



Arklow Bank Wind Park 2

Environmental Impact Assessment Report

Volume III, Appendix 21.2: Supplementary Socio-economic Analysis
(RFI March 2026)

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Contents

1. Executive Summary	1
2. Introduction	2
3. Offshore Wind Development and Tourism	3
4. Offshore Wind Development and Wellbeing	19
5. Conclusions	30



1. Executive Summary

Analysis of offshore wind farm case studies in the UK finds no evidence of a link between offshore wind development and trends in tourism employment or trends in wellbeing.

This report analyses trends in tourism employment in local areas which are likely to have visibility of offshore wind developments in the UK. The purpose of this work is to inform the assessment of potential tourism impacts of Arklow Bank Wind Park 2, a proposed offshore wind development in Ireland.

Of the six offshore wind farms analysed, four experienced increases in tourism employment between the year prior to the commencement of offshore construction and the mid-point of the offshore construction period, while one area experienced no change in tourism employment, and one experienced a reduction.

Between the year prior to the commencement of offshore construction, and the year following completion of the offshore construction, tourism employment increased in three of the analysed areas and fell in three. Of those three areas where tourism employment fell, all three experienced increases in tourism employment to above pre-construction levels over time. Together, this analysis suggests there is no pattern demonstrating a correlation between visible offshore wind developments and trends in tourism employment.

This report also analyses the relationship between offshore wind development and wellbeing. Academic literature confirms that while long-term sustainability goals will support overall wellbeing, the visual and psychological factors associated with wind farms can be a source of annoyance for a minority. However, there is limited evidence of a direct causal link between proximity to turbines and physiological health effects.

An assessment of ONS (Office for National Statistics) wellbeing data for four offshore sites provided no strong, consistent evidence of wellbeing decline across the larger local areas. Overall, exploring renewable energy such as offshore wind at scale is essential to dealing with the anticipated impacts and risks from climate change, which will support long-term wellbeing. Nevertheless, it is not possible to rule out that a minority will be vulnerable to negative wellbeing impacts.



2. Introduction

As part of the Response to Request for Information, BiGGAR Economics has supplemented the EIAR with further consideration of the potential effect of offshore wind farms on tourism and wellbeing in response to RFI line items 15a, 15b, 15c, and 15d.

2.1 Background

Arklow Bank Wind Park 2 is a proposed offshore wind farm which would be located approximately 6 to 15km from Arklow in County Wicklow on the East Coast of Ireland. Following public responses to the environmental impact assessment, RFI line items 15a and 15b highlighted further concerns about the potential effects of the development on the tourism economy and line items 15c and 15d required further analysis of the potential impact on wellbeing, given the relatively close proximity of Arklow Bank Wind Park 2 to the coast, and its consequent visibility. As the scale of Irish offshore wind projects currently in operation is limited, this report analyses the relationships between offshore wind development and tourism and offshore wind development and wellbeing in the UK.

2.2 Report Structure

The structure of this report is:

- Section 3 analyses the relationship between offshore wind development and tourism;
- Section 4 analyses the relationship between offshore wind development and wellbeing; and
- Section 5 summarises and concludes the report.



3. Offshore Wind Development and Tourism

Various factors influence tourism activity, but the evidence does not suggest a relationship between the development of offshore wind and a reduction in tourism

3.1 Literature Review

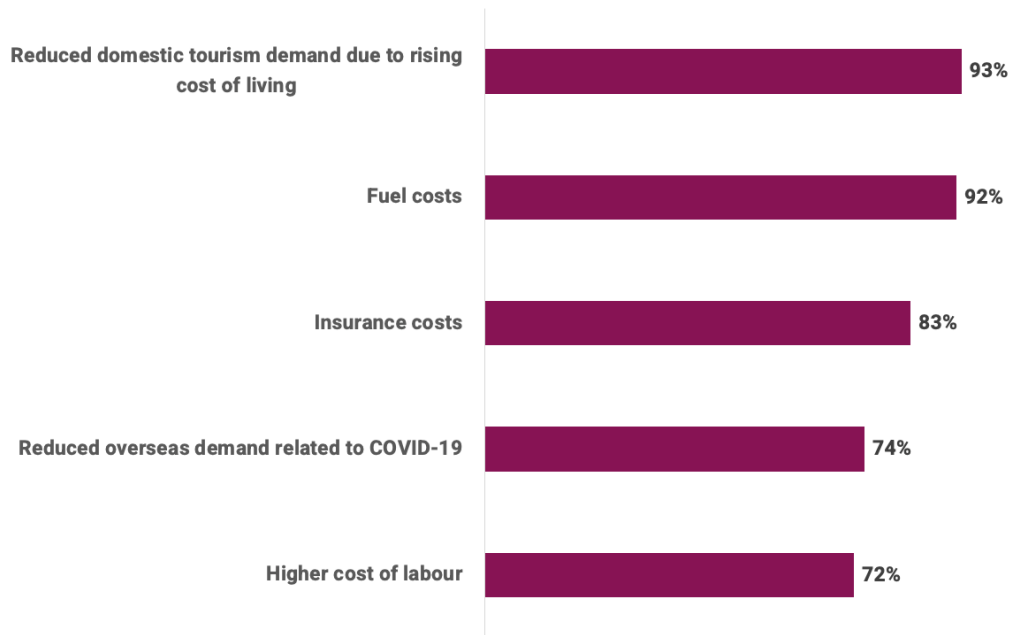
3.1.1 Issues for the Coastal Tourism Sector

There are a number of factors which influence the performance of the tourism sector in Ireland, including coastal tourism. The key factors are those related to the general performance of the Irish economy, which dictate how much extra money people have to spend on holidays, and the relative attractiveness of Ireland as a tourism destination for international visitors.

A recent survey of marine and coastal recreational tourism¹ providers investigated the anticipated impact of several issues on their businesses over the subsequent 12 months. Respondents rated the expected effects using a scale that ranged from 'large negative impact' to 'large positive impact.' Figure 3-1 illustrates the issues that the highest number of respondents expected would have a large or small negative impact on their business².

1 Deely, J., Hynes, S., Cawley, M. (2024). A Survey of Marine and Coastal Recreational Tourism Providers, SEMRU Publication, University of Galway.

2 Note that this survey was completed shortly after the Covid-19 pandemic and the sector had not fully recovered at that point.



Source: University of Galway (2024), A Survey of Marine and Coastal Recreational Tourism Providers

Figure 3-1 Issues Expected to have a Large or Small Negative Impact on Respondent's Business Over the Next 12 Months

It is worth noting that the primary concern amongst operators was that the Irish people would not be able to travel as frequently as their incomes were falling relative to inflation. Since this survey was completed in 2023, wage growth in Ireland has started to outpace inflation³ and therefore the number of domestic tourism trips has increased⁴.

3.1.2 Perceptions of Offshore Wind Farms

Recent research indicates a broadly positive public and tourist perception of offshore wind energy in Ireland. In 2024, a survey of the Irish public undertaken by Wind Energy Ireland (WEI) found that 75% of respondents were in favour of using offshore wind power in the Republic of Ireland (ROI).⁵ When presented with the statement "offshore wind farms can help with energy security", 83% said they strongly agreed or tended to agree.

This approval is complemented by findings from the 2023 Fáilte Ireland survey of visitors to Brittas Bay in County Wicklow, an area with visibility of Arklow Bank Wind Park 1 (ABWP1). The survey found that 18% of respondents noticed the turbines on their way to the beach, but none noted any developments standing out while at Brittas Bay itself. Over three-quarters of visitors reported coming for the beautiful scenery, with 65% stating the landscape exceeded their expectations, suggesting the visual presence of the turbines did not compromise the visitor experience.

