

**INVESTIGATION INTO THE
POTENTIAL IMPACT OF WIND FARMS
ON TOURISM IN WALES
SUMMARY REPORT**

Prepared for: Wales Tourist Board

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Summary Report

Introduction

The UK Government is committed to increasing the proportion of electricity generated by renewable energy sources. In June 1997, the Government announced that it wanted 10% of the UK's electricity to be produced from renewable energy by 2010. The longer-term goal of the UK Government is to achieve 20% of electrical energy from renewable resources by 2025. Complementing this policy, the Welsh Assembly has stated that it is seeking to achieve a 20% reduction in carbon emissions by 2020.

The development of renewable energy resources has a major part to play in this planned reduction in carbon emissions. Existing plans are to increase renewable energy production in Wales to 4TWh by 2010 and 7 TWh by 2020.

In the short term, wind farm energy represents the most likely technology to make a significant contribution to achieve these Welsh Assembly targets on carbon emissions. Wales has particular potential for the development of renewable energy, especially wind energy, due to its geography and climate (although the National Parks and Areas of Outstanding Natural Beauty will remain unaffected by wind farm developments). Consequently, the Welsh Assembly has asked Wales Tourist Board (WTB) to assess the effects of renewable energy, and particularly wind farms, on tourism.

Wind farm proposals have tended to generate some controversy with concern about the visual impact of individual or groups of wind turbines representing a major obstacle in realising the potential for wind energy. Consequently, most planning refusals are for visual impact reasons. Indeed some countries such as Finland have rejected wind power totally because of negative visual impact concerns. In contrast, other countries such as Denmark, Germany and Sweden have widely embraced the development of wind farms. For example, in Denmark, 15% of energy generated is from wind farms.

As highlighted in recent reports undertaken by NFO for Wales Tourist Board¹(WTB), the scenery, wild landscapes and unspoilt environment are all regarded as key strengths of Wales' tourism product amongst visitors to the country. Given the importance of tourism to the Welsh economy, the controversy surrounding their development in terms of the visual impact as well the likely importance of their development in the future, WTB wishes to revisit their policy statement on the development of wind farms to fully assess their impact on tourist experiences. The existing policy, adopted in September 2000, has been developed based on a practical understanding of the broad issues involved rather than based on any hard, empirical evidence. Essentially, there are three broad elements to existing WTB policy:

- *The Board opposes the introduction of commercial wind turbines and wind turbine power stations in both the primary designated areas (National Parks, Heritage Coast, National Marine Nature Reserves and Areas of Outstanding Natural Beauty) and on natural sites that are clearly visible from the primary*

¹ Visitor Survey 2000, Survey of Domestic Visitors 2001 – by NFO for WTB

designated areas. We consider that elsewhere proposals should demonstrate that there will be no detrimental effect on tourism;

- *That the Board oppose the development of offshore wind farms adjoining the coastline, which is either within a National Park, designated Heritage Coast, Areas of Outstanding Natural Beauty or National Marine Nature Reserves. Elsewhere, in assessing the suitability of locations for offshore wind farms in the proximity of traditional coastal resorts, the effects on tourism should be a material consideration in the determination of applications for such developments;*
- *That the Board recommends that the National Assembly for Wales provides clear land use policy guidance on the provision of wind farms and that the scope for less intrusive forms of renewable energy be investigated.*

It is now deemed timely to review this policy statement and to undertake some primary research to ensure that any further policy decision is based on hard, empirical evidence.

Aims and Objectives

To guide the review and development of the policy, WTB commissioned NFO to undertake a programme of research. The aims of this research were as follows:

- Understand the impact of wind farms on visitor enjoyment of the coast and countryside and the effects on intentions to holiday in Wales and to quantify the scale of this impact;
- To provide objective evidence to assist the Wales Tourist Board review its existing policy statement on wind farm development in Wales and its impact on tourism.

