Vale of Leven Wind Farm Limited

Vale of Leven Wind Farm

Environmental Impact Assessment Report (Volume 1)

Chapter 12 – Socio-economics

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CONTENTS

TABLES

FIGURES

12 SOCIO-ECONOMICS

12.1 Introduction

12.1.1 This chapter considers the potential socio-economic impacts associated with the Proposed Development. The assessment of socio-economic benefits is based on the Proposed Development featuring ten turbines for a total combined generating capacity of around 70 MW and around 20 MW of battery storage (BESS).

12.1.2 The Proposed Development will generate economic benefits, both during its construction, and during the operation and maintenance phase.

12.1.3 During construction the economic benefits that are expected are:

- £4.2 million Gross Value Added (GVA) and 54 years of employment in West Dunbartonshire; and
- £20.7 million GVA and 322 years of employment in Scotland.

12.1.4 The expenditure for the operation and maintenance of the Proposed Development could deliver up to:

- £0.4 million GVA and two jobs in West Dunbartonshire; and
- £1.6 million GVA and 17 jobs in Scotland.

12.1.5 The Applicant is committed to maximising the economic benefits of the Proposed Development. Activity to support this to date has included joining Dunbartonshire Chamber of Commerce and working with the Chamber to identify local businesses who could be suppliers. The Applicant will also work with the Chamber to organise Meet the Buyer Events, to ensure that local businesses are aware of the opportunities and how to capitalise on them.

12.1.6 The Proposed Development will also support local government's revenue through the annual payment of £0.8 million in non-domestic rates.

12.1.7 The Applicant is committed to supporting the long-term ambitions of local communities through local community benefits, worth an estimated £14.4 million over the 40 year operational lifetime of the Proposed Development. This fund would be expected to support economic activity in local communities, the scale and nature of which will depend on what the community decides to use the funding for.

12.1.8 The Applicant is also committed to offering shared ownership of the Proposed Development, allowing the community the opportunity to invest in and have a share of the wind farm.

12.1.9 Based on the range of community and economic benefits expected, as considered below, it can be concluded that the Proposed Development maximises net economic impact.

12.2 Scope and Methodology

Legislation, Policy and Guidance

12.2.1 Policy 11 of the Scottish Government's National Planning Framework 4 (NPF4) (Scottish Government, 2023) is relevant to the socio-economic impact of the Proposed

Development. Paragraph (c) states that "*development proposals will only be supported where they maximise net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities*". This assessment includes a conclusion on whether the project maximises the net economic impact in the context of NPF4 Policy 11(c). The Planning and Sustainable Place Statement includes a full discussion of this and other relevant policies.

12.2.2 There is no specific legislation, policy or guidance available on the methods that should be used to assess the socio-economic impacts of a proposed onshore wind farm development. Nor is there any specific guidance on maximising net economic impact in the context of NPF4.

12.2.3 However, the Onshore Wind Policy Statement 2022 identifies a number of potential benefits to communities and to Scotland, including community benefit, shared ownership and opportunities for the Scottish supply chain. These potential benefits are considered in this chapter.

Study Area

12.2.4 The analysis of the socio-economic effects from the Proposed Development considered the following study areas:

- West Dunbartonshire, as defined by the local authority area; and
- Scotland as the national study area.

12.2.5 In addition, where relevant the area that is expected to receive community benefit funds has been considered in the baseline.

Desk Study

12.2.6 The following data sources have been used in characterising the baseline:

- Office for National Statistics (ONS) (2023), Annual Population Survey 2022;
- ONS (2023), Annual Survey of Hours and Earnings 2022;
- National Records of Scotland (2022), Mid-Population Estimates 2021;
- National Records of Scotland (2020), Sub-National Population Projections 2018-2043;
- Scottish Government (2021), Scottish Index of Multiple Deprivation 2020;
- Scottish Government (2018), National Performance Framework;
- Scottish Government (2023), National Planning Framework 4;
- Scottish Government (2022), National Strategy for Economic Transformation; and
- West Dunbartonshire Council (2022), Council Strategic Plan 2022-2027.

Assessment of Socio-Economic Effects

12.2.7 Given that no specific legislation or guidance is available on the methods which should be used when assessing the socio-economic effects of a proposed wind farm development for an Environmental Impact Assessment (EIA), the identification and assessment of the significance of predicted socio-economic effects has been based on professional judgement on the degree of change resulting from proposals using methods commonly used in EIAs for proposed renewable energy developments.

12.2.8 The assessment of economic impacts was undertaken using a model that has been developed by BiGGAR Economics specifically to estimate the socio-economic effects of on shore wind farm developments in the UK, including in Scotland. In particular this assessment draws on two studies by BiGGAR Economics on the UK onshore wind energy sector, including a report published by RenewableUK and the then Department for Energy and Climate Change (DECC) in 2012 on the direct and wider economic benefits of the onshore wind sector to the UK economy (Department of Energy and Climate Change, RenewableUK, 2012) and a subsequent update to this report published by RenewableUK in 2015 (RenewableUK, 2015).

12.2.9 The evidence collected in those studies is frequently reviewed and updated by BiGGAR Economics, based on its most recent experience working with wind farm developers. Evaluations of costs and the extent to which contracts are carried out in Scotland and within local authority areas, as well as experience working with developers elsewhere in Scotland, have all contributed to this assessment.

12.2.10 The units of measurement which are used to quantify the economic impacts of the Proposed Development are:

- Gross Value Added (GVA): this is a measure of the economic value added by an organisation or industry;
- Job years: this is a measure of employment which is equivalent to one person being employed for an entire year and is typically used when considering the short-term 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.

12.2.11 To begin estimating the economic impact supported by the Proposed Development, it was first necessary to calculate the expenditure during the construction, operation and maintenance phases. The total expenditure figure was then divided into its main components using calculated assumptions regarding the share that could be expected by main and sub-contractors. This provides an estimate for each main component that could be secured in West Dunbartonshire and in Scotland.