The most extensive analysis of public perception of offshore wind farms in Ireland was published by Cronin et al. in 2021.⁶ An online survey of the Irish public included a number of questions relating to

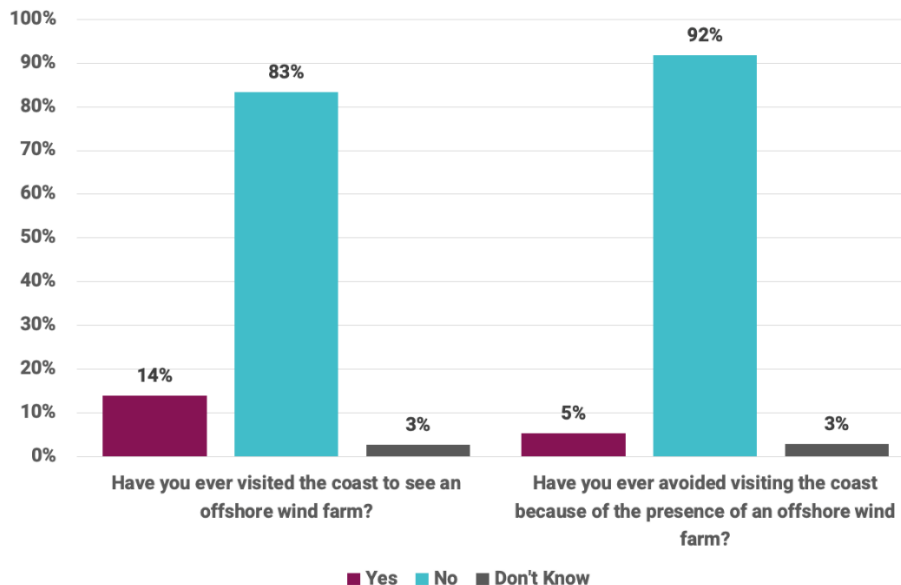
³ Central Bank of Ireland (Dec 2024), Quarterly Bulletin – QB4 – December 2024

⁴ CSO (2025) Household Travel Survey Quarter 4 and Year 2024

⁵ WEI (2024), Wind Energy Attitudes Monitor 2024

⁶ Cronin, Y., Cummins, V., & Wolsztynski, E. (2021). Public perception of offshore wind farms in Ireland. *Marine Policy*, 134, 104814

tourism. As shown in Figure 3-2, the survey found that, when asked if they had avoided visiting the coast because of the presence of an offshore wind farm, the significant majority (92%) said No, with 5% of respondents saying Yes (and 3% responding Don't Know). In comparison, when asked if they had ever visited the coast to see an offshore wind farm, 14% said Yes, 83% said No (and 3% said Don't Know). This suggests an overall positive perception of offshore wind farms and tourism, with a higher proportion of the Irish public having travelled to view an offshore wind farm than those who had actively avoided areas where they are present.



Source: Cronin, Y., Cummins, V., & Wolsztynski, E. (2021). Public perception of offshore wind farms in Ireland. *Marine Policy*, 134, 104814

Figure 3-2 Irish Public Tourism Perceptions of Offshore Wind

However, as surveying perceptions do not act as empirical evidence of the potential relationship between the tourism economy and offshore wind, this section analyses trends in tourism-related employment in the local areas of nearshore offshore wind developments.

3.2 Tourism Employment Near Offshore Wind Farms

3.2.1 Data

As of 2025, ABWP1 is the only offshore wind farm in Ireland. Having been constructed between 2003 and 2004, data on tourism-related employment for the period prior to the development of Arklow Bank Phase 1 is not available from the Central Statistics Office (CSO), which collected sector specific employment data at the national level only prior to 2008.

Consequently, this addendum analyses the potential effect of UK offshore wind farms. The UK has around 45 operational offshore wind projects, enabling analysis of projects which are close enough to the coast to be comparable to Arklow Bank Wind Park 2, and for which area specific employment data is available.



The relationship between offshore wind farms and tourism is analysed using the Business Register and Employment Survey (BRES),⁷ published by the independent producer of official statistics for the UK, the ONS. To measure the potential local impact on tourism employment, employment data was collected for coastal Mid-Layer Super Output Areas (MSOA) which are likely to have visibility of the offshore wind developments, the relevant local authority areas, and Great Britain. Employment data was collected for the sustainable tourism as defined by the Scottish Government.⁸ This enables analysis of specific tourism-related sectors as opposed to broader sectors more likely to be influenced by local populations.⁹

3.2.2 Offshore Wind Farm Selection

There are several offshore wind farm developments in the UK that are close enough to the coast to be visible. However, not all of them were constructed within the time frame of the ONS employment data to enable a successful assessment.

The offshore wind turbines at Arklow Bank Wind Park 2 will be between 6km and 15km from the shore. There are six offshore wind developments in the UK that are located within 13km of the nearest coast and constructed within the appropriate time frame. This includes:

- Blyth Offshore Demonstrator;¹⁰
- Humber Gateway Offshore Wind Farm (OWF);¹¹
- Lincs OWF;¹²
- Ormonde OWF;¹³
- Rampion OWF;¹⁴ and
- Gwynt y Môr OWF.¹⁵

A summary of the selected offshore wind farms is shown in Table 3-1.

⁷ Between 2015 and 2016, the ONS adjusted the BRES collection methodology to include employees registered for Pay as You Earn (PAYE) only. To create a consistent time series, employment data for post 2015 years has been adjusted where the relevant timeline of the development crosses this period. This adjustment was made by applying the ratio of employment captured under the previous methodology (excluding PAYE only employment) to the updated total employment figures for Great Britain in 2015 to relevant study areas.

⁸ Scottish Government (2025), Sector Briefing – Sustainable Tourism.

⁹ Sustainable tourism sectors include: SIC 55.1: Hotels and similar accommodation, SIC 55.2: Holiday and other short-stay accommodation, SIC 55.3: Camping grounds, recreational vehicle parks and trailer parks, SIC 56.1: Restaurants and mobile food service activities, SIC 56.3: Beverage serving activities, SIC 79.12: Tour operator activities, SIC 79.9: Other reservation service and related activities, SIC 91.02: Museum activities, SIC 91.03: Operation of historical sites and buildings and similar visitor attractions, SIC 91.04: Botanical and zoological gardens and nature reserve activities, SIC 93.11: Operation of sports facilities, SIC 93.199: Other sports activities (not including activities of racehorse owners) nec, SIC 93.21 Activities of amusement parks and theme parks, and SIC 93.29: Other amusement and recreation activities.

¹⁰ For which the local study area is defined as the MSOAs: Northumberland 006, Northumberland 008, and Northumberland 009.

¹¹ East Riding of Yorkshire 039

¹² East Lindsey 010, East Lindsey 012, East Lindsey 014, and East Lindsey 015.

¹³ Barrow-in-Furness 009 and Barrow-in-Furness 010

¹⁴ Adur 004, Adur 005, Adur 007, Adur 009, Adur 010, Worthing 009, Worthing 010, Worthing 011.

¹⁵ Conwy 001, Conwy 002, Conwy 003, Conwy 004, Conwy 005, Conwy 007, Conwy 009, Conwy 010, Denbighshire 001, Denbighshire 002, and Denbighshire 004.



Table 3-1 Selected Offshore Wind Farms for Tourism Analysis

Offshore Wind Farm	Local Authorities	Coastal Distance	First Turbine Constructed	Last Turbine Constructed
Blyth Offshore Demonstrator	Northumberland	5km	2017	2017
Humber Gateway OWF	East Riding of Yorkshire	8km	2012	2015
Lincs OWF	Lincolnshire	8km	2012	2013
Ormonde OWF	Cumbria	10km	2011	2011
Rampion OWF	Brighton & Hove City and West Sussex	13km	2017	2017
Gwynt y Môr OWF	Conwy and Denbighshire	13km	2013	2014

3.2.3 Analysis

Table 3-2 details the change in local tourism employment across two periods:

- Between the year prior to the commencement of offshore construction (pre-construction) and the mid-year in the offshore construction period (Mid-Construction); and
- Between the pre-construction year and one year post offshore construction (post-construction).

Of the local areas of the six offshore wind farms analysed, between pre-construction and mid-construction, five experienced an increase in tourism employment, while one experienced a reduction in tourism employment.

Comparing the pre-construction and post-construction years, three local areas experienced reductions in tourism employment, and three experienced increases in tourism employment.



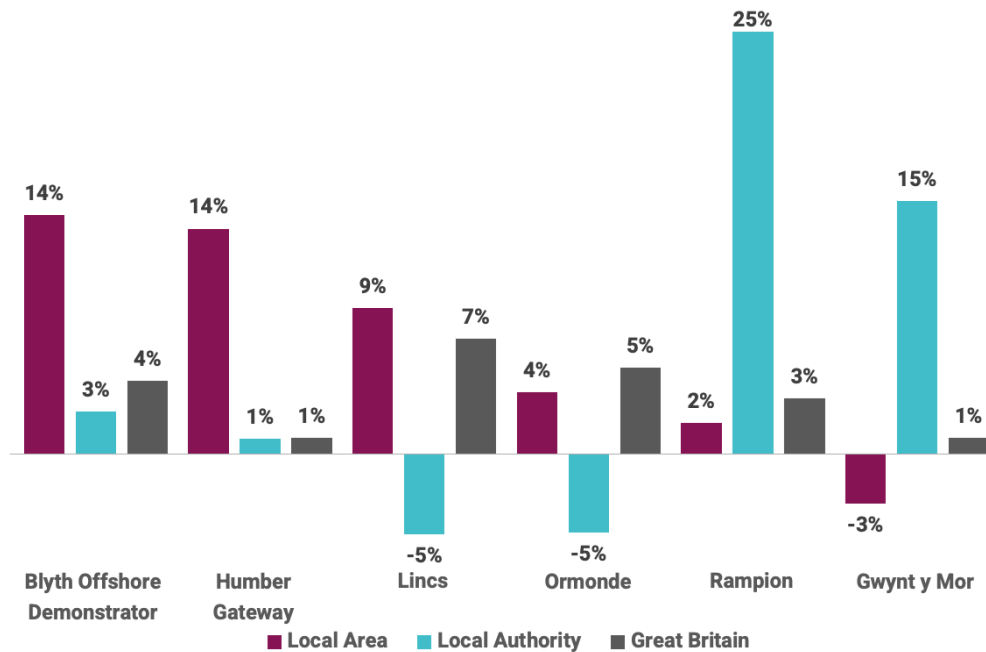
Table 3-2 Change in Local Sustainable Tourism Employment

Wind Farm	Pre-Construction Employment	Mid-Construction Employment	% Change	Post-Construction Employment	% Change
Humber Gateway	370	420	14%	480	30%
Rampion	13,440	13,685	2%	14,950	11%
Gwynt y Mor	5,870	5,695	-3%	6,035	3%
Lincs	4,005	4,355	9%	3,790	-5%
Ormonde	135	140	4%	115	-15%
Blyth Offshore Demonstrator	1,150	1,315	14%	925	-20%

Source: BiGGAR Economics Analysis of Business Register and Employment Survey Data

Figure 3-3 compares the change in sustainable tourism employment in the local areas of the wind farms to the change in the sector’s employment in the regional area (made up of the relevant local authorities) and Great Britain as a whole over the period between pre-construction and mid-construction.

