



Balgray Wind Farm

Chapter 13: Socio-economic, Tourism, Recreation and Land Use

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Contents

13. SOCIO-ECONOMICS, TOURISM, RECREATION AND LAND USE

13.1. Introduction	8
Guidance and Legislation	8
13.2. National Policy	8
National Planning Framework 4	8
Scotland's National Strategy for Economic Transformation	10
Draft Advice on Net Economic Benefit and Planning	10
Draft Energy Strategy and Just Transition Plan	11
Onshore Wind Policy Statement	11
13.3. Regional Policy	13
South of Scotland Regional Economic Strategy	13
Dumfries and Galloway Council Plan	14
Tourism Policy Context	15
Scotland Outlook 2030 Responsible Tourism for a Sustainable Future	16
South of Scotland Responsible Tourism Strategy	16
Consultation	17
Assessment Methodology	18
Spatial Scope	20
Temporal Scope	20
Baseline Conditions	21
Population	21
Economic Activity	22
Economic Inactivity	22
Workless households	23
Claimant Count Unemployment	23
Employment by Occupation	24
Jobs	25
Businesses	26
Qualifications	27
Earnings	27
Tourism and Recreation Baseline	28
Assessment of Effects and Mitigation	30
Economic Impacts	31
Operational Impacts	32
Tourism and Recreation Impact Assessment	34
Cumulative Effects	35
Wider Economic Impacts	36
Community Benefits Package	38

Mitigation Measures	38
Residual Effects	39
Summary and Statement of Significance	39

List of Abbreviations

Abbreviation	Description
BESS	Battery Energy Storage System
CAPEX	Capital Expenditure
CCUS	Carbon Capture Utilisation and Storage
CTMP	Construction Traffic Management Plan
DESNZ	Department for Energy Security and Net Zero
DGC	Dumfries and Galloway Council
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EU	European Union
FTE	Full-Time Equivalent
GB	Great Britain
GVA	Gross Value Added
IEMA	Institute of Environmental Management and Assessment
ITC	Information Technology and Communications
LVIA	Landscape & Visual Impact Assessment
MW	Mega Watt
NPF4	National Planning Framework
NSET	National Strategy for Economic Transformation
NTS	Non – Technical Summary
OEM	Original Equipment Manufacturer
OBHMP	Outline Biodiversity and Habitat Management Plan
ONS	Office for National Statistics
OPEX	Operational Expenditure
PYE	Person Year Employment
RES	Regional Economic Strategy
SIMD	Scottish Index of Multiple Deprivation
SOSE	South of Scotland Enterprise
SOSEP	South of Scotland Economic Partnership
SSDA	South of Scotland Destination Alliance
UK	United Kingdom
VAT	Value Added Tax

13. Socio-economics, Tourism, Recreation and Land Use

Non-Technical Summary

This Chapter of the Environmental Impact Assessment Report (EIAR) assesses the likelihood of significant socio-economic, recreation and tourism effects of the Proposed Development on the surrounding area, focusing on the local economy, tourism, and recreation.

The relevant policy context and methods used to assess the potential effects are described together with the baseline conditions that exist in the area in the absence of the Proposed Development. Potential effects of the Proposed Development are discussed, together with possible cumulative effects in combination with other developments.

An overview of the findings is set out below.

Potential effect	Magnitude Effect	Assessed Effect	Statement of Significance
Socio-economic – Construction Phase			
Capital Spend	£8.4m at the Dumfries and Galloway level	Minor beneficial	Not Significant
Employment	Up to 61 direct jobs at the Dumfries and Galloway level	Minor beneficial	Not Significant
GVA	£3.6m in direct GVA at the Dumfries and Galloway level	Minor beneficial	Not Significant
Socio-economic – Operational Phase			
Operational Spend	£0.7m across Dumfries and Galloway per annum	Negligible	Not Significant
Employment	Up to six direct FTEs at the Dumfries and Galloway level	Negligible	Not Significant
GVA	A direct annual injection of £0.3m at the Dumfries and Galloway level	Negligible	Not Significant
Tourism and Recreation			
National and Regional Attractions	Minimal / very little effect due to distance from Proposed Development	Negligible	Not Significant
Local Attractions	Attractions are not expected to have their characteristics affected by the Proposed Development. Therefore, minimal / very little effect	Negligible	Not Significant
Trails and Paths	Very little or no effect on the behaviour of visitors/tourists that use trails and paths as the Proposed Development is not expected to alter their features or characteristics.	Negligible	Not Significant
Tourism Accommodation	Likely to be beneficial effects for local accommodation providers within close vicinity of the Proposed Development during construction, and during mature operation phases.	Negligible	Not Significant

In addition to the stated economic opportunities during the construction and operational phases, there are also a variety of wider economic impacts which should be noted as having positive effects on the regional and national economies, as discussed below.

Supporting policy objectives

The Proposed Development can play an important role in supporting regional and national policy objectives. Importantly, the Proposed Development can support the ambitions set out in the national and regional economic strategies, notably a new and significant capital investment, whilst supporting the area's green credentials, supporting local business through supply chain opportunities and thereby creating jobs and offering skills development.

Local supply chain opportunities

The Applicant will host 'Meet the Buyer' events and suitably qualified local firms will be invited to bid for different aspects of construction, such as foundation laying and electrical works. Construction materials are normally sourced locally (i.e. within Dumfries and Galloway) and local transport and plant hire companies used wherever possible.

Work expenditure

It is worth noting Renewable UK research which estimated that the expenditure of workers who visit the local area benefit the accommodation and food service sector to the value of around £7,500 per MW constructed. This would suggest, based on a 43.2 MW Proposed Development, that further financial benefits of £324,000 would accrue at the regional level, largely benefiting local accommodation providers. The wider 'knock-on' impacts can in turn support the supply chain of other activities such as the spending habits of retail operations and accommodation providers.

Pre-construction benefits

As the planning of the Proposed Development is underway, there have already been positive financial and economic effects to local and national business that have been commissioned to support the development phase. This includes a range of planning, engineering and environmental services. This work is ongoing and there will continue to be financial benefits to companies involved in helping to develop and design the Proposed Development. These financial benefits have not been presented as these works are ongoing, but they are of a notable scale.

Income effects

The economic analysis has focused on the Gross Value Added (GVA) effects of generated employment as this is the 'real' impact on the economy. However, it is worth noting that new employment will generate additional wages and salaries, an element of which will be spent in Dumfries and Galloway and Scotland.

Exchequer effects

The analysis has not attempted to estimate the additional exchequer effects as result of taxes borne (Corporation Tax, Employer National Insurance and Irrecoverable VAT) and taxes collected (Income Tax, Employee National Insurance and non-domestic business rates). These are additional financial benefits which will support the regional and national economies.

Effects on tourism or recreation assets

As presented within the assessment and based on a review of secondary sources on tourist's perceptions of onshore wind farms, it is not anticipated that there will be any significant negative impact on the tourism industry or recreational assets as a result of the Proposed Development.

Land management and ecological enhancements

The Proposed Development incorporates proposals for biodiversity enhancement and further details are set out in EIA Report Chapter 8 'Ecology' and the Outline Biodiversity and Habitat Management Plan. This includes adopting a suitable grazing scheme which will manage current suitable marsh fritillary habitat and enhance adjacent habitat. The scheme will predominantly focus on grassland management through cattle and extensive cattle grazing to maintain and enhance butterfly areas.

Battery storage

The Proposed Development also includes a battery storage facility of up to 43MW. All capacity will be connected to the National Grid network to increase the efficiency of the site and help to balance the grid network.

13.1. Introduction

- 13.1.1. This section of the Environmental Impact Assessment Report (EIAR) considers the potential socio-economic, tourism, recreation and land-use effects of the Proposed Development arising during construction and operation and maintenance phases.
- 13.1.2. The relevant policy context and methods used to assess the potential effects are described together with the baseline conditions that exist in the area in the absence of the Proposed Development. Potential effects of the Proposed Development are discussed, together with possible cumulative effects in combination with other developments.
- 13.1.3. The chapter has been compiled by MKA Economics who has led the socio-economic, tourism, recreation and land use assessment of over 30 onshore wind farms across Scotland, a number of which being located in Dumfries and Galloway. MKA Economics also brings local knowledge from leading other economic development studies, including the Dumfries Town Centre Masterplan and Annan Harbour Masterplan, event impact assessments (SkiffyWorlds, Wickerman, Stranraer Oyster Festival, farmers' markets and motor rallies for example) and the evaluation of regional funding programmes (food and drink fund, small business loan scheme and foot and mouth fund).

