- Islay Community Council
- Nigg and Shandwick Community Council
- Lochcarron Community Council & Lochcarron Community Development Trust

### 14.6.3 Schools:

- Islay High School (Head Teacher/Student Support Teacher/S6 Students)
- Oban High School (Engineering and Construction Foundation apprenticeship teacher/Mixed year group student Eco-committee)

### 14.6.4 Third sector/other organisations:

- Islay Energy Trust
- South Islay Development
- Colonsay Community Development Company
- Jura Development Trust
- Argyll and Bute Renewables Alliance
- Machrihanish Airbase Community Company (MACC)
- Kishorn Community Trust
- Western Isles Development Trust
- Peel Ports
- Ferguson Transport & Shipping
- Global Energy Group

# 15. Appendix 2: Quantitative Method

The methodology followed in estimating quantitative impacts for each area and sources for underlying economic assumptions.

## 15.1 Methodology

### 15.1.1 Metrics of Assessment

The primary metrics of quantitative assessment used in this report are:

- Years of employment: this is a measure of employment which is equivalent to one person being employed for an entire year and is typically used when considering time bound employment impacts, such as those associated with construction; and
- Jobs: this is a measure of employment which considers the headcount employment in an organisation or industry.

### 15.1.2 Types of Impact

The economic impacts associated with the development and capital expenditure are time bound impacts, whereas operational expenditure delivers long-term impact.

Each activity expected to occur in the study areas were assigned an industrial sector from the UK's Standard Industrial Classification (SIC) codes. Based on these sectors, economic ratios and multipliers were derived, which were then used to estimate economic impacts.

There are three types of economic impact associated with similar developments:

- direct impact: this is the direct impact associated with Tier 1 suppliers, including employing and paying staff, and generating profits. This impact is calculated by dividing the expenditure on a contract by the turnover/employee ratios for the relevant sectors to estimate the direct employment impacts[10];
- indirect impact: this is the impact associated with spending in the supply chain of Tier 1 suppliers. This is captured by applying Type 1 economic multipliers[11] to the direct economic impacts; and
- induced impact: this is the impact associated with staff spending their wages in the wider economy, and is captured by subtracting Type 1 multipliers from Type 2 multipliers, and applying this to the direct impact.

## 15.2 Estimating Expenditure

### 15.2.1 Development and Construction Expenditure

The first step in estimating expenditure on the activities taking place in the local area is considering the total level of investment. The developer provided estimates of total capital

[10] ONS (2020), Annual Business Survey 2018 Revised
[11] ONS (2019), UK Economic Multipliers 2015

expenditure as part of its latest Supply Chain Development Statement (SCDS) submission[12] and the activities it was expected would take place at the chosen construction base. In the SCDS, the developer committed to spending £1.8 billion in Scotland across the development and construction phases, equivalent to 30% of the total capital expenditure.

**Table 15-1 MachairWind Forecast Expenditure Commitment**

| | Scotland | Rest of UK | EU |
|---|---|---|---|
| Development (Millions) | £234.1 | £58.5 | - |
| Manufacturing and Fabrication (Millions) | £577.5 | £1,124.6 | £1,937.5 |
| Installation (Millions) | £1,004.1 | £152.2 | £902.7 |
| Operation (Millions) | £ 304.4 | £60.9 | £40.6 |

Source: Machair Wind Limited (April 2023) Supply Chain Development Statement Outlook

The share of total expenditure accounted for by each activity taking place at the construction base then estimated based on the shares of spending for similar offshore wind developments. In this way, it was estimated that approximately 8.9% of total Scottish development and construction expenditure be spent on activities taking place in the chosen local area.

**Table 15-2 Construction Base Expenditure, £ million**

| | Spend (£ million) | Share of Scottish Total |
|---|---|---|
| Assembly | £65.9 | 3.6% |
| Berthing of Vessels | £25.8 | 1.4% |
| Construction | £25.7 | 1.4% |
| Storage | £14.8 | 0.8% |
| Marshalling | £7.4 | 0.4% |
| Staging | £3.7 | 0.2% |
| Total | £143.2 | 7.9% |

Note: Totals may not sum due to rounding.

### 15.2.2 Operation and Maintenance Base Supply Chain Expenditure

The developer provided estimates of total operational spend, and information on the activities which are likely to take place at the operational base. In a similar way to development and construction spending, the share of total expenditure accounted for by each activity was then estimated using data on spending patterns of similar developments. In this way, it was estimated that approximately 1.3% of total operational supply chain expenditure would be spent to enable activities taking place at the operation and maintenance base in the chosen local area.