12.2.12 There are three sources of economic impact:

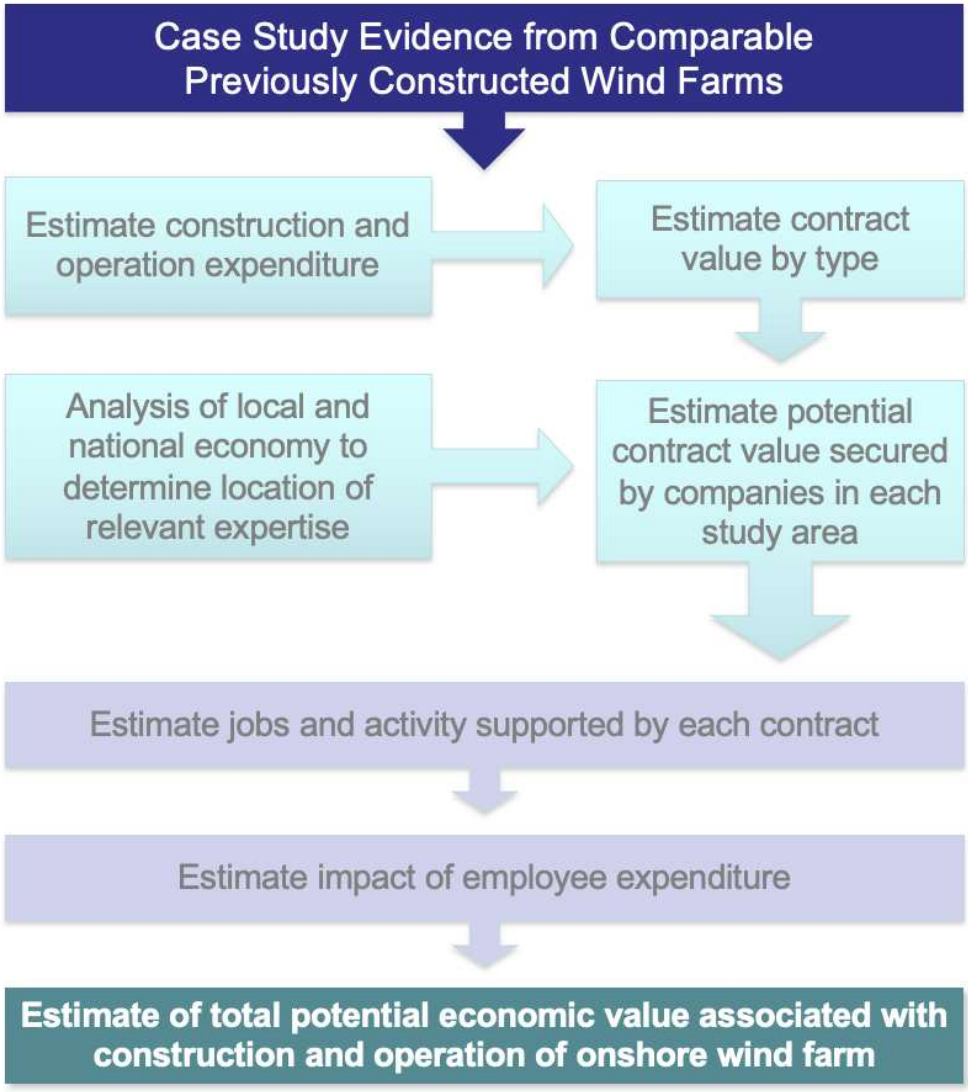
- component contracts and the jobs they support;
- wider spending in the supply chain (indirect effect); and
- spending of people employed in these contracts (induced effect).

12.2.13 There are four key stages of this model, which are illustrated in **Figure 12.1** below:

- estimation of the capital and operational expenditure;
- estimation of the value of component contracts that make up total expenditure;
- assessment of the capacity of businesses in the study area to perform and complete component contracts; and
- estimation of economic impact from resultant figures.

12.2.14 The decommissioning phase of the Proposed Development would also be expected to generate economic benefits. However, given that this phase will be several decades into the future, these benefits have not been assessed.

Figure 12.1: Approach to Economic Impact Assessment



Assessment of Significance

Sensitivity

12.2.15 Sensitivity has been determined on the basis outlined in **Table 12.1**.

Table 12.1: Sensitivity Criteria

Sensitivity	Description
Very high	The asset/economy has little or no capacity to absorb change without fundamentally altering its present character and/or is of very high socio-economic value, or of national importance.
High	The asset/economy has low capacity to absorb change without fundamentally altering its present character and/or is of high socio-economic value, or of importance to Scotland.
Medium	The asset/economy has moderate capacity to absorb change without substantially altering its present character, has some socio- economic value and/or is of regional importance. For example, it makes a significant contribution to the regional economy.
Low	The asset/economy is tolerant to change without alteration to its character, has low socio-economic value, or is of local importance.
Negligible	The asset/economy is resistant to change and/or makes a limited socio-economic contribution.

Magnitude of Change

12.2.16 Magnitude of change has been determined on the basis outlined in **Table 12.2**.

Table 12.2: Magnitude of Change Criteria

Magnitude of Change	Description
High	Major loss/improvement to key elements/features of the baselines conditions such that post development character/composition of baseline condition will be fundamentally changed. For example, a major long-term alteration of socio-economic conditions.
Medium	Loss/improvement to one or more key elements/features of the baseline conditions such that post development character/composition of the baseline condition will be noticeably changed. For example, a moderate alteration of socio-economic conditions.
Low	Changes arising from the alteration will be detectable but not material; the underlying composition of the baseline condition will be similar to the pre-development situation. For example, a small alteration of the socio-economic conditions.
Negligible	Very little change from baseline conditions. Change is barely distinguishable, approximating to a “no change” situation.

Significance

12.2.17 The predicted significance of the effect was determined through a standard method of assessment based on professional judgement, considering both sensitivity and magnitude of change (**Table 12.3**). Major and Moderate effects are considered significant in the context of the EIA Regulations.