Guidance and Legislation

- 13.1.4. There is no relevant legislation or guidance available on the methods that should be used to assess the socio-economic effects of a proposed onshore wind farm as part of an EIA.
- 13.1.5. Similarly, there is no formal guidance on the methods that should be used to assess the effects that wind farm developments may have on tourism and recreation/leisure interests. The assessment is based on best practice and draws on experience in assessing the socio-economic, tourism and recreation impacts of onshore wind developments across Scotland.
- 13.1.6. The following paragraphs summarise relevant policy in relation to socio-economic and tourism effects. Further detail on planning, energy and climate change policy can also be found referenced in Chapter 5: Policy Context.

13.2. National Policy

National Planning Framework 4

- 13.2.1. The Scottish Government recently adopted new national planning guidance (Scottish Government, 2023) in the form of the National Planning Framework 4 (NPF4). NPF4 supersedes Scottish Planning Policy (Scottish Government, 2014). NPF4 has an increasing importance on supporting the development of

new renewable energy technologies, as the overarching energy policy (Policy 11) states:

“To encourage, promote and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage, new and replacement transmission and distribution infrastructure and emerging low-carbon and zero emissions technologies including hydrogen and carbon capture utilisation and storage (CCUS)”

13.2.2. In terms of energy policy (Policy 11c), NPF4 sets out the importance of economic impact, it is noted 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”

13.2.3. NPF4 has a regional focus including the “South” and has three key priorities, these being:

- *Protect environmental assets and stimulate investment in natural and engineered solutions to climate change and nature restoration, whilst decarbonising transport and building resilient physical and digital connections”*
- *“Increase the population by improving local liveability, creating a low carbon network of towns and supporting sustainable rural development”*
- *“Support local economic development whilst making sustainable use of the area’s world-class environmental assets to innovate and lead greener growth”*

13.2.4. NPF4 is clear in its desire to rebalance the South of Scotland’s economy to enable it to make a strong contribution towards meeting the country’s ambition for a net zero and nature positive country by demonstrating how natural assets can be managed and used to secure a more sustainable future. It seeks to protect environmental assets and stimulate investment in natural and engineered solutions to climate change and nature restoration, whilst decarbonising transport and building resilient connections.

13.2.5. Importantly for South Scotland, NPF4 seeks to maintain and help to grow the population by taking a positive approach to rural development that strengthens networks of communities. Crucially it sets out the importance of supporting local economic development by making sustainable use of the areas’ world class environmental assets to innovate and lead greener growth.

13.2.6. NPF4 is founded on sustainable economic growth principles and is governed by the National Strategy for Economic Transformation (Scottish Government, 2022) which confirms that the planning system should proactively support

development that contributes to sustainable economic growth and to create sustainable places.

Scotland's National Strategy for Economic Transformation

- 13.2.7. This is the Scottish Government's statement of ambition for economic recovery following the Covid-19 pandemic (Scottish Government, 2022).
- 13.2.8. It sets the ambition of the next ten years as a time of huge change and *"...extraordinary opportunity..."* and promotes Scotland as a nation with competitive advantages in the new industries generated by technological change, scientific advance and our response to the climate and nature crises. The strategy deliberately focuses on five policy programmes with the greatest potential benefit, including to; *"...strengthen Scotland's position in new markets and industries, generating new, well-paid jobs from a just transition to net zero"*.
- 13.2.9. The transition to net zero is seen not just an environmental imperative but an economic opportunity - one where Scotland will become world leading. The identified opportunities for this competitive advantage include the construction and development of on- and off-shore energy generating technologies.
- 13.2.10. The aim of the National Strategy for Economic Transformation (NSET) is to focus on green growth to foster economic wellbeing and prosperity, and this assessment will directly focus on this aspect and present an independent assessment of the economic development role which the proposal will bring to the area.

Draft Advice on Net Economic Benefit and Planning

- 13.2.11. The Draft Advice on Net Economic Benefit and Planning (Scottish Government, 2016) states the importance of demonstrating the net economic benefit of a proposed scheme, highlighting the importance of taking economic benefits into account when determining a planning decision.
- 13.2.12. The meaning of 'net economic benefit' is described as the difference between the estimated economic position where the development proceeds and the position if the proposal does not go ahead.
- 13.2.13. Advice is provided on the methodology to be used when modelling economic benefits and it acknowledges that:
- "...assessing the additional benefit from a proposal will usually involve making some assumptions, and is therefore not an exact science. It is important that the level of detail of any assessment is kept proportionate to the likely scale of the net economic benefit, and that assumptions made are completely transparent, evidence-based and as accurate as possible"*.

Draft Energy Strategy and Just Transition Plan

- 13.2.14. On 07 September 2021 the Scottish Government provided an initial response to the final report of the Just Transition Commission. It sets out their long-term vision for just transition and provides details on their National Just Transition Planning Framework. The Just Transition has been published alongside the economic strategy. The ministerial foreword states that a just transition means:
- Skills training and education that helps to secure good, high value jobs in green industries like low-carbon manufacturing, renewables, and tech;
 - Job security for those in industries that will play the biggest part in the transition - at every level - from those working in petrol stations to those on oil platforms; and
 - Homes that are energy efficient and help to reduce fuel poverty.
- 13.2.15. The Scottish Government is currently consulting on a Draft Energy Strategy and Just Transition Plan (Scottish Government, 2023). This sets out how the Scottish Government seeks to realise climate change ambitions, and the need to transform the way Scotland generates, transports and uses energy.
- 13.2.16. The draft Energy Strategy and Just Transition Plan sets out the scale of that opportunity and provides clarity on how Scotland will prepare for a Just Energy Transition. The draft Energy Strategy and Just Transition Plan sets a vision for Scotland's energy system to 2045 and a route map of ambitions and actions that, coupled with detailed sectoral plans and the forthcoming Climate Change Plan, will guide decision-making and policy support over the course of this decade. Specifically related to renewable energy, the vision for a fairer, greener 2045 includes all energy needs being met by renewable sources.

Onshore Wind Policy Statement

- 13.2.17. The Scottish Government developed an onshore wind energy policy statement in 2022 (Scottish Government, 2022), with an ambition to deploy 20GW of onshore wind by 2030. Chapter Four states that:
- “The Scottish Government remains committed to the principles of a just transition to a net zero economy, and that means ensuring that communities across Scotland feel the benefits of this transition. Community benefit and shared ownership can be transformational for the communities who host renewable developments, and we must ensure that industry continue to deliver on these expectations.”*
- 13.2.18. An Onshore Wind Sector Deal (Scottish Government, 2023) was officially signed on 21 September 2023.

13.2.19. As part of the agreed Onshore Wind Sector Deal, the Scottish Government is committed to the following:

- Supporting the enhancement of the current skills and training provision by further and higher education and other training providers to focus on delivering the needs of the wind industry and to position Scotland as a world leader in material circularity.
- Ensuring that onshore wind in Scotland will continue to collaborate with local communities, building on good practices to enhance its existing 'good neighbour' approach through engagement at all stages of the project life cycle, offering impactful community benefits and practical routes to shared ownership.
- Utilising NPF4 (Policy 1), which makes clear that, when considering all development proposals, significant weight will be given to the global climate and nature rises. New onshore wind projects in Scotland will enhance biodiversity and optimise land use and environmental benefits.
- Reducing the time it takes to determine Section 36 applications for onshore wind projects by increasing skills and resources and by streamlining approaches to scoping Environmental Impact Assessment Reports (EIARs) by using template formats and associated guidance.
- Through detailed pipeline analysis we will develop evidence to support a more strategic approach to delivering the investment in our electricity network and to inform a coordinated approach to the transportation of wind turbine components across Scotland's road network. We will support improvements to the network connections process helping to ensure that onshore wind capacity can connect and operate effectively.
- Taking action to enable a fair, consistent and transparent aviation process, delivering enduring cooperative coexistence between onshore wind deployment and safe aviation operations.

13.2.20. RenewableUK published research in 2019 (Renewables UK / Vivid Economics, 2019) which showed that:

“If more new onshore wind projects were to go ahead to help the UK to reach net zero emissions, consumers would save money on their electricity bills in the decades ahead, and thousands of jobs would be created.”

13.2.21. It also added:

“Deploying 22GW of onshore wind (across the UK) by 2035 generates additional economic benefits including:

- *Onshore wind is the cheapest source of new generation and could reduce electricity costs to the consumer by up to 7% compared to natural gas (with carbon costs) in 2035, saving the average household £50 per year.*
- *The sector could nearly triple employment, supporting 31,000 jobs by 2035 with 14,000 directly employed in the industry*
- *Onshore wind jobs are projected throughout the UK, lifting productivity (GVA per worker) in local authorities that need it most, particularly in Scotland, Wales and Northern Ireland*
- *The UK supply chain could capture £360m of the global onshore wind market by 2035, a rapidly growing market which is expected to increase by 4-fold from today”*

13.2.22. The report also states that:

“Onshore wind employment is likely to be located in local authorities most in need of high-paying, high-productivity jobs”

13.3. Regional Policy

South of Scotland Regional Economic Strategy

13.3.1. Following extensive engagement across the South of Scotland, the South of Scotland Regional Economic Partnership developed a Regional Economic Strategy (South of Scotland Regional Economic Partnership, 2021).