More specifically, the research brief outlines key objectives of the proposed study as follows:

1. *To establish the impact (both positive and negative) that the existing/proposed /anticipated development of wind farms in Wales (onshore and offshore) is likely to have on tourism in Wales. In quantifying the estimated impact, the following should be considered:*
 - The anticipated pace, scale, location and pattern (clustered/dispersed) of wind farm developments.
 - The adequacy of the statutory planning guidelines and restrictions covering the development of wind farms in Wales to ensure that any negative impact on tourism in Wales is avoided/negated.
 - Views and perceptions of the tourism business community towards wind farm development in Wales (both in affected and unaffected areas), and the impact on investment plans.
 - Views and perceptions of a wide range of visitors (both domestic and overseas), towards wind farm development in Wales in terms of their current visit and their future decisions to visit Wales generally and parts of Wales where there are wind farms.

- The experience, in terms of the impact of tourism, in comparable tourism destinations, and their reasons for embracing or rejecting wind farm development with regard to tourism.
2. *To identify and recommend key elements which a Wales Tourist Board Policy statement on “wind farm development and its relationship to tourism” should include.*

In order to meet the information requirements of the above objectives, a very detailed and comprehensive programme of research was undertaken. This programme consisted of the following five elements:

1. Desk research and literature review
2. Consultations with ‘key players’
3. Case studies - Wales
4. Case study - Spain
5. Survey of Visitors – Hall Tests

The first stage of this programme of research involved a review of literature and other sources of information available on wind farms and their impacts on tourism. This review provided a background for the primary research which involved consultations with members of the tourism industry and interviews with visitors to Wales. Due to the extensive nature of this review it is presented in a separate document. This summary report presents the main findings from each of the other elements of the research programme.

Summary of Key Findings of Consultations with Key Players

- As part of the review of existing research available on the development of wind farms and tourism in Wales, a programme of telephone consultations was undertaken with key organisations and personnel involved in the development of wind farms in Wales. In addition to asking respondents to provide us with any other relevant research on wind farms and tourism, respondents were also asked about their views and perceptions about the impact of wind farms and tourism.
- These ‘key players’ consulted included the Welsh Development Agency, the Countryside Council for Wales, the Environment Agency, Welsh Assembly, Wales Tourism Alliance and the National Trust for Wales. These consultations were around 30 minutes in duration and were based on a semi-structured discussion guide.
- Most respondents were in principle supportive of renewable energy and the development of wind farms in Wales. However, the general view was that wind farms should be very carefully sited and not in areas which were deemed to be particularly ‘sensitive’ to their development. There were variations in the explanation of what constituted a ‘no-go area’ with some organisations more explicit than others in their definition. Nevertheless, there was general consensus that they should be located outside of designated areas (e.g. National Parks and Areas of Outstanding Natural Beauty, Sites of Special Scientific

Interest) and in areas in which the visual and environmental impacts would be minimised.

- There was also considerable discussion over the size of the wind farm developments with some respondents of the view that any negative impacts associated with wind farm development were minimised through the development of fewer large-scale developments rather than a larger number of small-scale developments. For other respondents the counter argument was pertinent. Opinions were very much divided over this particular subject.
- For the majority of respondents, the development of offshore wind farms was preferable to on-shore development. The main reason for this view was many respondents believed that any of the negative impacts associated with wind farms, particularly the visual and environmental impacts, were significantly reduced in off-shore locations.
- Nearly all respondents were of the opinion that the decision as to whether or not to develop a wind farm should be assessed on a case-by-case basis. However with an increasing number of developments in the area, particularly Mid-Wales, the incremental impacts were recognised to be critical in such an evaluation.
- In the absence of any research in Wales that has attempted to quantify the impacts of wind farms on tourists, most respondents found it difficult to assess these types of impacts. Amongst those who did provide an opinion most believed that the impacts on tourism were negligible although these views were based on anecdotal evidence.
- Respondents were asked to comment on what they believed should be included in Wales Tourist Board's policy statement. Encouragingly, many respondents indicated that they welcomed the fact that WTB were undertaking this review. Furthermore, it was highlighted that in the absence of research identifying the impacts of wind farms on tourists and tourism business, the findings from this research would be essential in influencing their policy.
- Most respondents were of the view that WTB should identify areas where wind farms are not suitable for development because of their potential impacts on tourism. However, the extent of the detail in defining these 'no-go areas' is an issue where there was considerable division of opinion amongst respondents. For example, all agreed WTB should be against the siting of a wind farm in a National Park but if a wind farm was visible from a vista point in a National Park should they be against the development?
- It was also suggested that WTB should give consideration to the wider social and economic impacts of wind farms on small communities and not only take into account the impacts on tourists. Related to this, one respondent also stated that WTB should be supportive of smaller more community based wind farms where the social and economic benefits are more likely to be retained locally.