[12] Machair Wind Limited (April 2023) Supply Chain Development Statement Outlook

**Table 15-3 Operation and Maintenance Base Expenditure, £ million**

| | Spend (£ million) | Share of Total |
|---|---|---|
| Berthing of Vessels | 0.7 | 1.1% |
| Storage | 0.1 | 0.1% |
| Total | 0.8 | 1.2% |

Note: Totals may not sum due to rounding.

## 15.3 Local Development and Construction Impact

Having estimated the size of the contracts that could benefit the local areas, it was then possible to consider the employment that these could support. Each contract category was split into its component contracts and assigned relevant industrial sectors, based on SICs[13].

It was then possible to estimate the number of direct jobs supported by spending in development and construction contracts by dividing expenditure in each contract by the turnover per job ratios for the relevant sectors taken from the UK Annual Business Survey (ABS)[14].

To estimate indirect (supply chain spending) and induced (staff spending) impacts, the 'knock-on' effects generated across the economy by spending associated with development and construction contracts, it was necessary to apply the relevant Type 1 and Type 2 GVA multipliers from the Scottish Government Input-Output Tables[15] and UK Government Input-Output Tables[16] to direct GVA. Since the multipliers refer to sectoral interactions occurring at the level of the national economies, it was necessary to adjust them to account for the potential impacts that could take place in each local area.

Accounting for direct, indirect and induced effects, it was estimated that the development and construction impact of Machair Wind could generate:

- 117 years of employment in Campbeltown and Machrihanish;
- 1,155 years of employment in Clyde Coast;
- 800 years of employment in Arnish;
- 526 years of employment in Kishorn;
- 950 years of employment in Nigg; or
- 1,337 years of employment in Belfast.

## 15.4 Local Operational Impact

The developer provided estimates of the number of people who will be employed to run the operational base in the chosen local area, as well as the type of work involved at the operations base. Each area of work was assigned relevant industrial sectors, based on SICs[17], and expected

[13] Office for National Statistics (ONS) (2009), SIC of industrial Activities 2007.
[14] ONS (2020), Annual Business Survey 2018 - Revised.
[15] Scottish Government (2020), Supply, Use and Input-Output Tables.
[16] ONS (2019), UK Economic Multipliers 2015
[17] ONS (2009), SIC of industrial Activities 2007.

staff costs were estimated using the average staff costs per job as outlined in the UK ABS[18]. On this basis, it was estimated that 60 direct jobs created in the local area would result in staff costs of £2.7 million each year. Induced impacts are generated by the spending of these workers in the local area, and are calculated by applying Type 2 employment multipliers, determined by the sectors of the operational jobs.

As well as employing staff directly, the operational base will create impact locally through spending in the supply chain. Having estimated potential expenditure in the local area associated with each activity based on the industrial structure of each area, direct impacts are then generated by dividing spending by the relevant turnover/employee ratio associated with each sector.

As with the development and construction phase, it was then necessary to estimate the indirect and induced impacts associated with O&M contracts by applying multiplying direct employment by the relevant Type 1 and Type 2 employment multipliers, determined by the sectors associated with operational activities and the jobs at the O&M base.

Together, the operational impact generated by direct operational jobs and operational spending in the supply chain has the potential to generate an annual:

- 64 jobs in Islay;
- 68 jobs in Oban;
- 62 jobs in Campbeltown and Machrihanish; or
- 71 jobs in Clyde Coast.

## 15.5 Port Investment

There is the potential for investment in the local ports to enable the activities required for the development and construction and operational phases to occur in each local area. The extent of potential development is not yet known, and so impacts were calculated using a baseline expenditure of £1.0 million.

As with development and construction impacts, the activities associated with upgrading ports in local areas were assigned relevant industrial sectors, based on SICs[19]. Then assumptions were made about the share of associated contracts each study area is likely to secure based on the industrial capabilities of each area.

Direct jobs supported by spending on port investment were then estimated by dividing expected expenditure on each contract by the turnover per job ratios for the relevant sector, and indirect and induced impacts were estimated by multiplying direct employment by the relevant Type 1 and Type 2 employment multipliers. In this way, as shown in the table below, it was estimated that, for every £1 million spent on redeveloping ports in each area, this could generate:

- 2 jobs in Islay;
- 7 jobs in Oban;
- 1 job in Campbeltown and Machrihanish;
- 12 jobs in Clyde Coast;

[18] ONS (2020), Annual Business Survey 2018 - Revised.
[19] ONS (2009), SIC of industrial Activities 2007.