13.3.2. The ten-year strategy sets out a clear vision for how the region's economy will look and work in the future, which focuses on making the South of Scotland *“Green, Fair and Flourishing”*.

13.3.3. The vision is:

“We will be a region of opportunity and innovation - where natural capital drives green growth, ambition and quality of life rivals the best in the UK, communities are empowered and cultural identity is cherished, enabling those already here to thrive and attracting a new generation to live, work, visit, learn and invest in the South of Scotland.”

13.3.4. The Regional Economic Strategy has six Themes which are their priorities. These are:

- Skilled and Ambitious People
- Innovative and Enterprising

- Rewarding and Fair Work
- Cultural and Creative Excellence
- Green and Sustainable Economy
- Thriving and Distinct Communities

13.3.5. This is the first ever economic strategy covering the whole of the South of Scotland (Dumfries and Galloway and the Scottish Borders). It is an opportunity to drive the transformational change that many living and based in the region want to see.

Dumfries and Galloway Council Plan

13.3.6. Dumfries and Galloway Council developed a new Council Plan (Dumfries and Galloway, 2023) for 2023.

13.3.7. The Council Plan 2023–2028 sets out the vision and strategic outcomes that the Council wants to achieve over the next five years. It will guide activity across the Council and focus on how they will deliver better outcomes for the citizens and communities in Dumfries and Galloway. The previous Council Plan 2017–2022 delivered on a number of important priorities which saw the Council:

- Deliver the 1,140 hours early learning and childcare for all three, four and eligible two-year-olds
- Support communities, businesses and vulnerable people through the pandemic by providing grants and prioritising services
- Empower local communities through asset transfers and support for community led regeneration
- Secure long term investment into the region as part of the Borderlands Inclusive Growth Deal
- Develop a Youth Participation and Engagement Strategy that established their first ever Youth Council, which gives a voice to young people across the region Dumfries and Galloway Council Plan 2023 – 2028

13.3.8. The plan looks forward after the challenges of the past few years where local communities came together to support each other through the pandemic. New challenges have emerged since that time, including the rising cost of living for people and families.

13.3.9. There are opportunities for the region in the future and the Council is committed to working with communities and partners to ensure these are realised.

- 13.3.10. The Council seeks to help Dumfries and Galloway to thrive and build a strong local economy that enables the region to grow, and will create opportunities for businesses to invest, people to visit and for citizens and communities to reach their ambitions.
- 13.3.11. The plan centres on a core set of principles: Safeguard our future, Support our citizens, Support our Communities and Be a responsive Council. These principles will shape how the Council will deliver their four themes: economy; travel, connectivity and infrastructure; education and learning; and health and wellbeing.
- 13.3.12. The plans sets the following vision:
- ‘Our ambition is to be a successful region, with a growing economy, based on fairness, opportunity and quality public services, where all citizens prosper. Working in partnership, with connected, healthy and sustainable communities. The region will be the natural place to live, work, visit and invest.’*
- 13.3.13. Responding to the climate and nature emergency is the backbone to the plan, as is doing so by creating a green economy built on the Dumfries and Galloway’s outstanding natural capital.

Tourism Policy Context

- 13.3.14. In terms of relevant tourism policy, the Scottish Tourism Alliance developed The National Tourism Strategy 2030 (Scottish Tourism Alliance, 2020) which confirms the importance of tourism to Scotland's economy and emphasises the resilience of the tourism industry since the start of the Covid-19 pandemic in 2020.
- 13.3.15. However, the strategy cautions that Scotland must remain competitive, by developing and changing its products and marketing in order to improve the quality of the customer experience and increase sales.
- 13.3.16. The vision is:
- “Together we will grow the value and positively enhance the benefits of tourism across Scotland by delivering the very best for our visitors, our businesses, our people, our communities and our environment”.*
- 13.3.17. As stated in VisitScotland's Position Statement on Wind Farms, (VisitScotland, 2014) they are not a statutory consultee. VisitScotland understands and supports the drive for renewable energy and recognises the economic potential of Scotland's vast resource, including the opportunities for wind farm development.

- 13.3.18. VisitScotland's Position Statement on Wind Farms states that there is a mutually supportive relationship between renewable energy developments and sustainable tourism.
- 13.3.19. VisitScotland is aware that some groups are concerned by the potential impact of wind farm developments on tourism; however, their own position statement states that independent research; "...suggests that wind farms have a limited impact on visitors' decisions to holiday in Scotland" (VisitScotland, 2014, pg.2).
- 13.3.20. The Scottish Parliament's Energy Committee (Scottish Parliament, 2012) also found *"...no evidence that wind farms have a negative effect on the tourism industry."*

Scotland Outlook 2030 Responsible Tourism for a Sustainable Future

- 13.3.21. Scotland Outlook 2030 (Scottish Tourism Alliance, 2020) has been developed by Scottish Tourism Alliance, the Scottish Government, VisitScotland, Scottish Enterprise, Highlands and Islands Enterprise, and Skills Development Scotland. Over 2500 tourism leaders and stakeholders from the Scottish tourism industry have contributed to its development.
- 13.3.22. The four key priorities of Scotland Outlook 2030 are:
- *"Our Passionate People - We will attract, develop and retain a skilled, committed, diverse and valued workforce;*
 - *Our Thriving Places - We will create and develop a sustainable destination together;*
 - *Our Memorable Experiences – We will provide the very best, authentic and memorable experiences; and*
 - *Our Diverse Businesses – We will build business resilience, sustainability and profitability."*

South of Scotland Responsible Tourism Strategy

- 13.3.23. Sustainable economic growth and community prosperity are the key objectives of recent work by a group of major organisations to co-develop a new responsible tourism strategy for the South of Scotland in collaboration with local stakeholders.
- 13.3.24. The South of Scotland Destination Alliance (SSDA) recently launched the first tourism strategy for the region. Throughout 2023, businesses, organisations, community groups and individuals will be able to feed into the development of the new responsible tourism strategy for the south of Scotland. Dumfries and Galloway Council is committed to working with the SSDA on this, alongside the South of Scotland Enterprise (SOSE) and Scottish Borders Council.

13.3.25. The new South of Scotland Responsible Tourism Strategy was launched in 2024, with the aims to:

- grow tourism spend by £1 billion to £1.76 billion by 2034
- support a further 6,000 jobs in the sector, to 20,000 FTE by 2034
- develop a year-round destination that is "go to" not "go through"
- increase the number of higher-spending, longer-staying international visitors

13.3.26. It seeks to deliver the aims through the following strategic objectives:

- inspire visitors to come to the South of Scotland
- develop the visitor experience with a focus on quality
- support business to succeed
- act responsibly for long-term collective benefit

13.3.27. The new strategy was launched as a "hugely ambitious" new 10-year tourism strategy for the South of Scotland and seeks to *"create Scotland's fastest growing visitor economy"*.

Consultation

13.3.28. The assessment process has been informed by the Scoping Opinion (Scottish Government, 2021). A summary of the key consultation responses is described in Table 13-1.

Table 13-1: Relevant Scoping Opinion Considerations

Consultee	Summary of Scoping Opinion Response	Where addressed within this Report
North Milk Community Council (24 th March 2024)	Pre-construction and construction phase aspects to be included within the EIA: a. Environmental impact study covering the commissioning and lifetime operations of the proposed wind farm; b. wrt the proposed battery storage:- where is the battery storage being manufactured/assembled; Fire Risk Assessment, impact study and emergency response requirements for the battery storage; c. Percentage of actual local content of works within the supply chain as anything sourced out with Dumfries & Galloway could not properly be described as "local content";	Presentations of a socio-economic and tourism baseline position and stated impact in terms of economic (jobs, turnover and GVA) and social impacts, and the wider community impacts being proposed by the Applicant are provided in this chapter of the EIA Report.