Summary of Key Findings of Case Studies in Wales

- In addition to the consultations undertaken with representatives from key stakeholders as presented above, the research programme also included case studies in two areas of Wales. In total 19 tourism businesses in Mid Wales were consulted, 10 from *Aberystwyth* and the coastal area up to Borth in the county of

Ceredigion and 9 from the inland area between *Machynlleth and Newton* in the county of Powys. The criteria for selecting the case study areas was that they should be significant tourism destination areas as well as being close to wind farm developments.

- The case studies involved telephone consultations, which were 20-30 minutes in duration and were based on a semi-structured discussion guide, similar to the one used in consultations with 'key players'.
- Similar to the consultations with 'key players', both negative and positive impacts were expected by tourism businesses from development of wind farms in Wales in general and Mid Wales in particular. The business in the Aberystwyth area had a somewhat more negative or neutral attitude and only a few respondents mentioned any positive effects. The businesses in the area of Newton/Machynlleth were more positive than those in Aberystwyth, and their views were often based on their own positive experiences.
- The positive impacts cited were as follows:
 - The notion of cheaper electricity as a benefit for both and local residents;
 - An open day at one of the wind farm developments in the area was mentioned as 'fascinating' and similar events at existing wind farms were perceived as having the potential of attracting visitors. It was stressed however, that this is only possible as long as wind farms still have a 'novelty factor' to visitors;
 - The other example of a visitor attraction mentioned was the Centre for Alternative Technology, situated near Machynlleth. Although not based on any research, it was recognised that the centre had benefited tourism giving the Dovey Valley a reputation in sustainable energy circles and thus attracting visitors;
 - One accommodation business in the area claimed to have experienced direct positive effects on the business as people working on the construction of a wind farm nearby were staying at his establishment.
- The negative impacts mentioned were as follows:
 - Several respondents were worried about what they called 'the cumulative effect' of the relatively large number of wind farms giving Mid Wales and Wales bad publicity. No direct negative effects had been recorded to date, but many businesses voiced a fear that although the wind farms do not currently prevent people from visiting Mid Wales, their development would may impact on those returning to the area in the future;
 - In addition to the long-term cumulative effect, other perceived negative impacts of wind farms mentioned were the visual impact on the landscape. Just over half of the respondents thought wind farms have already and will continue to have an adverse effect on visitors coming to the area. The most common reason given was that the majority of visitors to Mid Wales were perceived to want peace and quite in an 'unspoilt landscape' of natural beauty;

- Wind farms were also seen as having a detrimental effects on birds and other wildlife, thus effecting companies offering outdoor activities such as horse riding and bird watching;
 - In addition to the tourism related impacts, a few respondents in the area of Newton/Machynlleth were concerned about the negative impact wind farms have had on local communities, in terms of causing disputes. Differences in opinions and the unequal distribution of monetary benefits in the community were seen as causing unnecessary divides between families and neighbours.
- It is worth pointing out that the views on impacts are based on perceptions rather than any research undertaken. Similar to the respondents from other organisations, the tourism businesses interviewed found it difficult to estimate the impacts of wind farms on tourism in either Wales as a whole or their local area, without access to any research or unbiased evaluation.
 - Respondents from both the case study areas stressed the need for more information about wind farms in general and particularly in terms of how much energy wind farms are producing. The businesses stated that they would welcome a brief, accurate and unbiased evaluation of the effectiveness of wind farms in order for them to be able to make up their own mind regarding their views on wind farms.
 - Reflecting the concern about the cumulative effects of wind farms, the majority of respondents from Aberystwyth wanted WTB to oppose strongly towards further development of wind farms in Wales and especially Mid Wales. Suggestions of further actions by WTB were that the organisation should be suggesting suitable places for the development of wind farms, away from sensitive areas as well as putting their case forward jointly with other relevant organisations such as the Countryside Council for Wales and other environmental organisations.
 - The businesses of Newton/Machynlleth were somewhat more positive towards wind farms and several respondents stated that WTB should encourage wind farms and other types of renewable energy and make them into attractions. However, the majority of businesses wanted WTB to oppose to wind farms in all areas of outstanding natural beauty and the upland moorland of Mid Wales.