Of the six analysed projects, five local areas experienced an increase in tourism-related employment during this period, with one experiencing a reduction. Of those where tourism employment in the local areas increased, two increased at a higher rate than the relevant local authorities and Great Britain overall. During this period, two of the relevant local areas experienced increases in tourism employment while overall employment in the sector across their local authorities fell.

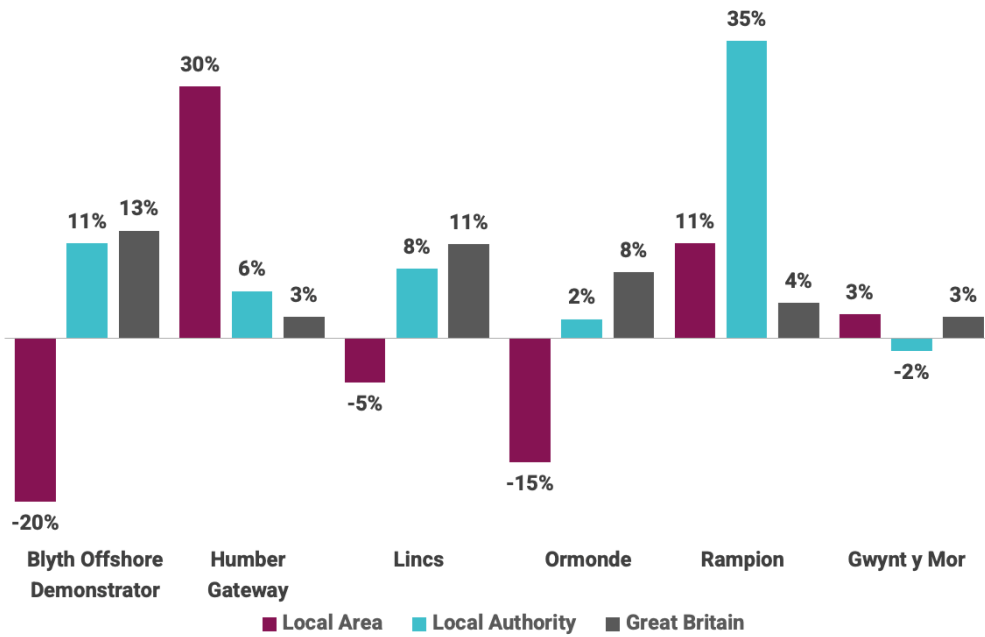


Source: BiGGAR Economics Analysis

Figure 3-3 Change in Sustainable Tourism Employment by OWF Local Area from Pre-Construction to Mid-Construction

Figure 3-4 compares the change in tourism-related employment in the local areas of the wind farms to the change in the sector's employment in the regional area and Great Britain as a whole over the period between pre-construction and post-construction.

Considering the change between pre-construction to post-construction, of those for which tourism employment increased, one increased at a faster rate than the relevant regional area, and for one, tourism employment rose in the local area while employment in the sector across the local authority fell. One increased at a faster rate than tourism employment across Britain as a whole.



Source: BiGGAR Economics Analysis

Figure 3-4 Change in Sustainable Tourism Employment by OWF Local Area from Pre-Construction to Post-Construction

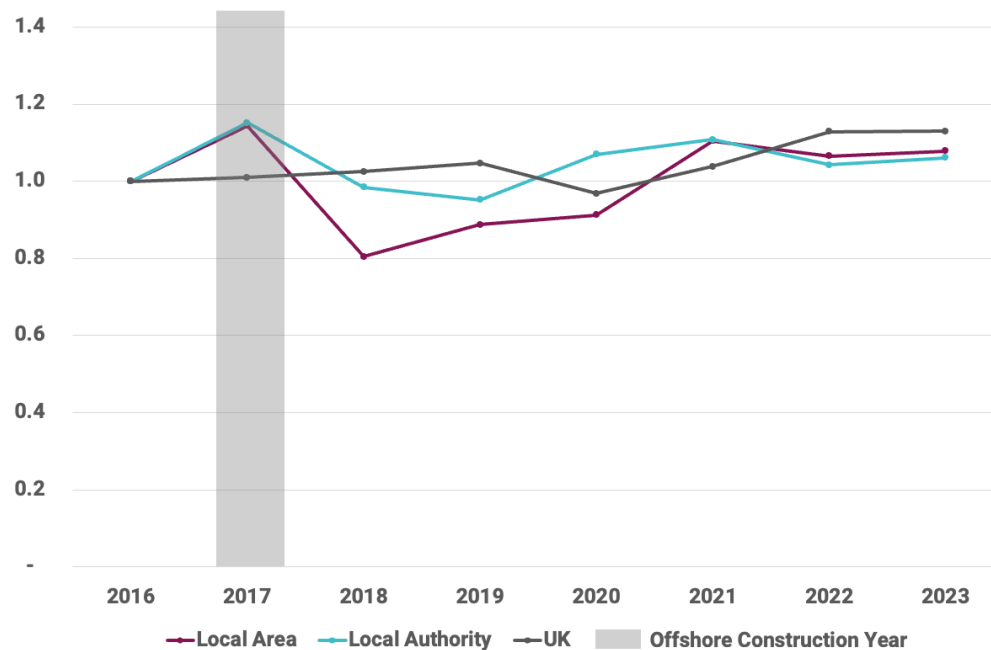
3.3 Tourism Employment Over Time

In order to understand if the construction of the offshore wind farms resulted in a long-term trend of reductions in tourism employment in these areas, employment since the year prior to the commencement construction to 2023 has been analysed. Of the three local areas which experienced reductions in tourism employment between pre-construction and post construction of the wind farms, all three experiences future increases in tourism employment, returning to and exceeding pre-construction levels. As of 2023, tourism employment in five of the six analysed local areas was higher than the year prior to the commencement of offshore construction.

3.3.1 Blyth Offshore Demonstrator

Figure 3-5 shows the change in sustainable tourism employment in the Local Area of Blyth Offshore Demonstrator, the relevant local authority, and Great Britain, between 2016 and 2023, with the offshore construction period highlighted, where the data series are indexed to 2016 = 1.

Peak employment in the tourism sector in the Local Area coincided with the commencement of construction of Blyth Offshore Demonstrator in 2017. Whilst there was a subsequent decline between 2017 and 2018, employment in the sector has demonstrated growth to 2023, with higher tourism employment compared to 2016 (the year prior to the commencement of construction) every year since 2021.



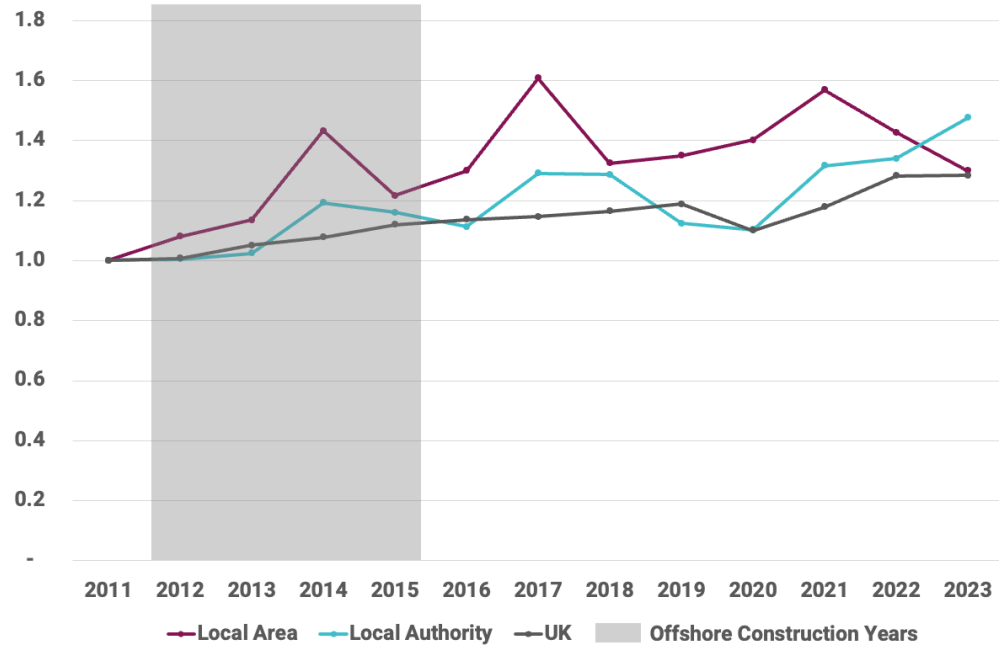
Source: ONS (2025), Business Register and Employment Survey

Figure 3-5 Local Tourism Employment Over Time, Blyth Offshore Demonstrator

3.3.2 Humber Gateway OWF

Figure 3-6 shows the change in sustainable tourism employment in the local area of Humber Gateway OWF, the relevant local authority, and Great Britain, between 2011, the year prior to the commencement of offshore construction, and 2023. Data has been indexed with 2011 = 1.