Table 12.3: Significance Criteria

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

12.3 Consultation Undertaken

12.3.1 There were limited scoping responses related to socio-economics.

12.4 Strategic Economic Context

Scotland's National Performance Framework

12.4.1 Scotland's National Performance Framework, first published in 2018 (Scottish Government, 2018) sets out the ambitions of the Scottish Government to provide a vision for national wellbeing across a range of economic, social and environmental factors. The framework includes 'increased well-being' as part of its purpose and combines measurement of how well Scotland is doing in economic terms with a broader range of well-being measures. The National Performance Framework is designed to give a more rounded view of economic performance and progress towards achieving sustainable and inclusive economic growth and well-being across Scotland. The aims for Scotland set out in the National Performance Framework are to:

- create a more successful country;
- give opportunities to all people living in Scotland;
- increase the well-being of people living in Scotland;
- create sustainable and inclusive growth; and
- reduce inequalities and give equal importance to economic, environmental and social progress.

12.4.2 The National Performance Framework also sets out outcomes and indicators which illustrate the progress Scotland is making in achieving the aims of the National Performance Framework. The outcomes outlined in the National Performance Framework are that people in Scotland:

- grow up loved, safe and respected so that they realise their full potential;
- live in communities that are inclusive, empowered, resilient and safe;
- are creative and their vibrant and diverse cultures are expressed and enjoyed widely;
- have a globally competitive, entrepreneurial, inclusive and sustainable economy;
- are well educated, skilled and able to contribute to society;
- value, enjoy, protect and enhance the environment;
- have thriving and innovative businesses, with quality jobs and work for everyone;
- are healthy and active;

- protect and fulfil human rights and live free from discrimination;
- connected and make a positive contribution internationally; and
- tackle poverty by sharing opportunities, wealth and power more equally.

12.4.3 The Proposed Development would contribute to the achievement of the national outcomes set out in the National Performance Framework. Investment in renewable energy can increase productivity in the energy sector, while by creating jobs in the local area the Proposed Development will contribute to inclusivity. It also supports sustainability and the transition to Net Zero, by increasing the generation of renewable energy.

Scotland's National Strategy for Economic Transformation

12.4.4 In March 2022, the Scottish Government released the National Strategy for Economic Transformation (Scottish Government, 2022), which set out its ambition for Scotland's economy over ten years. The Scottish Government's vision is to create a wellbeing economy where society thrives across economic, social and environment dimensions, which delivers prosperity for all Scotland's people and places. Of particular importance is the ambition to be greener, with a just transition to Net Zero, a nature-positive economy and a rebuilding of natural capital.

12.4.5 A key longer term key challenge identified in the strategy is to address deep-seated regional inequality, which includes in rural and island areas that face problems such as a falling labour supply, and poorer access to infrastructure and housing. The transition to Net Zero presents a further challenge of delivering positive employment, revenue and community benefits.

12.4.6 To deliver its vision and address the economy's challenges, five programmes of action have been identified (with a sixth priority of creating a culture of delivery), including:

- establishing Scotland as a world-class entrepreneurial nation;
- strengthening Scotland's position in new markets and industries, generating new, well-paid jobs from a just transition to Net Zero;
- making Scotland's businesses, industries, regions, communities and public services more productive and innovative;
- ensuring that people have the skills they need to meet the demands of the economy, and that employers invest in their skilled employees; and
- reorienting the economy towards wellbeing and fair work.

12.4.7 The strategy notes that Scotland has substantial energy potential and that it has developed a growing green industrial base. This provides a strong foundation for securing new market opportunities arising from the transition to Net Zero. Renewable energy has a role to play in supporting productive businesses and regions across Scotland.

National Planning Framework 4 (NPF4)

12.4.8 NPF4 (Scottish Government, 2023) is Scotland's national spatial strategy, setting out the principles to be applied to planning decisions, regional priorities and national developments.

12.4.9 The first of six spatial principles to be applied is a just transition that ensures the transition to Net Zero is fair and inclusive, as is rural revitalisation, supporting sustainable

development in rural areas. Applying these and other principles is intended to support the planning and delivery of sustainable places, where emissions reduce and biodiversity is restored and better connected.

12.4.10 As part of the policy 11a, all forms of renewable technologies, including onshore wind and energy storage, will be supported. This is subject to the test outlined in policy 11c, that developments will only be supported where they *'maximise net economic impact including local and community socio-economic benefits such as employment, associated business and supply chain opportunities'.* The Proposed Development will support employment and create opportunities for local businesses at both the construction, and operation and maintenance phases.

12.4.11 There is further discussion of NPF4 in the Planning and Sustainable Place Statement.

Local Energy Policy Statement

12.4.12 The Scottish Government's latest statement on Local Energy Policy highlights the role of localised energy solutions as part of a green recovery from the Covid-19 pandemic and towards a Net Zero and decarbonised economy. The strategy is interlinked with other strategic documents in a concerted effort to increase energy efficiency, reduce emissions, and eradicate fuel poverty.

12.4.13 The statement identifies a wide range of stakeholders involved in local energy and sets out the following key principles:

- People: engaging with stakeholders from the outset and supporting the different ways each of these will want to be involved;
- Places: local energy projects should reflect the features of the local area and work in collaboration with others;
- Network and Infrastructure: consider the existing energy infrastructure in the area and secure high level and quality of supply to all;
- Pathway to Commercialisation: create projects that are commercially viable, can be replicated in the future, and support Net Zero emissions; and
- Opportunity: projects should create high value jobs and support the wider industry and its workforce.

West Dunbartonshire Council Strategic Plan 2022-2027

12.4.14 In October 2022, the West Dunbartonshire Council adopted the Strategic Plan for 2022-2027, which set out its strategic priorities for West Dunbartonshire (West Dunbartonshire Council, 2022). West Dunbartonshire Council's vision is to deliver services which build on the strengths and resilience of its neighbourhoods and to support all residents to fulfil their individual potential and that of their communities.

12.4.15 Of particular priority is the ambition for a greener economy, with greener jobs, while tackling long-standing social challenges affecting the health and wellbeing of low-income families. This includes reducing fuel poverty by improving energy efficiency and further enhancing access to green spaces.

12.4.16 To deliver its vision, three strategic priorities have been identified:

- resilient and thriving communities;
- a greener future; and

- a strong and flourishing economy.