Summary of Key Findings of Overseas Case Study

- Consultations with representatives from organisations in Spain were undertaken to gather knowledge and experiences from a country with a substantial amount of wind farm development.
- There are around 40.2 million people living in Spain in an area of 504,782 square km. In December 2002 there were 261 wind farms in Spain. These developments produce 5,060 MW electricity, which is ca 0.5% of the total amount of energy produced in Spain. The aim is to increase the production to 5% in 2011.
- Spain has the largest wind power capacity and market in the world, after Germany and the United States. The three countries, together with Denmark account form more than 80% of total installed wind power capacity.

- No off-shore wind farms have been developed so far in Spain but there are future plans of potential developments on the Catalonian coast, south of Barcelona and in the gulf, near Gibraltar. A research programme of tourism and wind farms which focused on impacts on off-shore wind farms was the Windtour project. This was mainly conducted during 2002, within the EC programme ALTERNER 2001 and included a survey of local residents, tourists and representatives from the tourism industry.
- The findings showed a moderate support for off-shore wind farms with 42% supporting developments and 26% against them. Although 96% supported the development of renewable energies, 47% were concerned with negative effects on bird life and marine fauna and 22% were worried about loss of quality of the scenery. The main positive impact recognised was various environmental benefits, mentioned by 93% of the respondents, while the possibility of a wind farm making the scenery more interesting and attracting tourists was mentioned by 2%.
- The most important factors to take into account when developing off-shore wind farms were thought to be to situate the turbines as far away from the shore as possible (43%) and to monitor the potential impacts on wildlife (31%). Compensation for tourism was mentioned by 4%.
- The development of wind farms in Spain has grown rapidly and yet several independent studies have shown that wind farms have not had any effect on tourism in Spain, neither for inland nor coastal tourism. However there are certain places in Spain that are near their saturation point in terms of wind farm development, but those are not areas of particular importance for tourism.
- There have been a few examples of positive effects on tourism from wind farms, where a new type of tourism, so called 'green tourism' is being established when an area is promoted by sustainable energy sources. This involves, amongst other things, hotels run only by renewable energy and examples of this kind of development can be found on the Canary Islands.
- Generally, there seems to be a lack of knowledge and misinformation about the effects of wind farms on tourism businesses. This is especially thought to be the case in Catalonia, where a larger number of businesses and residents are opposing wind farms, although they are situated in very remote parts of the area. Therefore, the Spanish organisations consulted, stressed the importance of education and information about wind farms and their impact on businesses as well as for local communities.
- The example of Navarra was also mentioned, where a large proportion of Spain's wind farms are located. Wind farms have been developed in the area but in places far away from communities, where they are thought to cause little disturbance. At the same time, the number of houses in the rural part of the region has increased and local people are educated about wind farms and other types of renewable energy sources. The aim is to make as many rural communities as possible self-sustainable with renewable energies and thus facilitate the development of tourism and other industries. This process is thought to minimize the abandoning of rural areas, especially of young people, which is a significant social problem in Spain.