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- d. wrt local jobs :- what exactly the intent here is during preconstruction, construction, commissioning and operations and maintenance through the lifetime of the wind farm;
 - e. Comprehensive impact assessment document detailing delays and disruption impacts upon surrounding community during the pre- and construction phases;
 - f. Who are the OEMs of the proposed turbines;
 - g. Where are the monopolies being manufactured;
 - h. Where are the OEMs manufacturing the turbine blades and what are the anticipated blade disposal methods at the end of the wind farm's operating life;
 - i. Where are the nacelles and generators being manufactured?
-

Assessment Methodology

- 13.3.29. The methods applied within this assessment are based on established best practice, including methods from UK Government and industry reports.
- 13.3.30. The assessment has employed appraisal techniques consistent with environmental impact guidance published by the Institute of Environmental Management and Assessment (IEMA, 2009) and draws on analysis and assumptions in research published by Renewable UK in 2015, Onshore Wind: Economic Impacts (Renewable UK, 2015).
- 13.3.31. NatureScot has provided guidance on assessment of effects from wind farms on recreational amenity (NatureScot, 2018). This guidance has also been used to inform the approach.
- 13.3.32. The methodology adopted in this assessment has involved the following desk based key stages:
 - Consideration of the relevant baseline in policy, socio-economic audit and tourism and recreation audit terms;
 - Review of the Proposed Development for potential impacts;
 - Evaluation of significance;
 - Identification of mitigation measures, where required; and
 - Assessment of residual impacts.
- 13.3.33. The scale of significance described below has been used to assess the potential and residual impacts of the Proposed Development against baseline

conditions. The assessment process aims to be objective and quantifies impact as far as possible; however, some impacts can only be evaluated on a qualitative basis:

- **Negligible or No Effect:** Either no change or no detectable change to a location, environment or sensitive receptor;
- **Minor:** A detectable but non-material change to a location, environment or sensitive receptor;
- **Moderate:** A material, but non-fundamental change to a location, environment or sensitive receptor; and
- **Major:** A fundamental change to a location, environment or sensitive receptor or in breach of recognised legislation, policy or standards.

- 13.3.34. In assessing significance, consideration is given to the national, regional and local baseline situation. In socio-economic, tourism and recreation assessments there is not a defined local area. For socio-economics the local area is defined according to available statistics and for tourism and recreation it includes those tourism and recreational assets which are close to the Proposed Development.
- 13.3.35. The magnitude of the effect is determined in proportion to the area of effect relevant to each receptor. For the purpose of the assessment, a moderate or major effect is deemed to be 'significant' in terms of the EIA Regulations.
- 13.3.36. In terms of socio-economic factors, potential effects would be significant if the Proposed Development resulted in fundamental or material changes in population, structure of the local community or local economic activity.
- 13.3.37. The effect of the Proposed Development on tourism and recreation is closely related to public attitudes to wind farms, however, a negative opinion does not necessarily result in a material change in recreational patterns. The relevant conclusions from the most recent studies are discussed later in this Chapter. In terms of effects on recreational routes the assessment is based on the baseline and effects assessment as set out in Chapter 6 (Landscape and Visual Assessment).
- 13.3.38. The assessment has been undertaken based on the indicative generating capacity of the wind turbines on the Proposed Development (MW). This study conservatively excludes direct economic impact of the construction and operation of the battery storage capacity of the Proposed Development for which the Renewable UK research arguably did not include at the time of the study.

Spatial Scope

- 13.3.39. The spatial scope of the assessment of socio-economic effects is represented by the study areas of the Dumfries and Galloway Council Area and Scotland. This is driven by the availability of comparable socio-economic statistics at the Dumfries and Galloway and Scotland levels.
- 13.3.40. The spatial scope for tourism and recreation effects is based on a review of the main attractions in Dumfries and Galloway and a review of attractions and assets in close proximity to the Proposed Development.

Temporal Scope

- 13.3.41. The temporal scope of the socio-economic assessment is during the following phases:
- Construction; and
 - Operational and Maintenance.
- 13.3.42. Unless stated otherwise, tourism and recreation effects are considered based on the operational phase of the Proposed Development.
- 13.3.43. Effects associated with the construction phase of the Proposed Development are considered to be temporary and short-term. Effects associated with the operational phase of the Proposed Development are considered as long-term.
- 13.3.44. The Proposed Development could also have an effect on socioeconomic, tourism and recreation during the decommissioning phase. Due to the relatively young age of the industry, there is a lack of data around the potential economic impact of the decommissioning phase.
- 13.3.45. Very few onshore wind projects to date have been fully decommissioned in the UK and, as a result, there is minimal data regarding the economic costs and impacts associated with this phase.
- 13.3.46. It is also difficult to predict what local economic conditions would be at the time of decommissioning (up to 35 years in the future) therefore arriving at evidence-based and accurate assumptions as recommended in guidance (Scottish Government, 2016) is not realistic.
- 13.3.47. There is also evidence to suggest that in the long run wind farms are more likely to be re-powered rather than decommissioned. Should full decommissioning take place the effects are likely to be short term and similar in nature but substantially lesser than construction effects. For these reasons, the potential effects associated with the decommissioning phase are not assessed further in this Chapter.

Baseline Conditions

- 13.3.48. A desk-based review of publicly available information has been undertaken to identify the key characteristics of the local economy, existing land use and tourism and recreational facilities in Dumfries and Galloway. This is based on a review of labour market statistics from the Office of National Statistics as presented on Nomisweb (Nomisweb, 2024).

Population

- 13.3.49. Dumfries and Galloway has a population of 146,300 residents and witnessed a decrease of 3.4% over the period 2011 to 2021 – compared to 2.2% increase at the Scottish level and a 5.9% rise at the national (Great Britain) level. The area has witnessed a population decrease, comparing to increases at the Scottish and GB levels.

Table 13-2: Population (2021)

	Dumfries and Galloway (Numbers)	Scotland (Numbers)	Great Britain (Numbers)
All people	146,300	5,418,400	65,078,900
Males	70,800	2,630,200	31,833,600
Females	75,500	2,788,200	33,245,300

Source: ONS Population Estimates

- 13.3.50. According to the latest population projections for Scotland (National Records of Scotland, 2018), the population of Dumfries and Galloway is projected to decrease by 8.4% over the period from 2018 to 2043, compared to a 2.5% increase at the national level. Only three local authorities are expected to experience a larger decrease these being Argyll and Bute, Inverclyde and the Western Isles.
- 13.3.51. In terms of the working age population, 57.6% of the regional population is of working age, compared to 63.5% and 62.9% at the Scottish and GB levels respectively. This indicates that the area has a lower proportion of people of working age, which can be seen to be an economic challenge in terms of securing future economic prosperity. It has a larger proportion of older people and a faster ageing population than recorded nationally.

Table 13-3: Population aged 16-64 (2021)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Great Britain (%)
All people aged 16-64	84,300	57.6	63.5	62.9
Males aged 16-64	40,800	57.6	63.9	63.3
Females aged 16-64	43,500	57.6	63.1	62.6
All people aged 16-64	84,300	57.6	63.5	62.9

Source: ONS Population Estimates

Economic Activity

13.3.52. Table 13-4 below highlights that Dumfries and Galloway has a higher proportion of working age people who are economically active, when compared to the Scottish level. The regional area also has a higher proportion of self-employed people than recorded nationally.

Table 13-4: Employment and Unemployment (July 2023 – June 2024)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Great Britain (%)
Economically active	71,500	78.4	77.3	78.4
In employment	69,100	75.7	74.5	75.5
Employees	52,300	58.4	66.1	66.1
Self employed	16,800	17.3	8.2	9.2
Unemployed (model-based)	2,200	3.1	3.5	3.7

Source: ONS Annual Population Survey

13.3.53. This suggests that although the region has fewer people of working age, those who are of working age are more economically active than recorded nationally and at the Scottish level. This is an economic strength and one which can help secure future economic wealth. A more detailed assessment of unemployment is set out later in this section.

Economic Inactivity

13.3.54. Correlated to higher economic activity rates Dumfries and Galloway has a lower rate of economic inactivity, as shown below.

Table 13-5: Economic Inactivity (July 2023 – June 2024)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Great Britain (%)
Total	18,700	21.6	22.7	21.6
Student	N/A	N/A	24.6	26.8
Looking after family/home	N/A	N/A	16.1	18.9
Temporary sick	N/A	N/A	2.8	2.0
Long-term sick	7,500	40.1	32.0	28.1
Discouraged	N/A	N/A	0.5	0.4
Retired	4,500	24.0	14.5	12.9
Other	N/A	N/A	9.5	11.0
Wants a job	#	20.5	17.3	17.8
Does not want a job	14,800	79.5	82.7	82.2

Source: ONS Annual Population Survey

13.3.55. It is worth noting that of those economically inactive, the region has a higher proportion of people who 'want a job' (20.5%) compared to the Scottish (17.3%) and GB (17.8%) levels.

Workless households

13.3.56. In terms of worklessness, there are more households in the region, compared to the Scottish and GB levels, that are workless households.