- 4 jobs in Arnish;
- 3 jobs in Kishorn;
- 11 jobs in Nigg; or
- 16 jobs in Belfast.

## 15.6 Impact of Transient Workers

In addition to the local workers, the non-local workforce staying in the area during construction would be expected to have an economic impact as they spend part of their wages in the local area.

The share of jobs accounted for by transient workers was estimated based on the industrial structure of each local area. Staff costs associated with transient workers were estimated using the average staff cost per job for the relevant sector of each activity, derived from the UK ABS[20]. A 20% premium was applied to average staff costs to account for the additional incentive required by transient workers to work away from home.

Assumptions were made about the share of their salary transient workers were likely to spend in each local area. The goods and services workers were likely to spend on in the local area, and the share of total expenditure each area of spend was likely to account for was informed by analysis of spending patterns, with the majority of transient worker expenditure expected to go towards housing, food, and leisure. These areas of spend were assigned relevant sectors based on SICs, and direct employment impacts were calculated by dividing the total spend in each sector by the relevant turnover/employment ratio. Induced impacts which account for the jobs created when workers spend their salaries were then calculated by multiplying direct jobs by relevant Type 2 employment multipliers.

In this way, it was estimated that the spending of development and construction transient workers could support:

- 134 jobs in Campbeltown and Machrihanish;
- 50 jobs in Clyde Coast;
- 61 jobs in Arnish;
- 80 jobs in Kishorn;
- 41 jobs in Nigg; or
- 34 jobs in Belfast.

It was estimated that the spending of operation and maintenance transient workers could support:

- <1 job in Islay;
- <1 job in Oban;
- <1 job in Campbeltown and Machrihanish; or
- <1 job in Clyde Coast.

It was estimated that the spending of port expansion transient workers could support:

[20] ONS (2020), Annual Business Survey 2018 - Revised.

- 1 job in Islay;
- 1 job in Oban;
- 1 job in Campbeltown and Machrihanish;
- <1 job in Clyde Coast;
- 1 job in Arnish;
- 1 job in Kishorn; or
- <1 job in Nigg.

## 15.7 Housing Construction Impact

### 15.7.1 Islay and Kishorn

Through the quantitative research process, it was established that some areas would require the construction of accommodation to house transient workers in the local area.

Potential spending on accommodation for transient workers was sourced from the Mull and Iona Key Worker Housing Report[21], which outlines the average cost of different types of temporary accommodation built to house transient or temporary workers. It was therefore estimated that expenditure on temporary housing could amount to between £35,750 per person and £66,750 per person, depending on the type of accommodation built. The number of transient workers who would require accommodation to be built was estimated based on the current housing market in the relevant local areas.

To understand where economic activity will occur, assumptions were made about the share of associated contracts each area is likely to secure. This was based on the economic structure of each study area. Spending that was likely to occur in the local area was assigned relevant industrial sectors, and the direct impact was calculated by applying the relevant turnover/employment ratio, with indirect and induced impacts estimated by applying the relevant Type 1 and Type 2 employment multipliers.

In this way, it was determined that the construction of housing for temporary workers could generate:

- Between 2 and 3 jobs in Islay; and
- Between 28 and 55 jobs in Kishorn.

### 15.7.2 Campbeltown and Machrihanish

Through the consultation in Campbeltown and Machrihanish, it was determined that, while the area would not require additional accommodation to be built, existing accommodation at the decommissioning Air Force base, RAF Machriahanish, could provide housing to transient workers. A refit of the accommodation to allow it to house transient workers is expected to cost £1.0 million.

As with Islay and Kishorn, assumptions were made about the share of associated contracts Campbeltown and Machrihanish is likely to secure based on the current economic structure of the study area. Areas of expenditure were then assigned industrial sectors, and the direct impact was calculated by applying the relevant turnover/employment ratio, with indirect and

[21] Mull and Iona Community Trust (2022), Mull and Iona Key Worker Housing

induced impacts estimated by applying the relevant Type 1 and Type 2 employment multipliers. In this way, it was determined that a refit of housing for temporary workers could generate:

- 2 jobs in Campbeltown and Machrihanish

BiGGAR Economics, Shandwick House,
67 Shandwick Place, Edinburgh, Scotland EH2 4SD

info@biggareconomics.co.uk

biggareconomics.co.uk




ScottishPower
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