12.4.17 To meet its vision and strategic priorities, nine objectives have been set including:

- neighbourhoods are safe, resilient and inclusive;
- residents' health and wellbeing continue to be prioritised;
- residents are supported to increase life and learning skills;
- the local environment is protected, enhanced and valued;
- resources are used in an environmentally sustainable way;
- neighbourhoods are sustainable and attractive;
- the infrastructure is in place for sustainable and inclusive growth where businesses can flourish;
- residents are supported to access employment and training opportunities; and
- partnerships will support economic development to deliver increased prosperity for our area.

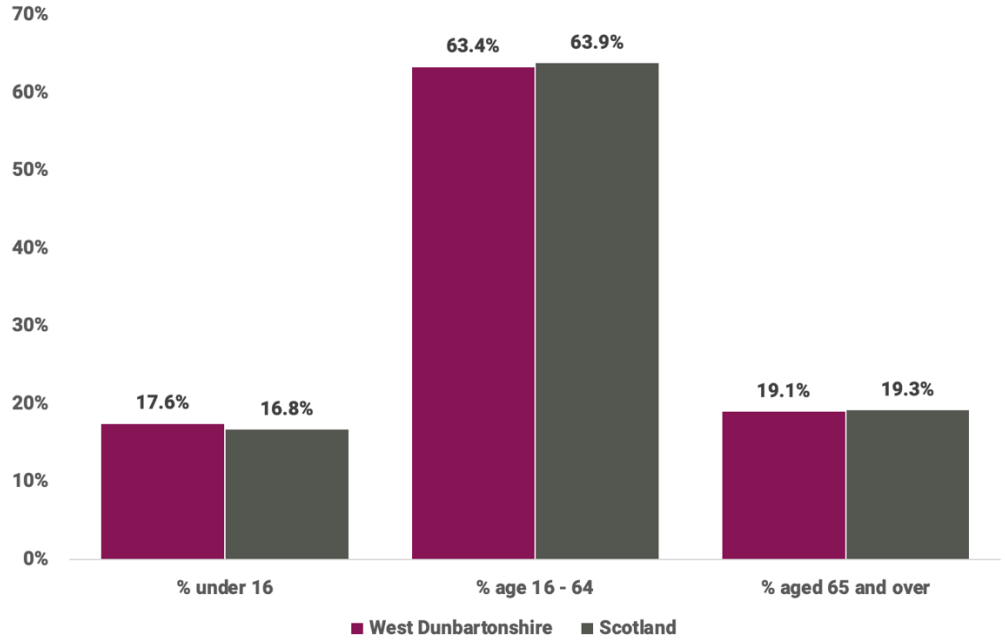
Summary of Strategic Context

12.4.18 The Scottish Government considers the renewable energy sector as a key driver of economic growth, with the potential to make a substantial contribution to economic transformation. The construction and operation of the Proposed Development is aligned locally, regionally and nationally with economic strategies by supporting the creation of sustainable and inclusive growth in West Dunbartonshire.

12.5 Existing Environment

12.5.1 In 2021 the population living in West Dunbartonshire was 87,790, representing around 1.6% of Scotland's population (National Records of Scotland, 2022). The population structure in West Dunbartonshire is similar to Scotland as a whole, with a slightly smaller share of the population aged 16-64 (63.4%, compared to 63.9%).

Figure 12.2: Population structure, 2021

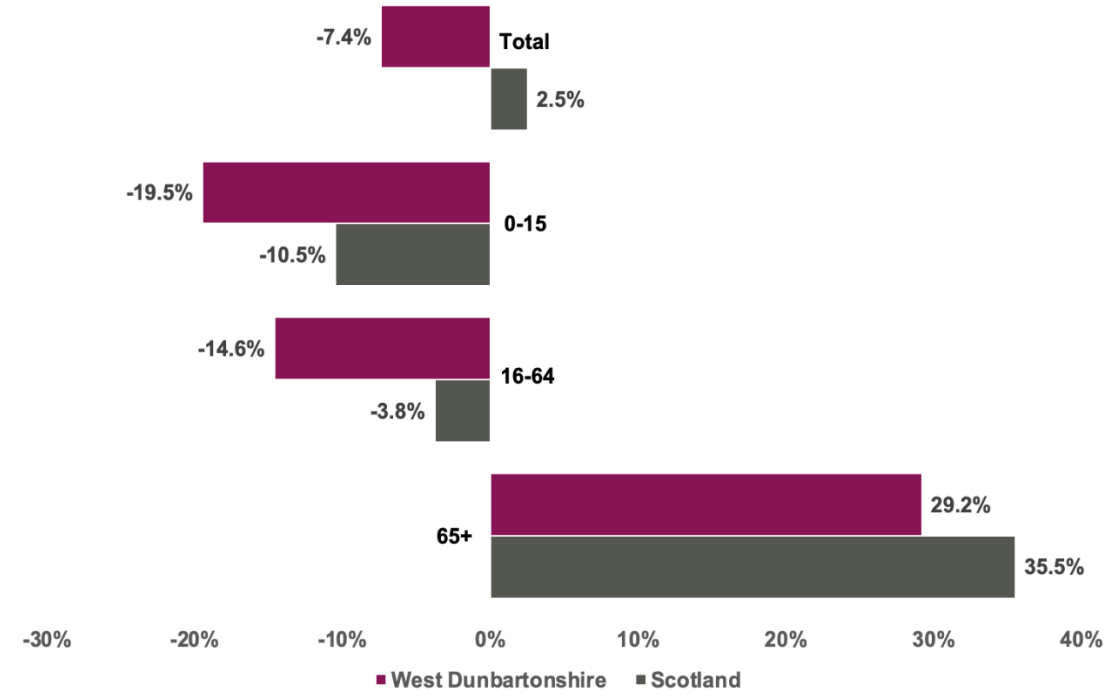


Source: National Records of Scotland (2022), Mid-year Population Estimates 2021.

12.5.2 Compared to the population in 2018, the population of West Dunbartonshire is projected to decrease by 7.4% by 2043, whereas the population of Scotland will increase by 2.5% to almost 5.6 million people (National Records of Scotland, 2020).

12.5.3 The projections for the population structure would see a decrease in West Dunbartonshire's working age population (16-64 year olds) of around 14.6%, suggesting that there is a lack of opportunities to retain and attract working age people within the local authority area.

Figure 12.3: Population structure, 2018-43



Source: National Records of Scotland (2020), Sub-National Population Projections 2018-2043.