Table 13-6: Workless Households (2022)

	Dumfries and Galloway	Scotland	Great Britain
Number of Workless Households	9,800	320,100	2,858,400
Percentage of Households that are Workless	22.5	17.8	13.9
Number of children in Workless Households	N/A	88,400	1,270,500
Percentage of children who are in Households that are Workless	N/A	10.2	10.3

Source: ONS Annual Population Survey

Claimant Count Unemployment

13.3.57. The latest claimant count unemployment rate highlights that the region has a lower rate than the Scottish and GB rates.

Table 13-7: Claimant Count by Sex (September 2024)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Great Britain (%)
All people	2,530	2.9	3.2	4.3
Males	1,405	3.3	3.7	4.7
Females	1,125	2.5	2.8	3.9

Source: ONS Claimant Count

13.3.58. The unemployment rate fell from the post pandemic high in mid-2021, when the rate was round 5.4%, and almost 5,000 people were out of work and claiming benefits, this represents a fall of around 50%. The unemployment rate has been around 3% for the last two years. It has consistently been below the Scottish and GB since 2001, when the region was adversely affected by the foot and mouth crisis.

13.3.59. Regional unemployment amongst all age groups is below the Scottish rates and has a slightly higher proportion of young people aged between 16 and 17 than the GB level. It is worth noting that there are still 2,500 people out of work and claiming benefits, of these 85 reside within the Lockerbie intermediate data zone where the Proposed Development is located.

Table 13-8: Claimant Count by Age (September 2024)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Great Britain (%)
Aged 16+	2,530	2.9	3.2	4.3
Aged 16 to 17	20	0.6	0.6	0.2
Aged 18 to 24	395	4.0	4.3	5.3
Aged 18 to 21	245	4.5	4.7	5.6
Aged 25 to 49	1,375	3.6	3.8	4.9
Aged 50+	735	2.1	2.3	3.2

Source: ONS Claimant Count

13.3.60. In terms of benefit claimants by type, the local area has a higher rate than the Scottish rates across all benefit claimant groups, this is particularly the case for carer related benefits.

Table 13-9: Main Benefit Claimants (September 2024)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Great Britain (%)
Total claimants	11,630	13.1	13.0	11.0
Job seekers	900	1.0	1.4	1.1
ESA and incapacity benefits	6,810	7.6	7.8	6.1
Lone parents	780	0.9	0.9	1.0
Carers	2,020	2.3	1.7	1.7
Others on income related benefits	200	0.2	0.2	0.2
Disabled	730	0.8	0.9	0.8
Bereaved	190	0.2	0.2	0.2
Main out-of-work benefits	8,680	9.8	10.2	8.4

Source: DWP Benefit Claimants – Working Age Client Group

13.3.61. Overall, in terms of ‘main out of work benefits’ Dumfries and Galloway has a lower proportion of claimants than recorded at the Scottish and GB levels.

Employment by Occupation

13.3.62. Table 13-10 highlights the type of employment at the Dumfries and Galloway, Scottish and GB levels. It indicates that the region has a higher proportion of managers, skilled trade, and caring leisure, sales and elementary posts than the Scottish and GB levels.

Table 13-10: Employment by Occupation (July 2023 – June 2023)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Great Britain (%)
Soc 2020 major group 1-3	24,000	35.0	50.0	52.9
1 Managers, directors and senior officials	6,600	9.6	8.3	11.0
2 Professional occupations	10,500	15.2	26.0	26.6
3 Associate professional occupations	6,900	9.9	15.5	15.3
Soc 2020 major group 4-5	18,600	27.1	18.9	18.2
4 Administrative & secretarial occupations	N/A	N/A	9.5	9.4
5 Skilled trades occupations	14,600	21.1	9.3	8.7
Soc 2020 major group 6-7	12,900	18.8	15.8	14.6
6 Caring, leisure and Other Service occupations	7,800	11.3	9.4	8.4
7 Sales and customer service occs	5,100	7.4	6.3	6.2
Soc 2020 major group 8-9	13,100	19.0	15.3	14.3
8 Process plant & machine operatives	N/A	N/A	5.4	5.4
9 Elementary occupations	10,700	15.5	9.8	8.9

Source: ONS Annual Population Survey

13.3.63. Regionally there are fewer people employed in professional and associate professional occupations.

Jobs

13.3.64. The region has a lower proportion of full-time jobs and more part-time jobs than the Scottish and GB levels.

13.3.65. In terms of industry of employment, Dumfries and Galloway has higher rates of manufacturing posts, water supply, wholesale and retail trade, transportation, accommodation and food service, real estate, health and social work jobs and arts, entertainment and recreation posts. The manufacturing sector is well represented at the Dumfries and Galloway level, suggesting the local area is well positioned to benefit from aspects of The Proposed Development, as shown in Table 13-11 below.

Table 13-11: Employee Jobs (2022)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Great Britain (%)
Total employee jobs	55,000	-	-	-
Full-time	35,000	63.6	67.3	68.8
Part-time	20,000	36.4	32.7	31.2
Employee Jobs by Industry				
B : Mining and quarrying	75	0.1	1.0	0.2
C : Manufacturing	5,000	9.1	6.9	7.6
D : Electricity, gas, steam and air conditioning supply	300	0.5	0.8	0.4
E : Water supply; sewerage, waste management and remediation activities	600	1.1	0.7	0.7
F : Construction	3,000	5.5	5.7	4.9
G : Wholesale and retail trade; repair of motor vehicles and motorcycles	9,000	16.4	12.9	14.0
H : Transportation and storage	2,500	4.5	4.1	5.0
I : Accommodation and food service activities	6,000	10.9	8.4	8.0
J : Information and communication	600	1.1	3.2	4.6
K : Financial and insurance activities	400	0.7	3.3	3.3
L : Real estate activities	1,000	1.8	1.3	1.9
M : Professional, scientific and technical activities	2,500	4.5	7.4	9.1
N : Administrative and support service activities	3,000	5.5	8.1	9.0
O : Public administration and defence; compulsory social security	2,250	4.1	6.5	4.7
P : Education	4,500	8.2	8.8	8.6
Q : Human health and social work activities	11,000	20.0	15.7	13.5
R : Arts, entertainment and recreation	1,750	3.2	3.0	2.4
S : Other service activities	800	1.5	1.6	2.0

Source: ONS Annual Population Survey

13.3.66. The region has a lower proportion of mining and quarrying roles, electricity and gas, construction, Information Technology and Communications (ITC) roles, financial service posts, professional services, education, public administrative and service related jobs.

Businesses

13.3.67. In terms of the business base, Dumfries and Galloway has a higher proportion of micro enterprise and smaller business units than witnessed at the national (Scottish) level. The incidence of larger businesses is lower at the regional level than recorded nationally as shown in Table 13-12.

Table 13-12: Business Counts (2023)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Scotland (%)
Enterprises				
Micro (0 to 9)	5,480	87.8	149,665	87.3
Small (10 to 49)	690	11.0	18,170	10.6
Medium (50 to 249)	65	1.0	2,820	1.6
Large (250+)	10	0.2	700	0.4
Total	6,245	-	171,350	-
Local Units				
Micro (0 to 9)	6,240	82.8	174,205	80.8
Small (10 to 49)	1,125	14.9	33,710	15.6
Medium (50 to 249)	165	2.2	6,740	3.1
Large (250+)	15	0.2	1,055	0.5
Total	7,540	-	215,710	-

Source: Inter Departmental Business Register

Qualifications

13.3.68. In terms of education attainment levels, the region has fewer higher qualified residents but has fewer residents with no qualifications than recorded at the Scottish and GB levels as show in Table 13-13.

Table 13-13: Qualifications (Jan 2021 – Dec 2021)

	Dumfries and Galloway (Numbers)	Dumfries and Galloway (%)	Scotland (%)	Great Britain (%)
RQF4 and above	44,200	53.0	55.1	47.3
RQF3 and above	61,400	73.6	73.7	67.8
RQF2 and above	74,900	89.7	87.1	86.5
RQF1 and above	76,300	91.3	87.9	89.0
Other qualifications	N/A	N/A	3.9	4.6
No qualifications	5,800	7.0	8.2	6.5

Source: ONS Annual Population Survey

Earnings

13.3.69. In terms of earnings, both weekly wages and hourly pay, the region has lower rates than those achieved at the Scottish and GB levels as presented in Table 13-14.