Employment in the tourism sector of the Local Area has been higher than pre-construction levels every year following 2011, with local growth in the sector outperforming that of both the relevant local authority and Great Britain every year until 2023.



Source: ONS (2025), Business Register and Employment Survey

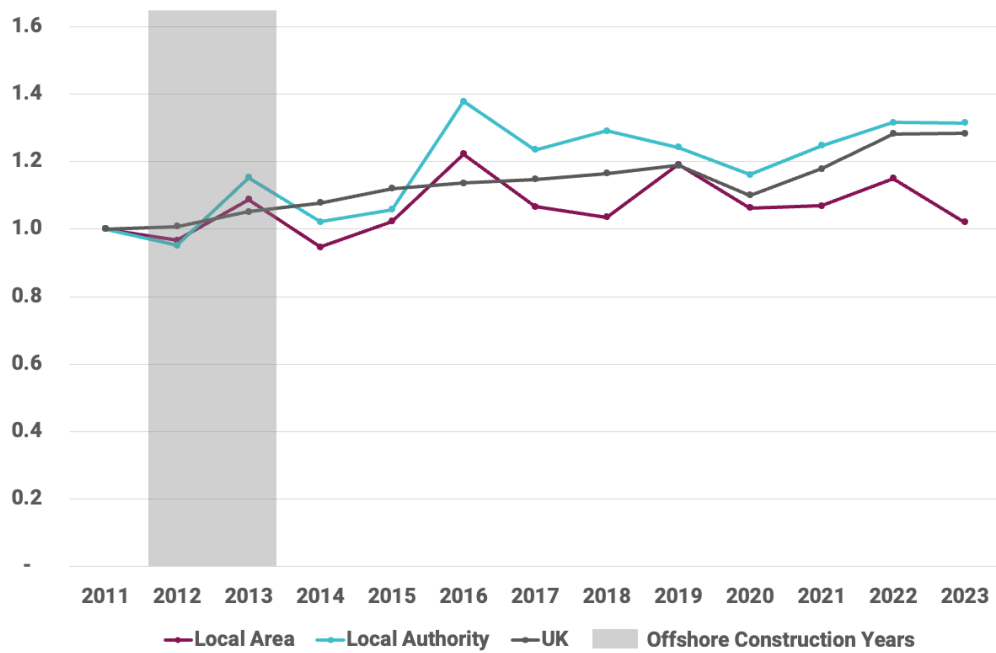
Figure 3-6 Local Tourism Employment Over Time, Humber Gateway OWF



3.3.3 Lincs OWF

Figure 3-7 shows the change in sustainable tourism employment in the local area of Lincs OWF, the local authority, and Great Britain, between 2011 and 2023. The data has been indexed with 2011 = 1.

Tourism employment in the local area associated with Lincs OWF increased past pre-construction levels in 2016, and remained above this level every year since except 2020 and 2021, for which tourism was affected by the Covid-19 pandemic. In 2023, sustainable tourism employment in the area was 5,683, representing a 32% increase in the sector's employment compared to the year before the first turbine of Lincs was constructed (3,995).



Source: ONS (2025), Business Register and Employment Survey

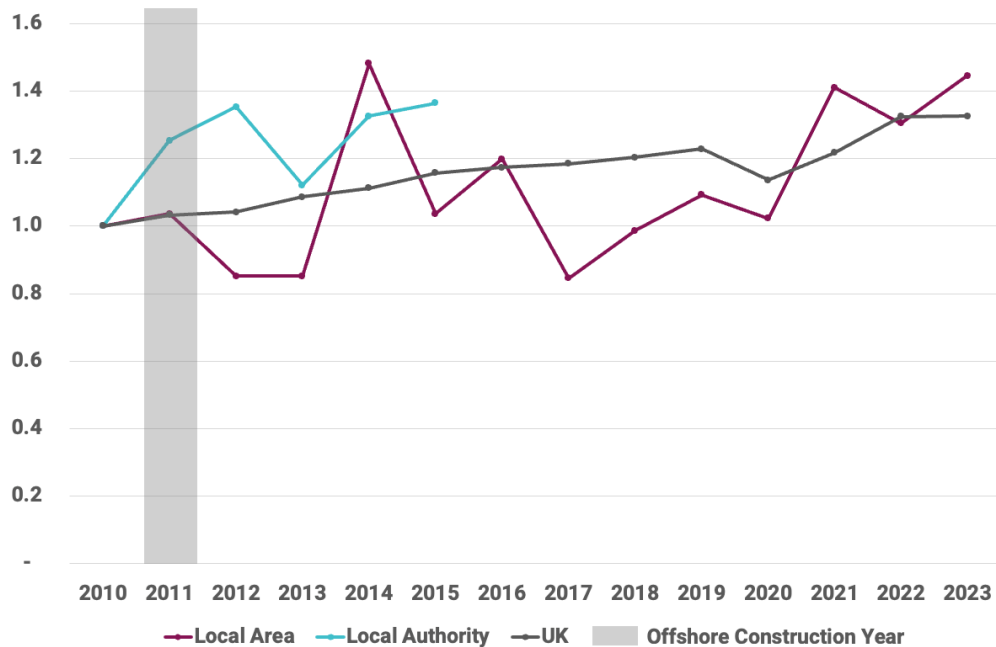
Figure 3-7 Local Tourism Employment Over Time, Lincs OWF

3.3.4 Ormonde OWF

Figure 3-8 shows the change in sustainable tourism employment in the local area of Ormonde OWF and Great Britain between 2010 and 2023. Data for the relevant local authority, Cumbria, is presented between 2010 and 2015, as data for this area is not available following 2015 due to changes in council boundaries. Data is indexed with 2010 = 1.

Sustainable tourism employment in the local area of Ormonde OWF peaked in 2014, three years after the offshore construction of the wind farm finished. The same year, growth in tourism employment in the local area outperformed both the local authority and Great Britain.

Tourism employment in the local area has been above the year prior to offshore construction in seven of the eleven years following construction. Since a reduction in 2020, attributable to the Covid-19 pandemic, tourism employment in the area has been consistently higher than employment the year prior to construction beginning.



Source: ONS (2025), Business Register and Employment Survey

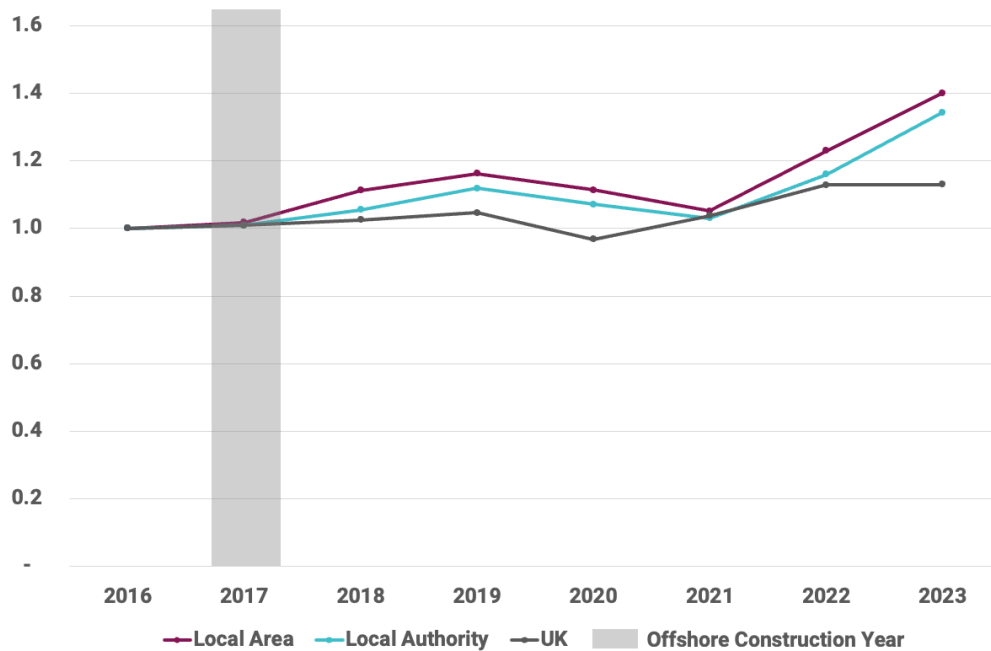
Figure 3-8 Local Tourism Employment Over Time, Ormonde OWF

3.3.5 Rampion OWF

Figure 3-9 shows the change in sustainable tourism employment in the local area of Rampion OWF, the relevant local authorities, and Great Britain, between 2016 and 2023. Data has been indexed with 2016 = 1.