12.5.4 As shown in **Table 12.4**, in 2022 the rate of economic activity in West Dunbartonshire was 75.8%, lower than the Scottish rate of 76.5% (ONS, 2023). Unemployment in West Dunbartonshire was lower (2.6%) than that of Scotland (3.5%). The median annual gross pay for full-time workers in West Dunbartonshire was £32,543, compared to £33,332 in Scotland (ONS, 2022).

Table 12.4: Economic Indicators, 2022

	West Dunbartonshire	Scotland
Economic Activity Rate (16-64)	75.8%	76.5%
Unemployment Rate (all economically active)	2.6%	3.5%
Median Annual Full-Time Gross Pay (£)	£32,543	£33,332

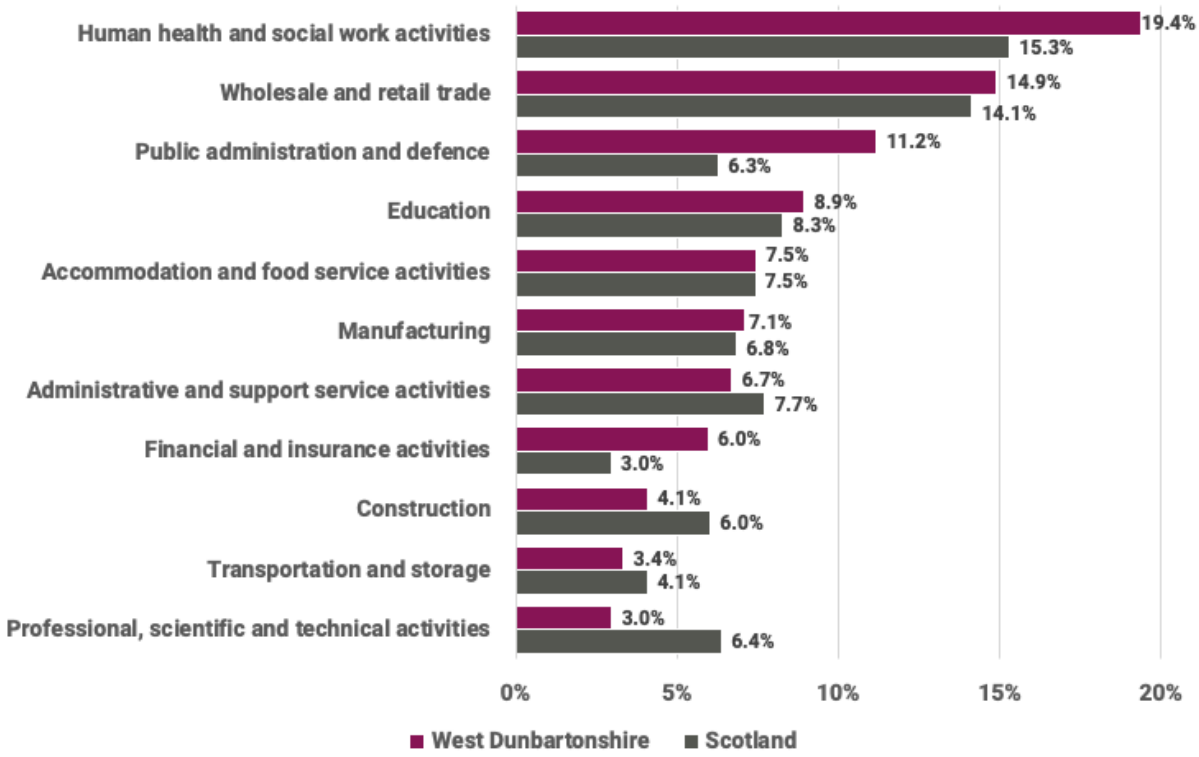
Source: ONS (2022), Annual Population Survey. Office of National Statistics (ONS) (2022), Annual Survey of Hours and Earnings.

12.5.5 Employment in West Dunbartonshire was 33,530 in 2022, equivalent to 1.3% of Scottish employment (and 1.6% of the population). The largest sector of employment in West Dunbartonshire is human health and social activities, accounting for 19.4% of employment, compared to 15.3% in Scotland as a whole (ONS, 2023). The local area has also a higher proportion of people working in the public administration and defence (11.2%) than Scotland as a whole (6.3%).

12.5.6 In West Dunbartonshire the share of employment in the public sector[1] (39.5%), is higher than Scotland as a whole (29.9%), with higher than typical employment in public administration and defence in particular.

12.5.7 West Dunbartonshire has a lower share of the population employed in construction (4.1%), compared to Scotland as a whole (6.0%), as well as a lower share employed in professional, scientific and technical activities (3.0%) compared to Scotland (6.4%).

Figure 12.4: Industrial Structure, 2022



Source: ONS (2023). Business Register and Employment Survey 2022.

Scottish Index of Multiple Deprivation

12.5.8 The Scottish Index of Multiple Deprivation (SIMD) is a relative measure of deprivation which ranks small areas of Scotland across seven dimensions: income, employment, education, health, access to services, crime and housing. These areas can be ranked based on which quintile (fifth of the distribution) they belong to, with a small area in the first quintile being in the 20% most deprived areas in Scotland.