Table 13-14: Earnings by Place of Residence (2023)

	Dumfries and Galloway (£)	Scotland (£)	Great Britain (£)
Gross weekly place			
Full-time workers	580.8	702.8	682.6
Male full-time workers	584.0	727.9	728.3
Female full-time workers	579.4	670.8	629.1
Hourly pay – excluding overtime			
Full-time workers	14.82	18.10	17.49
Male full-time workers	14.29	18.24	18.14
Female full-time workers	16.57	17.93	16.65

Source: Inter Departmental Business Register

Tourism and Recreation Baseline

- 13.3.70. Sustainable tourism is one of the six economic sectors identified by the Scottish Government as growth sectors in its previous economic strategy. In 2022, sustainable tourism employed 7,000 people across Dumfries and Galloway, which represented almost 12% of all employment. The sector was made up of 608 businesses in 2023, which represents 10% of all businesses. The sector generated £188 million GVA (Scottish Government, 2023). It is known that the tourism sector continues to recover and move towards the figures achieved prior to the pandemic in 2019.
- 13.3.71. According to VisitScotland (VisitScotland, 2023), Dumfries and Galloway attracted 490,000 overnight trips by domestic and international visitors. These visitors spent 1.73 million nights in Dumfries and Galloway and spent £133 million, with an average overnight visitor spend of £273 per person. A summary is provided in Table 13-15.

Table 13-15: Visits, Nights and Spend in Dumfries and Galloway, 2023

	Visits	Nights	Spend
Domestic	440,000	1,513,000	£98 million
International	44,000	216,000	£35 million
Total	484,000	1,729,000	£133 million

Source: VisitScotland

- 13.3.72. In total, 88% of visitors were domestic visitors and 12% were international visitors, 4% of the these were from Europe, 4% from the USA and 5% from Australasia. Overall, 89% were on repeat visits and 7% were on a 'trip of a lifetime'.
- 13.3.73. In terms of trip motivation, 78% of respondents noted they were in Dumfries and Galloway for the 'scenery and landscape', which was the most popular reason, and this is consistent with Scotland as a whole.

- 13.3.74. 36% of visitors stayed in serviced accommodation and 66% stayed in non-serviced accommodation. This totals more than 100% due to some trips including both serviced and non-serviced accommodation. A review of VisitScotland's Guide to Lockerbie (<https://www.visitscotland.com/info/towns-villages/lockerbie-p239131>) identifies two main hotels in Lockerbie (The Kings Arm Hotel and The Crown Hotel) and The Crown in Lochmaben. There are also a range of other B&Bs, guest houses as well as self-catering properties in and around Lockerbie.
- 13.3.75. The most popular activity undertaken in Dumfries and Galloway by tourists was recorded as 'shopping' then visiting a country park or garden. This differs from the Scottish level assessment which stated visiting a castle or a fort and viewing architecture and buildings as the most popular activity.
- 13.3.76. The most visited attractions, both free and paid attractions, in Dumfries and Galloway by visitor numbers are displayed in Table 13-16, along with their respective distances from the Proposed Development. None of the most popular attractions are located within 30km of the Proposed Development, suggesting the local area is not a significant tourist location.

Table 13-16: Top 5 Most Visited Attractions in Dumfries and Galloway, 2023

Attraction	Number of Visitors	Approximate Drivetime Distance from Proposed Development (kms)
Threave Gardens	54,057	60km
Caelaverock Castle	18,509	35km
Broughton House and Garden	11,189	70km
Museum of Lead Mining	2,942	60km
New Abbey Corn Mill	2,0494	40km

Source: Moffat Centre

- 13.3.77. Facilities in the area closest to the Proposed Development are found in Lockerbie which is around 6km south west of the Proposed Development.
- 13.3.78. Lockerbie is the first sizeable town north of the Scottish Border and is on the main road and rail routes between Glasgow and Carlisle.
- 13.3.79. Lockerbie has an agricultural past and was once home to Scotland's largest lamb market. Much of the town is built from red sandstone and the town hall stands out with its clock tower. There is a local ice rink and there are various shops, including a pottery, within the town, and a variety of places to dine.
- 13.3.80. In Dryfesdale Cemetery, on the outskirts of the town, there is a memorial garden that is a tribute to the victims of the 1988 Lockerbie Air Disaster. The Dryfesdale Lodge Visitors' Centre hosts a permanent exhibition room which displays ten history panels depicting Lockerbie's unique past stretching from its pre-historic origins to 1988's terrorist attack and beyond. Other attractions locally include Lochmaben Castle and Applegarthtown Wildlife Sanctuary.

There are local golf courses in Lockerbie and nearby Lochmaben. Lockerbie Farmers Market is held monthly on the third Saturday of the month.

- 13.3.81. Lockerbie provides a selection of local shops, restaurants and cafés, accommodation provision and local services. In terms of accommodation provision, there are three hotels in and around Lockerbie, the Crown Hotel, the Kings Arms Hotel and Best Western Dryfesdale Country House Hotel at Junction 17 off the M74.
- 13.3.82. In addition to these larger accommodation providers within these settlements, there are some accommodation providers in rural locations within the study area. This includes Bishopcleugh Bed and Breakfast which is the closest accommodation provision to the Proposed Development.
- 13.3.83. Walking and hiking is a popular day activity in Dumfries and Galloway. Perhaps the most well known of trails is the Southern Upland Way, which is located approximately 25km to the north of the Proposed Development. The Southern Upland Way is a 214 mile walking route starting from Portpatrick on the south west coast and finishing at Cockburnspath on the east. There are no summits above 3,000ft, but over 80 peaks rise above 2000ft. It is recognised as one of Scotland's Great Trails. It is closer to Moffat than Lockerbie and is not within 25km of the Proposed Development. No core paths provide access to the Proposed Development Site.
- 13.3.84. Other core paths, rights of way paths and permissive paths, including heritage paths and Scottish hill tracks, dissect the locality of the Proposed Development, providing access to the landscape by recreational users.
- 13.3.85. National Cycle Network (NCN) Route 74 lies to the west of the detailed study area. NCN 74 connects Gretna and Glasgow following the same transport corridor as the main rail and road routes (the M74).

Assessment of Effects and Mitigation

- 13.3.86. This section is split into three subsections: Construction, Operational and Cumulative effects. As noted in the methodology section, Decommissioning has been scoped out of this section.
- 13.3.87. The Proposed Development could benefit Dumfries and Galloway and Scottish economies in a number of different ways. This section sets out an assessment of the socio-economic impacts of the Proposed Development across a range of key indicators. It also presents an overview of secondary research on tourism behaviours in relation to onshore wind farms.
- 13.3.88. Each of the six turbines will have a generating capacity of approximately 7.2 MW based upon the candidate turbine, resulting in a total generating capacity of 43.2 MW. The assessment also considers the socio-economic effects of the 43 MW battery energy storage system (BESS). These MW figures are used to estimate the likely quantifiable economic effects at construction and

operation stages, in the form of jobs, turnover and GVA. Further qualitative effects are also presented in this section.

Economic Impacts

Construction

- 13.3.89. This is based on research completed by RenewableUK (RenewableUK, 2015) into the economic benefits of onshore wind. This research suggests that the capital cost of an onshore wind farm can be based on a proxy of £1.32 million per MW. It should be noted that there has been substantial inflation since the publication of this research and therefore the estimates presented here are conservative and likely to be higher. In total, it is therefore estimated that approximately £57.0 million could be invested into the Proposed Development in capital expenditure (CAPEX).
- 13.3.90. The Proposed Development also comprises a battery storage component with a storage capacity of 43 MW. A grid connection is expected in 2032. The construction and development costs per MW for the battery storage component is estimated at £300k (RegenSW, 2019). Therefore, the total construction and development costs for the Proposed Development are anticipated to reach £69.9 million.
- 13.3.91. Table 13.17 below shows the geographical distributions of investment into CAPEX during the construction phase. This is based on the proxies derived from RenewableUK research on the direct and wider economic impacts of onshore wind in the UK.

Table 13-17: Construction Phase – Estimated CAPEX

Geographical Distributions		
	%	£ million
Dumfries and Galloway	12.0	8.4
Scotland	36.0	25.8
UK	47.0	32.9
Outside UK	53.0	37.0
Total	100.0	69.9

Source: RenewableUK

- 13.3.92. This research also presented that the breakdown of the core components are estimated to be:
- Turbine: 65% (£45.4 million);
 - Balance of Plant: 28% (£19.6 million); and
 - Grid connection 7% (£4.9 million)

- 13.3.93. It is within the Balance of Plant area where there is expected to be main contract and sub-contract opportunities for local businesses.
- 13.3.94. It is estimated that around a third of investment into capital expenditure will occur within Scotland (£25.8 million) as a whole, with a third of that figure accruing to Dumfries and Galloway (£8.4 million).
- 13.3.95. The RenewableUK research also indicates that, on average, there is one employee for every £137,942 in construction investment and a GVA /investment rate of 0.432. Using the figures from Table 13.17, the employment rate and estimated GVA during construction can be estimated. This is set out in Table 13-18. It should be noted that the different rows are a subset of the total, therefore those jobs in Scotland include those in Dumfries and Galloway.