The local area of Rampion includes parts of Brighton, a popular tourist area on the South Coast of England. Every year since 2016 employment in the area has been higher than pre-construction levels. In 2023, employment in the sector was 17,920, representing an increase of 40% compared to pre-construction levels.

Compared to 2016, growth in the tourism sector within the local area of Rampion OWF consistently outperformed both the wider region and Great Britain as a whole from 2018 to 2023.



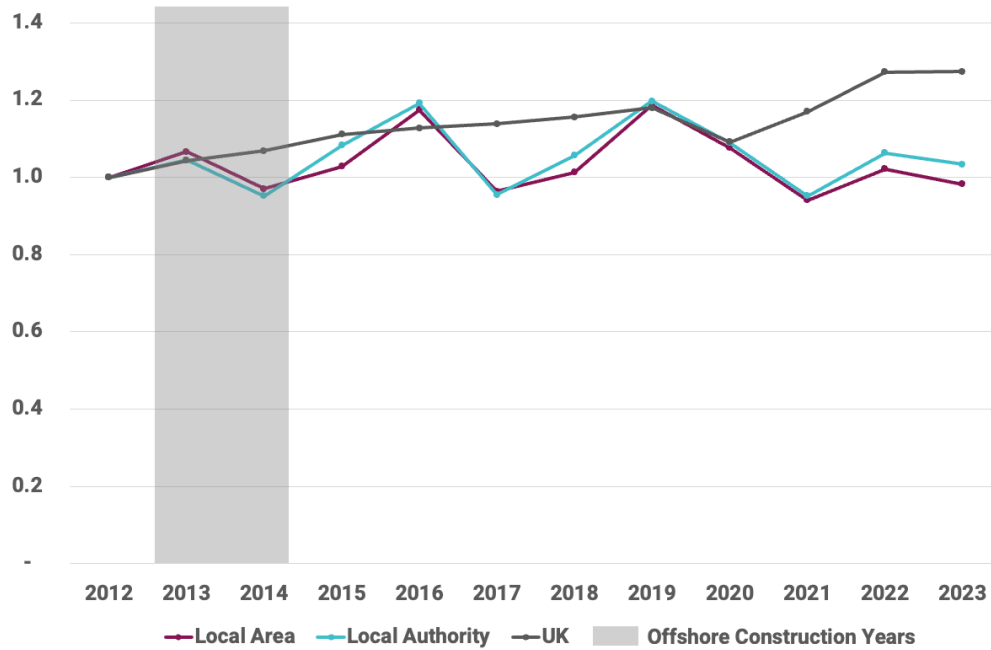
Source: ONS (2025), Business Register and Employment Survey

Figure 3-9 Local Tourism Employment Over Time, Rampion OWF

3.3.6 Gwynt y Môr

Figure 3-10 shows the change in sustainable tourism employment in the local area of Rampion OWF, the relevant local authorities, and Great Britain, between 2016 and 2023.

Between the years pre-construction and post-construction, tourism employment in the local area of Gwynt y Môr increased by 3%, with employment peaking in 2019, five years following the end of the offshore construction period.

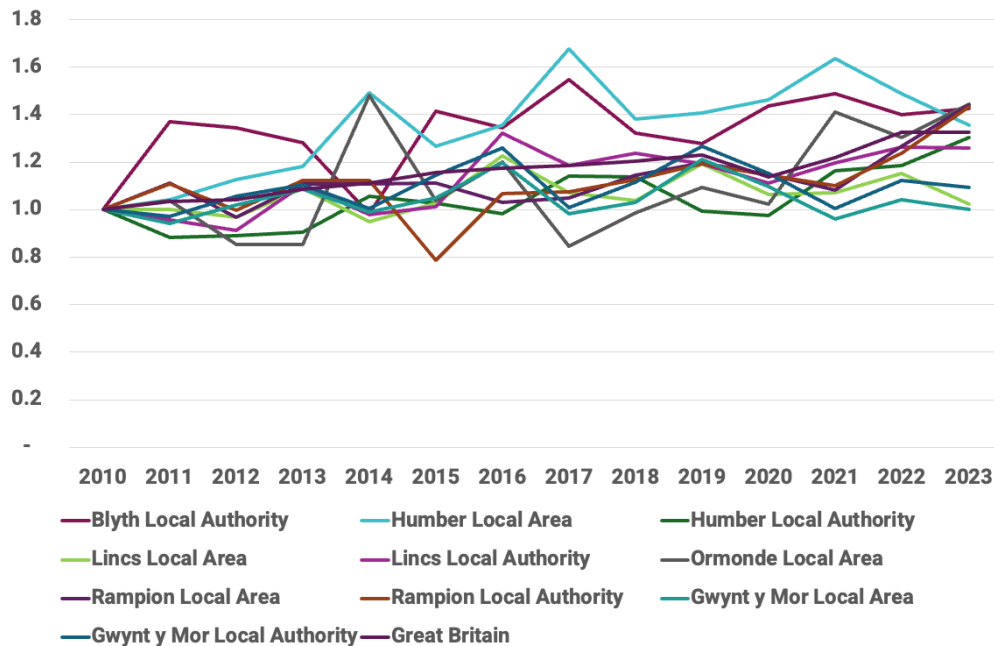


Source: ONS (2025), Business Register and Employment Survey

Figure 3-10 Local Tourism Employment Over Time, Gwynt y Môr OWF

3.4 Tourism Influences

Figure 3-11 shows the change in tourism employment in the relevant local areas, local authority, and across Great Britain from 2010 to 2023. All data series are indexed to 2010 = 1, allowing a direct comparison of change over time.



Source: ONS (2025), Business Register and Employment Survey. Note: Ormonde Local Authority not included as post-2015 data was not available for Cumbria. Blyth Local Area not included as pre-2015 data for the local area was not available.

Figure 3-11 Tourism Employment, 2010-2023

The fluctuations in tourism employment locally, regionally, and nationally demonstrate that the tourism sector can be influenced by a number of factors. This can include:

- The ability and willingness of tourists to travel;
- Economic performance (and so whether tourists have disposable income available for leisure trips);
- Exchange rates;
- The quality of the overall tourism offering in the local area;
- The effectiveness of destination marketing; and
- The quality and value for money of the services offered by tourism businesses.

The analysis shows that there is no common downward trend in tourism employment across the local areas of the identified offshore wind projects, in either the short-term or the long-term, with all projects experiencing long-term peak employment in the period following construction of the offshore wind projects finishing construction. This suggests that the fluctuations in tourism employment, including short-term reductions between pre-construction and post-construction, are attributable to a number of other factors, and not the presence of nearshore offshore wind farms.



3.5 Summary

This section analysed trends in local tourism employment across six UK offshore wind farm areas.

Analysis of the tourism sector during the construction period of the offshore wind farms, between the year prior to construction beginning and the year mid construction, demonstrated that there no consistent pattern suggesting a negative impact on tourism employment from the construction of offshore wind. Across the six projects, five local areas experienced an increase in tourism-related employment during this period.

Analysis of the change in tourism employment during the period between the years pre-construction and post-construction also demonstrated that there is no pattern suggesting that fully constructed nearshore offshore wind projects have a negative effect on tourism, with employment in the sector increasing in three locations and falling in three locations.

Further analysis of long-term trends to 2023 showed that, of the six wind farms identified, five had higher employment in the tourism sector by 2023 compared to the year prior to construction commencing, with peak levels of employment for all six projects occurring after offshore construction finished. When compared to the wider regional areas and across Great Britain, two consistently experienced higher growth in tourism employment compared to the year prior to construction commencing, and all experienced years with higher relative levels of growth than Great Britain as a whole. This suggests there is no long-term trend in reductions in tourism employment resulting from the presence of nearshore offshore wind projects.

Overall, the evidence suggests there is no demonstrable pattern to suggest a short term or long-term negative relationship between nearshore offshore wind developments and employment in tourism sector.



4. Offshore Wind Development and Wellbeing

The presence of offshore wind farms is unlikely to have adverse impacts on average local wellbeing. However, the possibility that a minority may experience heightened frustration or annoyance due to their presence cannot be overlooked.

People want to live happy, healthy, and fulfilling lives. Whilst offshore wind farms have an important contribution to make in ensuring population wellbeing in the longer-term, there are concerns regarding the potential for negative impacts on those living close by, many of which are driven by perceived risks rather than confirmed physiological effects.

This section aims to overview the research relating to wind farms and wellbeing, summarise people's general perceptions of wind farms, and also provide a wellbeing assessment of people living in sight of nearshore offshore wind developments.