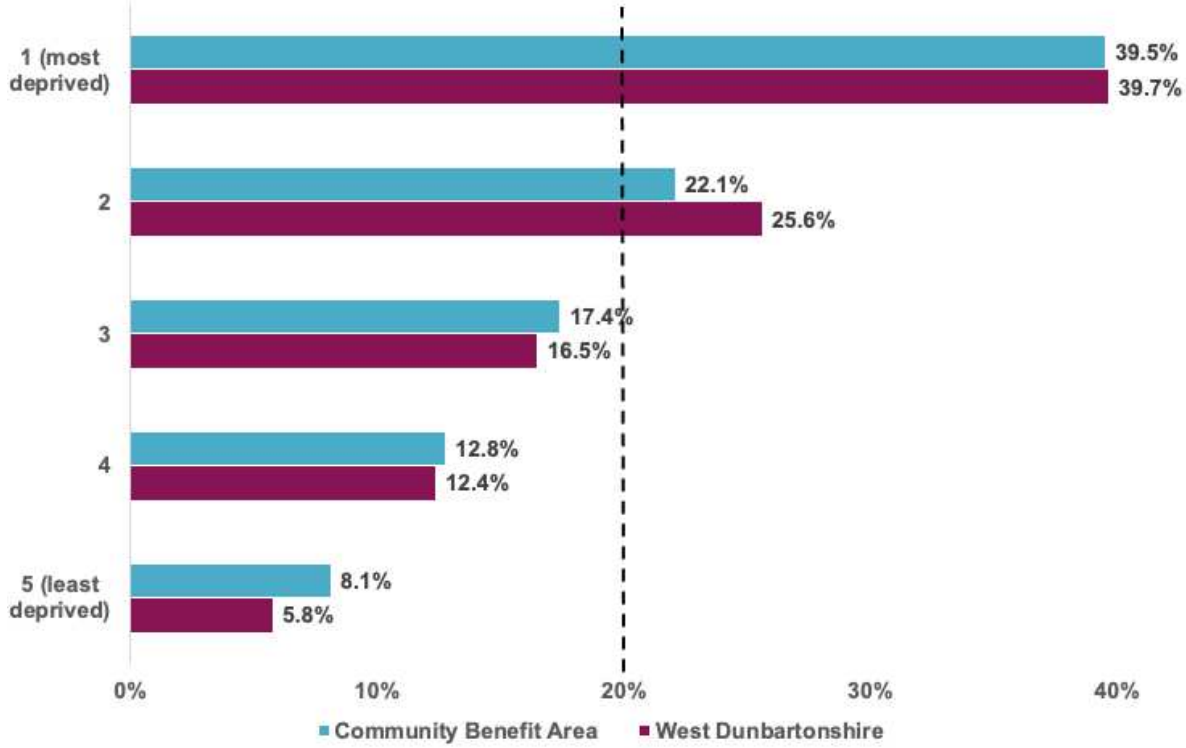
12.5.9 There are 121 SIMD small areas in West Dunbartonshire, 39.7% of which are in the most deprived quintile, and 25.6% being in the second quintile. In contrast, 5.8% of areas are in the least deprived quintile (Scottish Government, 2021).

12.5.10 The proposed community benefit fund for the Proposed Development covers seven community councils located in the council wards of Clydebank Waterfront, Dumbarton,

[1] Defined as 'human health and social work activities', 'public administration and defence and compulsory social security' and 'education'.

Leven and Lomond. Overall, 61.6% of the SIMD areas within these wards are in the 40% most deprived areas of Scotland, including 39.5% in the 20% most deprived areas.

Figure 12.5: Scottish Index of Multiple Deprivation by Quintile, 2020



Source: Scottish Government (2021), Scottish Index of Multiple Deprivation 2020.

Summary Socio-Economic Baseline

12.5.11 The population in West Dunbartonshire is relatively similar to the rest of Scotland, and the working age population is expected to decrease more quickly than for Scotland as a whole, suggesting a lack of high-quality employment opportunities. There are relatively fewer jobs than the share of the population would suggest, and these tend to be in the public sector. In addition, West Dunbartonshire is relatively deprived compared to Scotland as a whole.

12.6 Predicted Impacts

Socio-Economics

12.6.1 Construction of the Proposed Development consists of ten turbines, each with a capacity of up to 7.2 MW, giving a total installed capacity of 72 MW. Using research undertaken by BiGGAR Economics on behalf of RenewableUK in 2015 (RenewableUK, 2015) and more recent data from evaluations of onshore wind farm developments; the average expenditure on construction of wind farms can be estimated based on the average spend per MW, the average spending per turbine, or a combination of the two, as appropriate. In addition, the Proposed Development includes energy storage equipment with a capacity of up to 20 MW.

12.6.2 On the basis of this methodology, the total construction cost for the Proposed Development was estimated to be £76.3 million.

12.6.3 The expenditure was split into four main categories of contract:

- development and planning;
- turbines;
- balance of plant;
- grid connection[2]; and
- battery storage.

12.6.4 As shown in Table 12.5, it was assumed that 50.0% of capital expenditure would be on turbine contracts, with 22.2% spend on balance of plant contracts, 7.5% on development and planning and 7.2% on grid connections.

Table 12.5: Construction Spend by Expenditure Type

Expenditure Types	%	Total (£m)
Development and Planning	7.5%	5.8
Turbines	50.0%	38.2
Balance of Plant	22.2%	16.9
Grid Connections[3]	7.2%	5.5
Battery Storage	13.1%	10.0
Total	**100%**	**76.3**

Source: BiGGAR Economics Analysis. *Totals may not add up due to rounding.

12.6.5 The economic impact of the construction phase was estimated for West Dunbartonshire and Scotland as a whole. In order to do this, it was necessary to estimate the proportion of each type of contract that might be secured in each of the study areas. The assumptions were based on the average from the RenewableUK research, analysis of the industries and professions in each study area, and BiGGAR Economics' previous experience undertaking such analysis for other wind energy projects.

12.6.6 To estimate the expenditure for each contract in each of the study areas, the proportions of contract type that might be secured in each area were multiplied by the estimated expenditure on each construction contract.

12.6.7 It was estimated that West Dunbartonshire could secure contracts worth up to £5.9 million, equivalent to 8% of total capital expenditure. The largest opportunities would be the contracts related to balance of plant, as companies in the area could secure up to 16.7% of contracts, worth £2.8 million.

[2] The grid connection is likely to require consent under Section 37 of the Electricity Act 1989 which is the subject of a separate consenting process to this Section 36 application. Expenditure is included here as grid connection forms part of the Proposed Development. The grid connection will be separate, but the construction projects would run in parallel/wouldn't happen without the other.

[3] Whilst the grid connections work is not part of this application, they will generate economic impacts, since the work would specifically be related to the Proposed Development.

12.6.8 Scotland (including West Dunbartonshire) was estimated to secure £25.0 million, equivalent to 33% of total capital expenditure. The largest opportunity would be balance of plant contracts, worth around £14.0 million.