Table 13-18: Construction Phase Job and GVA Estimates

	Estimated Investment	Estimate Job Creation	Estimated GVA
	£ million	No.	£ million
Dumfries and Galloway	8.4	Up to 61	3.6
Scotland	25.8	Up to 187	11.1
UK	32.9	Up to 239	14.2
Outside UK	37.0	Up to 268	16.0
Total	69.9	Up to 507	30.2

Source: RenewableUK

- 13.3.96. As set out in Table 13-18, around 187 jobs are expected to be created in Scotland during the construction phase, with approximately 61 created in Dumfries and Galloway itself. The Proposed Development could also generate £11.1 million in GVA to Scotland, and £3.6 million to Dumfries and Galloway. As noted above the 187 jobs (and GVA) in Scotland include 61 in Dumfries and Galloway and 126 in the rest of Scotland.
- 13.3.97. Construction is likely to result in a temporary **Minor Beneficial Effect** on the economy in Dumfries and Galloway, and a **Minor Beneficial Effect** on the economy in Scotland. As noted previously, the main contract and sub-contract opportunities for local businesses is within Balance of Plant activities which are forecast to be around 28% or around £20 million of the total project value.

Operational Impacts

- 13.3.98. Table 13-19 shows the anticipated investment in operational expenditure (OPEX) during the operation and maintenance phase of the Proposed Development. All impacts at this phase are represented annually.
- 13.3.99. The levels of OPEX have been estimated using data from the RenewableUK 2015 study, which details the average costs of onshore wind farm

development in the UK. It is estimated that for every MW, £59,867 is spent annually during this phase. The BESS plant is unlikely to have any notably operation and maintenance impacts, and additionally there are no proxies for this calculation. Therefore, the operational impacts are based on the 43.2 MW from the wind turbines only.

- 13.3.100. Using this figure, an overall figure of approximately £2.6 million can be estimated (Table 13-19). The geographical distribution is also provided through this study

Table 13-19: Operational Phase – Estimated OPEX

Geographical Distributions		
	%	£ million
Dumfries and Galloway	42.0	0.7
Scotland	58.0	1.5
UK	87.0	2.3
Outside UK	13.0	0.3
Total	100.0	2.6

Source: RenewableUK

- 13.3.101. It is anticipated that 58% of annual OPEX will occur within Scotland and 42% with Dumfries and Galloway, with £1.5 million accruing to Scotland, of which £0.7 million accruing at the Dumfries and Galloway level.
- 13.3.102. The annual OPEX will produce direct economic benefit to Scotland and Dumfries and Galloway in terms of employment and GVA creation. RenewableUK research also indicates that, on average, there is one employee for every £121,935 in operational investment and a GVA/investment rate of 0.430. Using these assumptions, the employment rate and GVA can be estimated. This is set out in Table 13-20. It should be noted that the different rows are a subset of the total, therefore those jobs in Scotland include those in Dumfries and Galloway.

Table 13-20: Operation Phase Job and GVA Estimates

	Estimated Turnover	Estimate Job Creation	Estimated GVA
	£ million	No.	£ million
Dumfries and Galloway	0.7	Up to 6	0.3
Scotland	1.5	Up to 12	0.6
UK	2.3	Up to 19	1.0
Outside UK	0.3	Up to 2	0.1
Total	2.6	Up to 21	1.1

Source: RenewableUK

- 13.3.103. As set out in Table 13-20, up to 12 jobs are expected to be created annually in Scotland during the operation and maintenance phase, with around six jobs being created in Dumfries and Galloway. The Proposed Development will also generate £0.6 million in GVA annually for Scotland, and £0.3 million for Dumfries and Galloway. As noted above, the 6 local jobs are part of the 12 Scottish jobs.
- 13.3.104. The effect of operations and maintenance expenditure on the Dumfries and Galloway and the Scottish economies was assessed as **Negligible**.

Tourism and Recreation Impact Assessment

- 13.3.105. There have been a number of research exercises completed regarding the opinions of tourists towards wind farms. A summary of the most relevant and highly regarded research is included in this sub-section.
- 13.3.106. A recent, and regular, piece of research is issued quarterly by the Department for Energy Security and Net Zero (DESNZ), in their 'Public Attitudes Tracker' (DESNZ, 2024). In March 2025, this reported that support for renewable energy remained 82% of people supported using renewable energy like wind, solar, and biomass for electricity, fuel, and heat (down from 84% in Summer 2024). Overall support has declined from 87% at the start of the time series in Autumn 2021, with fluctuations over time.
- 13.3.107. In 2021, BiGGAR Economics (BiGGAR Economics, 2021) published research into the relationship between the onshore wind and tourism sectors in Scotland. This study was undertaken to find empirical evidence of a relationship between the development of onshore wind farms and the tourism sector in Scotland.
- 13.3.108. Their analysis of 44 wind farm case studies in Scotland found no evidence of a link between wind farm development and trends in tourism employment. The analysis of trends at the local authority area found no relationship between the growth in the number of wind turbines and the level of tourism-related employment.
- 13.3.109. Overall, the report confirms that the tourism sector is not adversely affected by onshore wind farms. In fact, the tourism sector has continued to grow across Scotland as more wind farms have been developed.
- 13.3.110. Some of the accommodation providers, and food and drink outlets, will also experience a positive impact from hosting contractors during the construction and ongoing maintenance of the Proposed Development.
- 13.3.111. The acceptability of the visual impact on tourists will be a subjective opinion of the individual visitors. Taking into account the various surveys discussed previously relating to the impact of wind farms on tourists it is concluded that the presence of the wind farm would not have a significant impact on their

decision to visit there and the impact is therefore predicted to be Negligible at both the Dumfries and Galloway and Scottish levels.

Cumulative Effects

Cumulative Construction Effects

- 13.3.112. The cumulative effects of the construction phase of the Proposed Development along with the cumulative sites as listed in Chapter 6 would generate additional construction related spend, employment and GVA.
- 13.3.113. This scale of wind farm activity in the area suggests there is a substantial economic opportunity in terms of cumulative investment and resultant employment impacts as local capacity to take up the opportunities grow.
- 13.3.114. The addition of the Proposed Development will positively contribute to this and could result in increased beneficial effects in terms of job creation and opportunities for local businesses. It is anticipated that when considering the schemes cumulatively, there would therefore be a **Minor Beneficial Effect** on the economy at the regional and national levels on socio-economic during construction.
- 13.3.115. It is beyond the scope of this chapter to calculate the likely direct employment and economic benefits of all the other surrounding schemes.

Cumulative Operational Effects

- 13.3.116. The cumulative effects of the operation phase of the Proposed Development along with cumulative sites as listed in Chapter 6 would generate additional operation related spend, employment and GVA.
- 13.3.117. This scale of wind farm activity in the area suggests there is a substantial economic opportunity in terms of cumulative investment and resultant employment impacts as local capacity to take up the opportunities grow.
- 13.3.118. The addition of the Proposed Development will positively contribute to this and could result in increased beneficial effects in terms of job creation and opportunities for local businesses. It is anticipated that when considering the schemes cumulatively, there would therefore be a Minor Beneficial Effect on the economy at the Local Regional and National Level on socio-economic during operation.

Cumulative Tourism and Recreation Effects

- 13.3.119. The Proposed Development is in a remote location where there is not a high density of consented wind farm schemes which could cumulatively impact public access in the local area. As result of the review of secondary sources on public and tourist attitudes to wind farms a **Negligible** cumulative effects on public access and recreation are predicted, these effects are effectively

already accounted for when the Proposed Development is considered in isolation.

- 13.3.120. It is possible that the construction of the Proposed Development simultaneously with other schemes nearby could lead to a greater decrease in the availability of tourist accommodation within the area surrounding the site, particularly as there are limited accommodation opportunities within the local area.
- 13.3.121. However, it is unlikely that this would cause a significant effect, and businesses would benefit during the 'off peak' season when there would usually be less demand for accommodation, therefore, a **Negligible** cumulative effect is predicted at the regional and national levels.
- 13.3.122. Evidence on the effect of wind farms to tourism indicates that windfarms have a limited effect on visitors' decisions to holiday in Scotland. Therefore, when considering the cumulative effects, it is expected that these would be not significant. As such a **Negligible** cumulative effect on tourism is predicted.

Wider Economic Impacts

- 13.3.123. In addition to the stated economic opportunities during the construction and operational phases, there are also a variety of wider economic impacts which should be noted as having positive effects on the regional and national economies, as discussed below.

Supporting policy objectives

- 13.3.124. The Proposed Development can play an important role in supporting regional and national policy objectives. Importantly, the Proposed Development can support the ambitions set out in the national and regional economic strategies as set out earlier in this report, notably a new and significant capital investment, whilst supporting the area's green credentials, supporting local business through supply chain opportunities and thereby creating jobs and offering skills development. It will also play a role in supporting the drive for high value sector growth, increasing wages and reducing the migration of young people.