4.1 Academic Review: Windfarm Wellbeing

Wind energy is an important part of the solution to wider sustainability issues, as concrete action is required to mitigate the serious, long-term risks that climate change poses to future population wellbeing. Effectively responding will help reduce the significant anxiety currently caused by the climate threat¹⁶, with 71% of respondents to an Irish survey saying they are very worried about climate change.¹⁷ While the net effect of wind energy is likely to be overwhelmingly positive for long-term wellbeing¹⁸, its development nevertheless may raise immediate wellbeing concerns for individuals living in close proximity to wind farms.

For those living very close to wind farms there are physical concerns, such as visual disturbances, arising from shadow flicker and night-time lights, as well as noise pollution from rotating turbines, all of which might generate anxiety and disturb sleep. These are concerns that do not apply to operational offshore wind farms since they are too far away to be heard, cause shadow flicker, and significantly influence night-time lights. However, there are potential psychological aspects for some people living close to wind farms who may feel frustrated and annoyed at the presence of wind farms in their local area. This frustration and annoyance could potentially arise from changes to the natural landscape, as well as feeling excluded from the process. Research indicates that the planning and construction process is

¹⁶ Ogunbode, C. A., Doran, R., Hanss, D., Ojala, M., Salmela-Aro, K., van den Broek, K. L., ... & Karasu, M. (2022). Climate anxiety, wellbeing and pro-environmental action: correlates of negative emotional responses to climate change in 32 countries. *Journal of Environmental Psychology*, 84, 101887.

¹⁷ Government of Ireland (2025), Climate Conversations 2024 Report

¹⁸ Hattam, C., Hooper, T., & Papatathanasopoulou, E. (2015). Understanding the impacts of offshore wind farms on well-being. *The Crown Estate*, 77.



central, and that annoyance is lower when people can participate in the siting and decision-making process¹⁹.

There are numerous studies that have looked at whether wind farms have an influence on health and wellbeing. Although these studies primarily focus on onshore wind farms, the results support an understanding of how nearshore offshore developments impact on wellbeing. A review of the academic literature between 2010 and 2020²⁰, evaluated 22 articles on the health effects of wind farms on nearby residents, focusing on issues like noise, sleep, and general annoyance. Some studies found no effects at all, whilst for those that did, many of the associations between reported health symptoms and quality of life disappeared once statistical adjustments were made for related influences, such as personal perspectives and psychological factors.

There is also very limited evidence of a direct causal link between living in proximity to onshore wind turbines and physiological health effects. A recent study²¹ which explored the causal link showed that close proximity to onshore wind farms (less than 4kms) had no temporary or permanent negative effect on various health indicators, including both mental and physical health, doctor visits, sleep satisfaction, the experience of certain emotions, and the local suicide rate.

Nevertheless, there is evidence that wind farms can still be a source of annoyance for some people, with this being more likely related to impacts on visual amenity and attitude to wind farms²². Whilst operational noise can also be a source of annoyance, this is not generally an issue for offshore wind farm developments due to the distance they are located from receptors.

Generally negative attitudes and worries of individuals about perceived risks to them could generate adverse health consequences²³, a phenomenon often termed the nocebo effect. A study exploring local community resistance concluded that “targeted communication about climate benefits and local financial gains significantly reduces resistance.”²⁴. In this regard, those that benefit economically from wind farms have been shown to report significantly lower levels of annoyance than those who received no economic benefit, despite increased proximity to the turbines²⁵. As such, it is important to highlight the positive wellbeing impacts that arise from better employment and training opportunities, as well as from community benefit funding²⁶.

¹⁹ Van Kamp, I., & Van Den Berg, F. (2021). Health effects related to wind turbine sound: An update. *International Journal of Environmental Research and Public Health*, 18, 9133.

²⁰ Ata Teneler, A., & Hassoy, H. (2023). Health effects of wind turbines: a review of the literature between 2010-2020. *International Journal of Environmental Health Research*, 33, 143-157.

²¹ Krekel, C., Rode, J., & Roth, A. (2023). *Do wind turbines have adverse health impacts?* (No. 16505). IZA Discussion Papers.

²² Knopper, L. D., & Ollson, C. A. (2011). Health effects and wind turbines: A review of the literature. *Environmental health*, 10, 78.

²³ Crichton, F., & Petrie, K. J. (2015). Health complaints and wind turbines: The efficacy of explaining the nocebo response to reduce symptom reporting. *Environmental Research*, 140, 449-455.

²⁴ Muñoz, J., & Tormos, R. (2025). Mitigating the NIMBY effect on renewable energy: Experimental evidence from survey-based interventions in Catalonia. *Energy Research & Social Science*, 127, 104277.

²⁵ Knopper, L. D., Ollson, C. A., McCallum, L. C., Whitfield Aslund, M. L., Berger, R. G., Souweine, K., & McDaniel, M. (2014). Wind turbines and human health. *Frontiers in Public Health*, 2, 63.

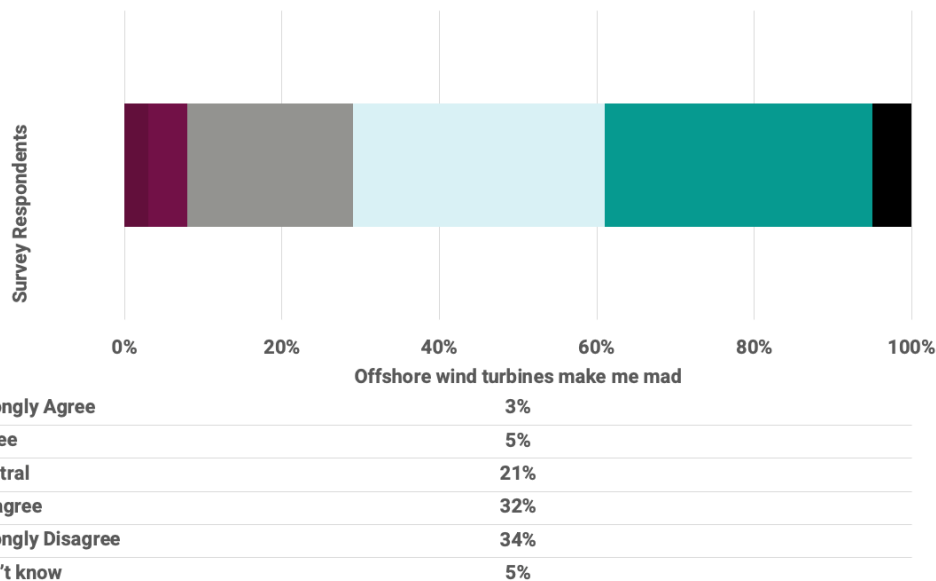
²⁶ Impact Assessment of SSE Renewables Achany and RWE Rosehall Wind Farms Community Benefit Funds, BiGGAR Economics report to RWE, Foundation Scotland, and SSE Renewables, 2024

4.2 Public Perceptions of Offshore Wind Farms

Most people recognise the social and economic importance of offshore wind farm development. This strong public backing is reflected in recent studies on public perceptions to offshore wind farms.

For example, Wind Energy Ireland report that 75% are in favour of the use of offshore wind power in the Republic of Ireland. 82% agree that offshore wind farms can support energy security, with only 25% saying enough is being done to develop offshore wind²⁷. Nevertheless, a minority have negative attitudes towards offshore windfarm energy with 4% opposing offshore wind power.

In another Irish survey²⁸ on offshore wind farms, 8% (3% Strongly Agree, 5% Agree) reported that they felt mad when they saw windfarms. In the response to the same question, 87% (21% Neutral, 32% Disagree, 34% Strong Disagree) were either neutral or disagreed with this statement. Whilst the majority (58%) reported they would not avoid a beach where offshore wind turbines were visible, 15% said they would avoid beach visits where turbines were visible. As part of this study, a focus group was held with members of the public who have regular exposure to Ireland’s only offshore wind farm, Arklow Bank Wind Park Phase 1. The sentiments expressed regarding the offshore turbines ranged from benign to extremely positive and a general consensus among the focus group that increased numbers of wind turbines would not cause concern. Important themes arising included economic benefits, public engagement, community benefit, and aesthetic/social impacts.



Source: Cronin, Y., Cummins, V., & Wolsztynski, E. (2021). Public perception of offshore wind farms in Ireland. *Marine Policy*, 134, 104814

Figure 4-1 Offshore Wind Turbines make me mad - Survey Response Ireland

Similarly, in a survey carried out on people in Scotland in 2021²⁹, most respondents considered renewable energy to have an important role to play in creating both social (92%) and economic (89%) value. In

²⁷ Wind Energy Attitudes Monitor 2024, Wind Energy Ireland, 2024

²⁸ Cronin, Y., Cummins, V., & Wolsztynski, E. (2021). Public perception of offshore wind farms in Ireland. *Marine Policy*, 134, 104814.