Table 12.6: Construction Spend by Study Area

Expenditure Type	West Dunbartonshire		Scotland	
	%	£m	%	£m
Development and Planning	34.2%	2.0	75.4%	4.3
Turbines	1.6%	0.6	7.4%	2.8
Balance of Plant	16.7%	2.8	82.7%	14.0
Grid Connections	7.6%	0.4	51.1%	2.8
Battery Storage	1.0%	0.1	10.0%	1.0
Total	**8%**	**5.9**	**33%**	**25.0**

Source: BiGGAR Economics Analysis. *Totals may not add up due to rounding.

12.6.9 To estimate the direct GVA from each of the main contract categories, each contract was split into sub-contracts. Using industry-specific data on turnover and Gross Value Added (GVA) from the Scottish Annual Business Statistics (Scottish Government, 2022), turnover/GVA ratios were applied to each specific sub-contract in order to estimate GVA

12.6.10 In this way, it was estimated that construction contracts could directly generate £3.4 million GVA in West Dunbartonshire and £12.7 million GVA in Scotland, as shown in **Table 12.7**.

Table 12.7: Direct GVA by Contract Type and Study Area (£m)

Expenditure Type	West Dunbartonshire	Scotland
Development and Planning	1.5	2.7
Turbines	0.3	1.5
Balance of Plant	1.3	6.6
Grid Connections	0.2	1.4
Battery Storage	<0.1	0.5
Total	**3.4**	**12.7**

Source: BiGGAR Economics Analysis. *Totals may not add up due to rounding.

12.6.11 Similarly, the contract values potentially awarded in each area would support employment. Turnover per employee for each of the industries involved is also given by the Scottish Annual Business Statistics (Scottish Government, 2022), which allows the employment from any increase in turnover to be estimated.

12.6.12 The employment impacts during the construction phase are reported in years of employment as the contracts would be short-term. Years of employment measures the number of years of full-time employment generated by a project. For example, an

individual working on this project for 18 months would be reported as 1.5 years of employment.

12.6.13 In this way, it was estimated that the Proposed Development could support 44 direct years of employment in West Dunbartonshire, and 204 direct years of employment in Scotland.

Table 12.8: Construction Employment by Contract Type and Study Area (Years of Employment)

Expenditure Type	West Dunbartonshire	Scotland
Development and Planning	5	26
Turbines	11	36
Balance of Plant	23	110
Grid Connections	3	24
Battery Storage	1	9
Total	**44**	**204**

Source: BiGGAR Economics Analysis.

12.6.14 There would also be multiplier effects associated with spending in the supply chain and from spending by employees in the local economy. These effects are estimated by applying Type I (indirect) and Type II (indirect and induced) GVA and employment multipliers (Scottish Government, 2022) to the direct GVA and employment impacts.

12.6.15 Indirect effect refers to the impact associated with spending in the supply chain of Tier 1 suppliers. This is captured by applying Type 1 multiplier to the direct economic impact. The induced effect is the impact associated with staff spending their wages in the wider economy and is captured by subtracting Type 1 multipliers from Type II multipliers and applying this to the direct impact.

12.6.16 In order to adjust these multipliers, which consider the national economy, for the economy of West Dunbartonshire it was assumed that indirect multiplier effects would be 33% of the national impact, and induced multiplier effects, which consider the effect of local spending, would be 70% of the national impact.

12.6.17 Combining direct, indirect and induced impacts, it was estimated that the Proposed Development could generate a total £4.2 million GVA and support 54 years of employment in West Dunbartonshire and £20.7 million GVA and 322 years of employment in Scotland.

Table 12.9: Total GVA Impacts by Study Area (£m)

Impacts	West Dunbartonshire	Scotland
Direct	3.4	12.7
Multiplier	0.8	8.1
Total	**4.2**	**20.7**

Source: BiGGAR Economics Analysis.

Table 12-10: Total Employment Impacts by Study Area (years of employment)

	West Dunbartonshire	Scotland
Direct	44	204
Multiplier	10	118
Total	**54**	**322**

Source: BiGGAR Economics Analysis.

12.6.18 Given the relative size of the West Dunbartonshire economy, which has around 33,500 jobs, it was assessed as low sensitivity. The Scottish economy, which has around 2.6 million jobs, has been assessed as negligible sensitivity.

12.6.19 The magnitude of the economic impact associated with the Proposed Development in West Dunbartonshire has been assessed as low, and therefore, the effect has been assessed as **Negligible (beneficial)** and **Not Significant**. Similarly, the magnitude of impact in Scotland has been assessed as negligible, and therefore, the effect has been assessed as **Negligible (beneficial)** and **Not Significant**.

Operation

12.6.20 The operation and maintenance impact of the Proposed Development was estimated as the impact that would persist throughout the lifespan of the Proposed Development.

12.6.21 Annual expenditure on operations and maintenance was estimated based on analysis undertaken in the 2015 RenewableUK report and evidence from existing wind farms. It was estimated that the annual operations and maintenance expenditure associated with the Proposed Development could be up to £3.0 million (which excludes community benefit payments and non-domestic rates).

12.6.22 In order to estimate the economic impact of the operation and maintenance expenditure in West Dunbartonshire and Scotland, it was first necessary to estimate the proportion of contracts that could be secured in each of these areas. These assumptions were based on the contract proportions reported in the RenewableUK report, the analysis of the industries present in each of the study areas, as well as BiGGAR Economics' previous experience.

12.6.23 On this basis it was estimated that West Dunbartonshire could benefit from £0.5 million in operations and maintenance contracts, with Scottish businesses potentially benefitting from £2.6 million.

Table 12.11: Operations and Maintenance Spending by Study Area

	West Dunbartonshire	Scotland
Turnover (£m)	0.5	2.6
Share (%)	16%	85%

Source: BiGGAR Economics Analysis.

12.6.24 As with the construction phase, the contract values awarded in each of the study areas represent an increase in turnover in those areas. The economic impact of the increase in

turnover on GVA and employment was estimated in the same way as the construction expenditure.

12.6.25 Therefore, it was estimated that turnover generated by the operation and maintenance of the Proposed Development could support £0.3 million GVA and two jobs in West Dunbartonshire, and £1.0 million GVA and nine jobs in Scotland.