Local supply chain opportunities

- 13.3.125. The Applicant will host 'Meet the Buyer' events and suitably qualified local firms will be invited to bid for different aspects of construction, such as foundation laying and electrical works. Construction materials are normally sourced locally (i.e. within Dumfries and Galloway) and local transport and plant hire companies used wherever possible. This initiative was deployed on the Applicant's Windy Standard Wind Farm, which encouraged businesses to successfully tender for contract works.

Worker expenditure

- 13.3.126. Renewable UK research estimates that the expenditure of workers who visit the local area benefit the accommodation and food service sector to the value of around £7,500 per MW constructed. This would suggest, based on a 43.2 MW Proposed Development, that further financial benefits of £324,000 would accrue at the regional level, largely benefiting local accommodation providers. The wider 'knock-on' impacts can in turn support the supply chain of other activities such as the spending habits of retail operations and accommodation providers.

Pre-construction benefits

- 13.3.127. As the planning of the Proposed Development is underway, there have already been positive financial and economic effects to local and national business that have been commissioned to support the development phase. This includes a range of planning, engineering and environmental services. This work is ongoing and there will continue to be financial benefits to companies involved in helping to develop and design the Proposed Development. These financial benefits have not been presented as these works are ongoing but they are of a notable scale.

Income effects

- 13.3.128. The economic analysis has focused on the GVA effects of generated employment as this is the 'real' impact on the economy. However, it is worth noting that new employment will generate additional wages and salaries, an element of which will be spent in Dumfries and Galloway and Scotland.

Exchequer effects

- 13.3.129. The analysis has not attempted to estimate the additional exchequer effects as result of taxes borne (Corporation Tax, Employer National Insurance and Irrecoverable VAT) and taxes collected (Income Tax, Employee National Insurance and non-domestic business rates). These are additional financial benefits which will support the regional and national economies.

Effects on landowners

- 13.3.130. There will be a financial transaction to the landowners which may support diversification and/or other spending in the local, regional and national economy.

Perception benefits

- 13.3.131. The employment, economic and financial impacts are enhanced through wider strategic impacts associated with strengthening the perception of the area as a place to live, work, visit and invest.

Effects on tourism and recreational assets

- 13.3.132. It is not anticipated that there will be any significant negative impact on the tourism industry or recreational assets as a result of the Proposed Development.

Land management and ecological enhancements

- 13.3.133. The Proposed Development incorporates proposals for biodiversity enhancement and further details are set out in EIA Report Chapter 8 'Ecology' and the Outline Biodiversity and Habitat Management Plan. This includes adopting a suitable grazing scheme which will manage current suitable marsh fritillary habitat and enhance adjacent habitat. The scheme will predominantly focus on grassland management through cattle. And extensive cattle grazing to maintain and enhance butterfly areas

Battery Storage

- 13.3.134. The project also proposes to include a battery storage facility of up to 43MW. The Applicant is currently exploring how to best make use of this capability

Community Benefits Package

- 13.3.135. The intended community benefit package for the Proposed Development includes a community benefit fund. Income streams from this community benefits package will provide long term revenue to support local community initiatives, which will be administered by a representative local group, potentially a community council. Depending on the initiatives and projects brought forward by the local communities, these could provide positive benefits to the local economy, local facilities and the general quality of life for local residents. The Applicant commits to a community benefit fund of £5,000 per MW of installed wind turbine generation output per annum, throughout the operational period of the Proposed Development. Based on the 43.2 MW capacity and an operational period of 35 years this is equivalent to at least £7.56 million of community investment, or £216,000 per annum.
- 13.3.136. As technology develops it may be that once the Proposed Development is constructed, turbines may be rated at a higher capacity and so community benefit payments would be adjusted to reflect this increase.

Mitigation Measures

- 13.3.137. No mitigation measures for socio-economics, tourism, recreation and land use have been considered for the Proposed Development as there are no significant adverse effects anticipated, as presented in the Assessment of Effects and Mitigation.
- 13.3.138. As good practice, it is proposed that a Construction Traffic Management Plan (CTMP) will be implemented for the Proposed Development to manage the

effect of construction traffic on the public road network, following the principles set out in Chapter 12.

- 13.3.139. This will include measures such as ensuring roads are maintained in a clean and safe condition, deploying a wheel washing facility onsite to reduce mud and debris being deposited onto surrounding roads and the erection of site signage along the traffic route to warn people of construction activities and associated construction vehicles
- 13.3.140. Furthermore, signage outlining more information about the site and sites works will be presented to inform people of the work, and appropriate re-routing where required will be presented through on site signage.

Residual Effects

- 13.3.141. As presented in the Assessment of Effects and Mitigation section there are no significant adverse effects anticipated for the Proposed Development.
- 13.3.142. There are potential minor or negligible beneficial effects in relation to the development, construction and operation phases of the Proposed Development, both in employment and GVA terms in the context of local and national economies.
- 13.3.143. There are potential beneficial effects in relation to the operation phase of the Proposed Development, both in employment and GVA terms in the context of local and national economies, in the context of the cumulative sites.

Summary and Statement of Significance

- 13.3.144. The socio-economic impact during construction of the Proposed Development was assessed as minor beneficial in Dumfries and Galloway, and minor beneficial in Scotland. The annual economic impacts related to operation were assessed as negligible beneficial for both study areas. All effects have been assessed as not significant.
- 13.3.145. Surveys of the public's attitudes to wind farms confirms that tourism is not adversely affected by onshore wind farms. There are no core paths accessing the site and no visitor attraction adjacent to the Proposed Development and any other attractions in the wider sub-region are not predicted to suffer any adverse effects as the review of secondary sources confirms that tourists are not dissuaded from visiting or revisiting an area where there are wind farms.
- 13.3.146. Hence, even where significant visual effects are predicted during the operational phase of the Proposed Development, no significant effects on tourism receptors are expected.
- 13.3.147. Table 13-21 provides a Summary and Statement of Significance for Socio-economic, Tourism and Recreation.

Table 13-21: Operation Phase Job and GVA Estimates

Potential effect	Magnitude Effect	Assessed Effect	Statement of Significance
Socio-economic – Construction Phase			
Capital Spend	£8.4m at the Dumfries and Galloway level	Minor beneficial	Not Significant
Employment	Up to 61 direct jobs at the Dumfries and Galloway level	Minor beneficial	Not Significant
GVA	£3.6m in direct GVA at the Dumfries and Galloway level	Minor beneficial	Not Significant
Socio-economic – Operation Phase			
Operational Spend	£0.7m across Dumfries and Galloway per annum	Negligible	Not Significant
Employment	Up to six direct FTEs at the Dumfries and Galloway level	Negligible	Not Significant
GVA	A direct annual injection of £0.3m at the Dumfries and Galloway level	Negligible	Not Significant
Tourism and Recreation			
National and Regional Attractions	Minimal / very little effect due to distance from Proposed Development	Negligible	Not Significant
Local Attractions	Attractions are not expected to have their characteristics affected by the Proposed Development. Therefore, minimal / very little effect	Negligible	Not Significant
Trails and Paths	Very little or no effect on the behaviour of visitors/tourists that use trails and paths as the Proposed Development is not expected to alter their features or characteristics.	Negligible	Not Significant
Tourism Accommodation	Likely to be beneficial effects for local accommodation providers within close vicinity of the Proposed Development at the construction, and during mature operation phases.	Negligible	Not Significant

13.3.148. In summary, the Proposed Development is expected to benefit the local and national economy in the following respects:

- Pre-development investment and planning fees, benefitting a range of Scottish-based companies and organisations;
- Total expected CAPEX investment of £69.9 million, of which £25.8 million potentially benefitting Scottish companies and £8.4 million potentially

benefitting local companies. This includes opportunities for local businesses to support in terms of groundwork, landscaping, civil engineering, and construction contracts;

- Up to 61 construction jobs and GVA of £3.6 million in Dumfries and Galloway;
- Total annual operating and maintenance expenditure of £2.6 million per annum, of which £1.5 million potentially benefitting Scottish companies and £0.7 million benefitting local companies;
- Up to six operation and maintenance jobs and GVA of £0.3 million in Dumfries and Galloway;
- Wider financial benefits linked to community benefit funding, rent, rates and taxation, including local business rates and community benefits funding of £216,000 per annum and around £7.6 million (2024 prices) over the proposed 35-year operational life;
- A robust and equitable community benefits delivery package, developed in conjunction with the local communities, with annual allocations having been provisionally agreed with local community groups.
- A range of wider qualitative benefits such as supply chain impacts, perception benefits, community wealth building effects and enhancements in local community infrastructure.

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