²⁹ "Public Perceptions of Offshore Wind farm Developments in Scotland" Diffley Partnership report to the Scottish Government, June 2022



addition, regardless of whether they lived close to the coast or not, at least 4 out of 5 people (83% of coastal respondents, 80% of national respondents) stated that they either strongly approved or tended to approve of offshore wind farms. Of those surveyed who have direct experience living close to an offshore wind farm, 66% reported that offshore wind farm developments provide a boost to the local economy, and 25% said that has a positive impact on their own quality of life, while only 4% said it had a negative impacts.

In addition, across both surveys between 10% and 15% of respondents said they would avoid beaches and holiday destinations if they were able to see wind turbines.

One of the key findings of both studies was that individuals who had experience, or lived in proximity to, an offshore wind farm had a more positive view of offshore wind farm developments. This would suggest that potential concerns of impacts in advance of the construction of an offshore wind farm are not realised once the wind farm is constructed.

In sum, this confirms what has been found in the peer-reviewed research, illustrating that whilst most people are broadly supportive of offshore windfarms, there are some that the presence of offshore wind farms will impact in their visual amenity. On the whole, whilst most people are favourable towards offshore wind farms, establishing trust through open engagement and might help create a more favourable mood among those less supportive.

4.3 Wellbeing Changes Near Offshore Windfarms

Another way to explore the relationship between offshore wind farms and wellbeing is through examining a relative wellbeing comparison. This section uses UK data to examine whether those living near offshore wind farms that are clearly visible from the coast have seen reductions in their wellbeing in comparison to areas where offshore wind farms are not visible. UK data is used owing to its reliable and consistent tracking of population wellbeing over a sustained time period. There is no comparable data from Ireland.

4.3.1 Data and Analysis

The relationship between offshore wind farms and wellbeing is explored using wellbeing data from the Office for National Statistics (ONS). Since 2011, the ONS has tracked the UK's wellbeing in its Annual Population Survey (APS), which is a continuous household survey that covers a range of economic and social topics.

The survey asks four questions relating to personal wellbeing, including how satisfied a person is with their life, whether they feel that the things they do in their life are worthwhile, as well as both their level of anxiety and happiness in the previous day. People are asked to rate themselves on each of these aspects of wellbeing on a scale of 0 to 10. Such subjective measures of wellbeing are reliable and valid indicators of wellbeing, with these specific measures being recommended not only for tracking population wellbeing³⁰, but also for policy analysis³¹.

Each year since 2011 up to 170,000 people have asked these questions from nearly 400 areas across the UK. In locating the areas where there have been offshore wind developments, it is possible to examine

³⁰ OECD Guidelines on Measuring Subjective Well-Being (2025 Update), OECD, 2025.

³¹ Wellbeing Guidance for Appraisal: Supplementary Green Book Guidance, HM Treasury, 2021.

how wellbeing has changed in the local area across the development of the wind farm, including before and during its construction, as well as its subsequent operation.

Since there are a number of factors that drive wellbeing, including regional and national factors that will be unrelated to the development of offshore wind, these changes are compared and contrasted to a nearby local area that will not have been impacted by an offshore wind development. That is, this analysis looks at a difference-in-difference using mean area statistics, to examine if there is any evidence that wellbeing has declined relative to either a nearby comparator or national wellbeing³².

This analysis makes use primarily of the life satisfaction question to assess pre-construction levels of wellbeing, comparing this to wellbeing both during and after an offshore wind farms construction, and how these changes compared to both a comparator local area, and the UK national average.

4.3.2 Offshore Wind Farm Selection

There are several offshore wind farm developments in the UK that are close enough to the coast to be clearly visible. However, not all of them were developed within the time frame of the ONS wellbeing data to enable a successful assessment. There are four offshore wind developments that are located within 8.5kms of the nearest coast that were constructed and operational during the data time frame. A summary of the selected offshore wind farms is shown in Table 4-1.

Table 4-1 Selected Offshore Wind Farms

Offshore Wind Farm	Location	Coastal Distance	First Turbine	Last Turbine	Closest Local Area	Local Area Comparator
Humber Gateway OWF	North of the mouth of the Humber	8km	2012	2015	East Riding	Scarborough
Gunfleet Sands 3	Northern Thames Estuary	8.5km	2013	2013	Tendring	Maldon
Lincs OWF	Greater Wash area	8km	2012	2013	East Lindsey	South Holland
Burbo Bank OWF	Liverpool Bay	7km	2016	2016	Wirral	Flintshire

4.3.3 Difference-in-Difference Results

Table 4-2 shows how life satisfaction changed across each of the four offshore wind farms before construction, during the period of construction, and during operation. It is notable that life satisfaction is higher after construction than before in three of local areas closest to the offshore windfarms, with one of these being statistically significant at the 5% level. Further, only two of the local areas have lower life satisfaction levels during the construction phase.

³² The test has limitations, including being underpowered owing to small sample sizes, an inability to control for confounding factors, and much of the sample being unlikely to be in close proximity to the development. The assessment therefore cannot in any way be taken as casual or conclusive. Nevertheless, the results could be considered as indicative. Further research is recommended.



When these changes are compared to a local comparator and the UK average, two of the local areas showed an increase in wellbeing and two decreased. Nevertheless, none are statistically significant.

Table 4-2 Life Satisfaction Changes in Locations Close to Offshore Wind Farms

Offshore Wind Farm		Local Area	Difference Relative to Local Comparator	Difference Relative to UK Average
Humber Gateway OWF	Pre-Construction	7.56	+0.06	+0.14 [^]
	Change During Construction	+0.11	-0.11	+0.02
	Change After Construction	+0.32 ^{**}	-0.11	+0.05
Gunfleet Sands 3	Pre-Construction	7.35	-0.25	-0.11
	Change During Construction	-0.03	+0.29	-0.08
	Change After Construction	+0.05	+0.15	-0.14
Lincs OWF	Pre-Construction Level	7.71	+0.14	+0.29 [^]
	Change During Construction	-0.36	-0.18	-0.45[^]
	Change After Construction	-0.02	-0.09	-0.25
Burbo Bank OWF	Pre-Construction	7.56	-0.08	-0.09
	Change During Construction	+0.02	+0.1	-0.01
	Change After Construction	+0.12	+0.02	+0.06

[^] statistically significant at the 10% level, ^{*} statistically significant at the 5% level, ^{**} statistically significant at the 1% level

4.3.4 Humber Gateway OWF

The life satisfaction changes that took place in local area close to the Humber Gateway OWF are shown in Figure 4-2. Life satisfaction in the nearby region, East Riding, was 7.56 which was higher than the UK average. From before to after the construction life satisfaction increased by 0.32 units. Whilst this increase was by a higher amount than the UK more broadly, this increase was smaller than the local comparator area, Scarborough, which increased by 0.43 units over the same time frame.

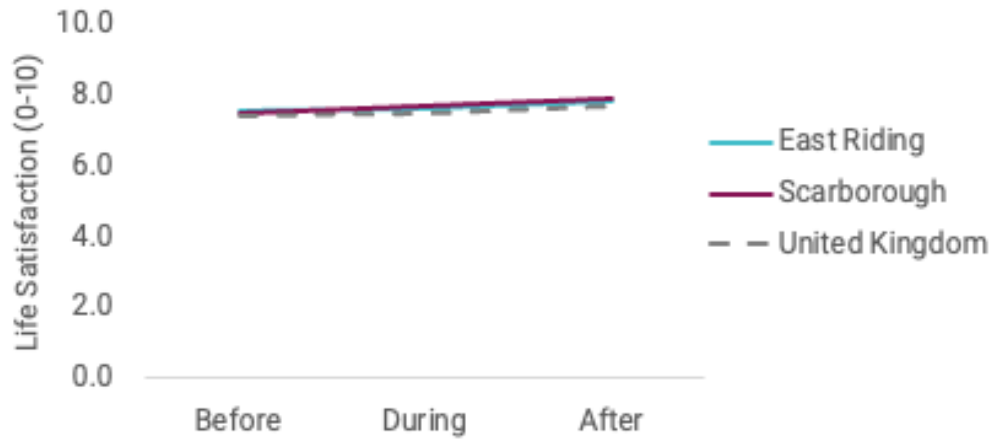


Figure 4-2 Life Satisfaction Changes Around the Humber Gateway OWF

4.3.5 Gunfleet Sands 3

The life satisfaction changes around Gunfleet Sands 3 are shown in Figure 4-3. Life satisfaction in the nearby region, Tendring, was 7.35 before construction, lower than the UK average. During construction life satisfaction was 0.03 lower, whilst after construction it was 0.05 higher than pre-construction. Nevertheless, in Maldon, the local comparator area, which began with life satisfaction levels 0.25 higher than Tendring, there were reductions of 0.32 and 0.10 in life satisfaction over the same respective time periods. Although not statistically significant this represents a difference-in-difference increase. In contrast, when compared with the UK, this represents a relative fall, although again statistically insignificant.