Table 12.12: Annual Operations and Maintenance Direct Impact by Study Area

	West Dunbartonshire	Scotland
GVA (£m)	0.3	1.0
Employment	2	9

Source: BiGGAR Economics Analysis.

12.6.26 There would also be indirect and induced impacts during the operation and maintenance of the Proposed Development, which were estimated using the same method as for the construction phase.

12.6.27 By applying relevant economic multipliers, it was estimated that each year the spending required for the operation and maintenance of the Proposed Development could support £0.4 million GVA and two jobs in West Dunbartonshire, and £1.7 million GVA and 17 jobs in Scotland.

Table 12.13: Annual Economic Impact during Operations and Maintenance by Study Area

	West Dunbartonshire	Scotland
GVA (£m)	0.4	1.7
Employment	2	17

Source: BiGGAR Economics Analysis.

12.6.28 The magnitude of the economic impact associated with the Proposed Development in West Dunbartonshire has been assessed as negligible, and therefore, the effect has been assessed as **Negligible (beneficial)** and **Not Significant**.

12.6.29 Similarly, the magnitude of impact in Scotland has been assessed as negligible, and therefore, the effect has been assessed as **Negligible (beneficial)** and **Not Significant**.

Non-Domestic Rates

12.6.30 The Proposed Development would be liable for non-domestic rates, the payment of which would contribute directly to public sector finances. In 2023, the Scottish Assessors Association (SAA, 2023) published guidance on the valuation of onshore wind developments. The rateable value of the Proposed Development was calculated using the expected income per MW, the expected annual net yield, the cost of equipment per MW and the decapitalisation rate. The annual liability of the Proposed Development was then calculated by multiplying the estimated rateable value by the Scottish Higher Property Rate of 52.4 pence. In this way, it has been estimated that the Proposed Development would contribute £0.8 million annually through the payment of non-

domestic rates. Over the project's 40-year operational lifetime, it would contribute £32.9 million.

12.6.31 The impact on the West Dunbartonshire economy has been assessed as low, and therefore, the effect has been assessed as **Negligible (beneficial)** and **Not Significant**.

Community Benefit Fund

12.6.32 The Scottish Government has provided good practice principles for community benefits arising from onshore wind developments, noting the potential of these funds to create value and achieve a lasting legacy for communities and recommends community benefit funding of £5,000 per MW (Scottish Government, 2018).

12.6.33 The Applicant has committed to offering £5,000 per MW per year in community benefits for the local area. The community benefit offer from the Proposed Development is equivalent to £0.4 million annually, or £14.4 million during the 40-year operational lifetime of the Proposed Development.

12.6.34 The community benefit fund would then be distributed to support projects across the communities living in proximity of the Proposed Development. These include the following community councils:

- Milton and Bowling Community Council;
- Bonhill and Dalmonach Community Council;
- Kilmaronock Community Council;
- Renton Community Council;
- Balloch and Haldane Community Council;
- Old Kilpatrick Community Council; and
- Silverton and Overtoun Community Council.

12.6.35 Many of these communities are in areas defined as relatively deprived (see Figure 12.5 in the baseline assessment above) and so are sensitive to economic change (assessed as medium sensitivity). The communities would benefit from funding to support economic and social problems and the community benefit fund could also be used to leverage further investments in the community. The Applicant would work with local communities to identify strategic priorities for this funding.

12.6.36 It would also generate direct impacts, such as employment, in these communities. By applying the turnover per job ratio for volunteer organisations (Scottish Council of Voluntary Organisations, 2018), it was possible to estimate that the community benefit fund could support up to six jobs each year.

12.6.37 The magnitude of the economic and social benefits expected to arise from the community benefit fund in the community council areas in proximity to the Proposed Development has been assessed as medium, and therefore, the effect has been assessed as **Moderate (beneficial)** and so **Significant**.

12.6.38 The Applicant is also committed to offering shared ownership of the Proposed Development, allowing the community the opportunity to invest in and have a share of the wind farm.

12.7 Mitigation

12.7.1 No significant adverse effects have been identified and therefore, no mitigation is required.

12.7.2 The Applicant is committed to maximising the economic benefits of the Proposed Development, through the development of the local supply chain. The Applicant has joined Dunbartonshire Chamber of Commerce and is working with the Chamber to identify local businesses who could be suppliers.

12.7.3 The Applicant will continue with the Chamber to ensure that local businesses are aware of the opportunities and how to capitalise on them. This will include organising Meet the Buyer Events for local businesses.

12.8 Summary of Residual Effects

Construction

12.8.1 Construction of the Proposed Development is expected to result in:

- a temporary **Negligible (beneficial)** effect on the West Dunbartonshire economy; and
- a temporary **Negligible (beneficial)** effect on the Scottish economy.

Operation

12.8.2 Operation and maintenance of the Proposed Development is expected to result in:

- a **Negligible (beneficial)** effect on the West Dunbartonshire economy;
- a **Negligible (beneficial)** effect on the Scottish economy; and
- a **Negligible (beneficial)** effect on the West Dunbartonshire economy as a result of the payment of non-domestic rates.

Conclusion

12.8.3 A significant beneficial effect has been identified, the economic and social benefits expected to arise from the community benefit fund in the community council areas in proximity to the Proposed Development.

12.8.4 It is also necessary to reach a conclusion on the net economic impact of the Proposed Development in the context of Policy 11c of NPF4. Whilst there is no specific guidance on maximising net economic impact in the context of NPF4, the Onshore Wind Policy Statement 2022 identifies a number of potential benefits to communities and to Scotland, including community benefit, shared ownership and opportunities for the Scottish supply chain.

12.8.5 The Applicant has committed to offering £5,000 per MW per year in community benefits for the local area, in line with Scottish Government good practice principles and is also committed to offering shared ownership of the Proposed Development.

12.8.6 The Applicant is committed to maximising the economic benefits of the Proposed Development through the development of the local supply chain, working with Dunbartonshire Chamber of Commerce.

12.8.7 Based on the range of community and economic benefits expected, it can be concluded that the Proposed Development maximises net economic impact.

12.9 References

Department of Energy and Climate Change, RenewableUK (2012), Onshore Wind: Direct and Wider Economic Impacts.

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