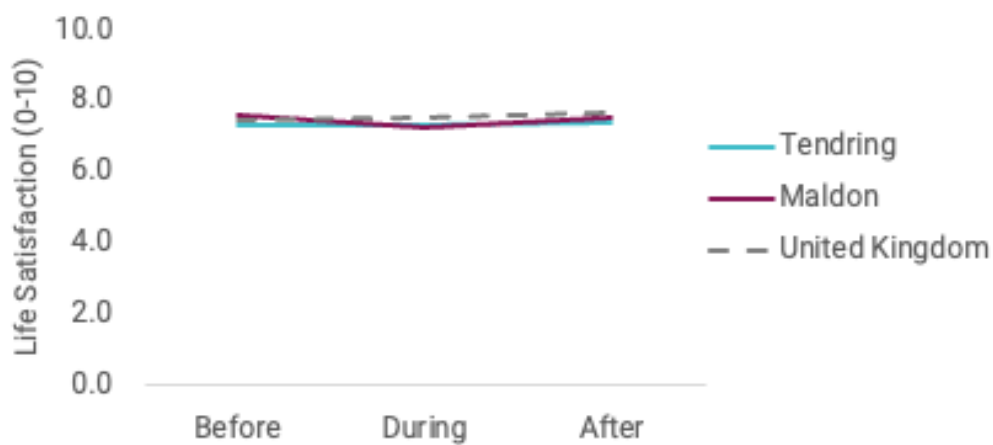


Figure 4-3 Life Satisfaction Changes Around Gunfleet Sands 3



4.3.6 Lincs OWF

The life satisfaction changes around Lincs OWF are shown in Figure 4-4. The local area closest to Lincs Wind Farm, East Lindsey, had a life satisfaction level of 7.71, which that was initially higher than the local comparator, South Holland, where life satisfaction was 7.57. During the construction phase life satisfaction dropped in both areas but by a greater amount in East Lindsey. Whether this can be attributed to the presence of an offshore wind farm or not is uncertain. However, life satisfaction in East Lindsey after construction was 7.69, which is similar to pre-construction levels. Compared to the UK, on the other hand, where life satisfaction was much lower at 7.43 and increased over the period, this represents a relative decrease that was statistically significant at the 10% level during the construction phase.

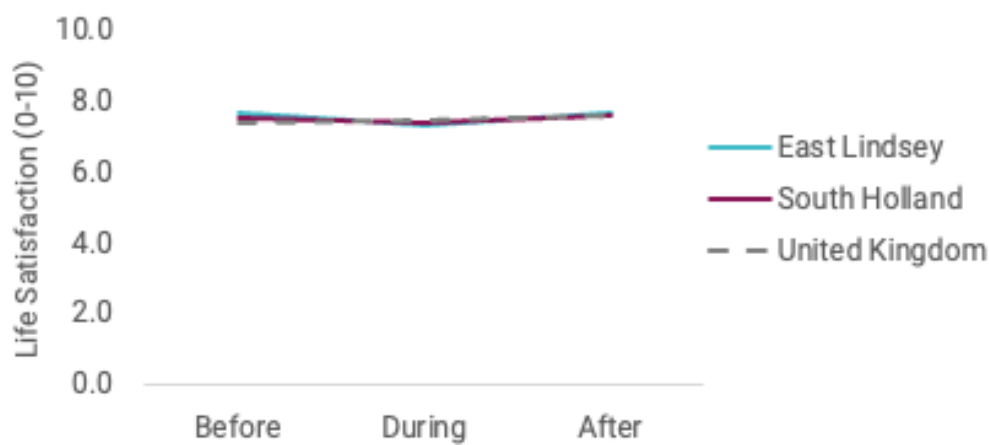


Figure 4-4 Life Satisfaction Changes Around the Lincs OWF

4.3.7 Burbo Bank OWF

The life satisfaction changes around Burbo Bank OWF are shown in Figure 4-5. The local area closest to Burbo Bank Offshore Wind Farm, Wirral, had a life satisfaction level of 7.56 prior to construction, which was lower than both the local comparator, Flintshire (7.64), and the UK (7.65). The life satisfaction in the Wirral was 0.02 higher during construction and 0.12 after construction. Both the local comparator area and the UK also exhibited increases across the time period, being 0.10 and 0.06 higher respectively from before to after construction. Since both these increases are smaller than the increase in the local area, Wirral, this implies a positive life satisfaction difference-in-difference effect. However, this effect is marginal and not statistically significant.

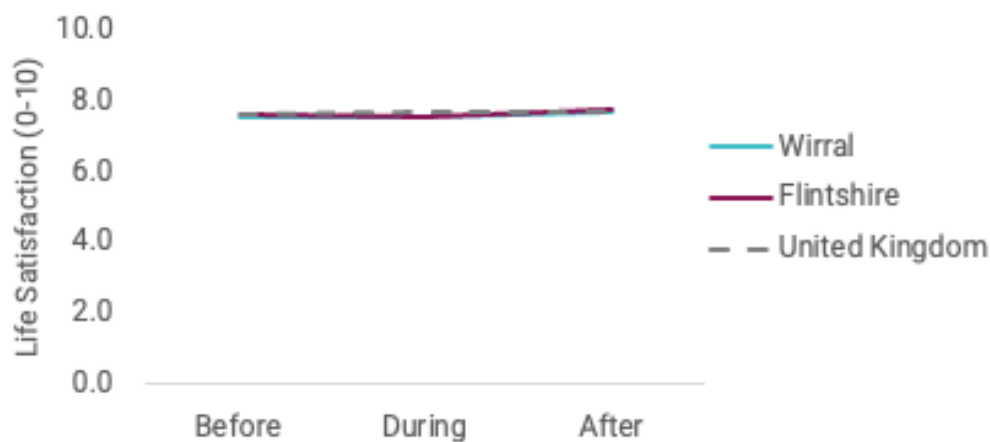


Figure 4-5 Life Satisfaction Changes Around the Burbo Bank OWF

4.3.8 Limitations

These assessments need to be treated with extreme caution and cannot be taken as conclusive evidence that offshore wind farms do not negatively influence wellbeing. The assessment has significant limitations. First, since the local areas are large, it is likely that many of the people surveyed in the respective areas do not have sight of offshore windfarms. Second, the tests are vastly underpowered owing to limited sample sizes, and as such none of the difference-in-difference effects were statistically significant. This hampers any firm conclusions. However, across the difference-in-difference estimates there is a fairly even balance between negative and positive coefficients (9 negative effects versus 7 positive effects) suggesting that a lack of an effect is not simply because the test is underpowered.

In light of these limitations, these assessments can only be taken as indicative that offshore wind farms are unlikely to have broader population level wellbeing impacts. They are unable to rule out the possibility that some people may experience impacts on their wellbeing at an individual level which they attribute to the OWF.



4.4 Summary

Research into the wellbeing impacts of offshore wind farms reveals a potential concerns for a minority of local residents. Academic literature indicates that while visual impacts and psychological factors (such as annoyance and the nocebo effect) of offshore wind farms might cause local concern, there is limited evidence of a direct causal link between proximity to turbines and physiological health effects.

An assessment of ONS wellbeing data for four offshore sites provided no strong, consistent evidence of wellbeing decline across the larger local areas, with estimated effects being evenly balanced between negative and positive coefficients. Public perception remains broadly supportive of offshore wind (with over 80% approval in Scottish and Irish surveys) and many feeling they are a way of dealing with the climate threat and long-term wellbeing, though a minority report negative impacts and are likely to avoid visible coastal destinations.



5. Conclusions

There is no evidence suggesting significant impacts on either tourism or wellbeing as a result of the construction of visible offshore wind farms

5.1.1 Irish Context

A number of public perceptions studies in Ireland (Wind Energy Ireland, 2024, Fáilte Ireland, 2023 and Cronin et al, 2021) indicates a broadly positive public and tourist perception of offshore wind energy in Ireland. However, surveying perceptions do not act as empirical evidence of the potential relationship between the tourism economy and offshore wind and the offshore wind industry in Ireland is less developed and empirical data is more limited when compared to the UK. Hence, tourism employment, wellbeing and perceptions in the UK have been considered.

5.1.2 Offshore Wind Farms and Tourism

Analysis of tourism employment trends in the local areas surrounding six visible offshore wind farms in the UK found no evidence of a correlation between nearshore wind farm development and adverse impacts on the tourism sector during offshore construction, in the short-term following construction ending, or in the long-term.

In the short-term, three of six local areas experienced increases in tourism-related employment during the period between the year prior to construction and the year after construction ended. In the long-term, all six areas experienced tourism employment at higher levels than the year prior to construction beginning.

5.1.3 Offshore Wind Farms and Wellbeing

Overall, exploring alternative energy sources is essential to dealing with climate change, which will support long-term wellbeing. Nevertheless, it is not possible to rule out that some individuals will be vulnerable to negative wellbeing impacts. While the developer's direct actions are largely limited to correctly siting wind farms to minimize visibility, there could be significant value in ensuring community participation in fund decision-making via the establishment of a local Fund Committee and also allowing communities to benefit from funding during the construction stage of ABWP2.

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