Summary of Key Findings of Survey of Visitors

- **METHODOLOGY:** In total, some 8 Hall Tests were undertaken with visitors to Wales during August 2003. Not only were the locations chosen based on their proximity to existing and planned developments, it was also important to obtain a geographical spread across Wales and to take account of different environments – especially onshore vs offshore. Consequently, the 8 locations reflected these factors – Aberystwyth, Machynlleth, Knighton, Rhyl/Colwyn Bay, Porthcawl, Rhayader, Welshpool and Hay-on-Wye. A total of 266 interviews were achieved.
- The specific subject matter of the research – wind farms – was not revealed to the respondents when they were recruited. Respondents were simply told that they would be asked some questions about visiting the Welsh countryside and coast. All respondents recruited for hall tests described the natural landscape and countryside scenery as important factors when deciding to visit an area. In addition, quotas were set to ensure that there was a balance of staying visitors vis-à-vis day-trippers, overseas visitors vis-à-vis Welsh and other UK visitors, and ‘active’ countryside visitors as opposed to those who were more ‘passive’ in nature.
- Seven in ten respondents had actual experience of a wind farm in Wales, with 70% indicating they had seen a wind farm development in Wales, either on this visit or a previous trip. Some 66% had seen an onshore development(s) whilst 17% had seen offshore development(s). Further details are presented later in the survey findings.
- **AGE:** Generally, the profile of respondents was relatively old – almost two thirds were aged 45 years or over (64%) whilst only 18% were aged under 35.
- **PRESENCE OF CHILDREN:** Reflecting the relatively older age profile described on the previous page, only around one in seven respondents had any children (aged 15 or less) with them on their trip (14%)
- **LIFECYCLE STAGE:** empty nester’ categorisation (52%), whilst just over a quarter were young independents (27%) and over one fifth were families (21%).
- **PARTY COMPOSITION:** The largest proportion of respondents were on the trip with their partner only (52%). A further quarter were there with other members of their family (25%), whilst 8% were with friends. One in ten respondents were on their own (10%).
- **ORIGIN:** As is the case with the tourism profile to Wales generally, the sample was made up largely of visitors from other parts of the UK – particularly England (70%). Domestic visitors accounted for one in five respondents (20%), whilst the remaining 10% of respondents were from overseas – 6% from Europe and 4% from further afield.
- **PURPOSE OF TRIP:** Just under four in every five respondents were on holiday away from home (78%), whilst a further 6% were visiting friends and relatives on holiday. The remaining 16% were on a day trip from home.
- **ACTIVITIES UNDERTAKEN:** Over two thirds of respondents were sightseeing on their trip, either from a car or coach (68%), making this the main activity undertaken overall. Also very popular however were short walks in the

countryside of up to 2 miles in length (52%). Those respondents who undertook either or both of these activities, but none of the others listed were then categorised as 'Passive' countryside visitors – 60% of the respondents fell into this category.

- **LENGTH OF STAY:** On average, visitors who were staying overnight were away from home for around eleven nights (11.2 nights overall). The average number of nights spent in Wales was 9.6 nights – around 86% of the time spent away from home.
- **PREVIOUS VISITS TO WALES:** For more than four in every five visitors in the sample, their current holiday did not represent their first ever holiday in Wales – 86% had visited prior to this. On the other hand, some 14% were on their first ever holiday in Wales.
- **TYPE OF TRIP TO THE AREA:** The sample was split fairly evenly between those respondents who were primarily visiting the one destination on their visit and those who were visiting several destinations (50% and 43% respectively). Only 7% were just passing through the area en route elsewhere.
- **MAIN ATTRACTIONS OF THE AREA:** A wide range of reasons for visiting the area were received, with only two being mentioned by more than one in five respondents (scenery and beaches, sea and coastline). Clearly, the scenic qualities of the area were very important – 29% mentioned the scenery generally, 12% mentioned the hills and mountains, and 11% were attracted by the fact the area was remote or unspoilt. In common with other surveys of tourists to Wales, other strengths mentioned revolved around particular activities, visiting family, been before and wanting to come back, and history and heritage.
- **ASPECTS IMPORTANT IN DECISION TO VISIT THE AREA:** When provided with a prompted list of aspects that might be important in deciding to visit the area, one particular aspect emerged as a key influencer – the beautiful scenery. Overall, almost four in every five respondents indicated that this was particularly important when they were deciding to visit the area (77%). One other element was mentioned by more than half of the respondents as having been important – a good place to relax and get away from it all (55%). Three other reasons were provided by between 40% and 50% of respondents - friendly people (49%), unspoilt environment (44%) and interesting history and culture (41%).
- **ATTITUDE STATEMENTS:** Respondents were then provided with a series of ten 'attitude statements', each based around a different aspect of the countryside and coast. In each case, they were asked to indicate how important each aspect was when they were taking a holiday or day out in Wales.

- *"Chance to experience unspoilt nature"*

With 60% of respondents describing the chance to experience unspoilt nature as a very important aspect of an area when deciding to visit the countryside, the importance of this aspect is clear. A further 35% described it as quite important.

- *"See only a few other visitors"*

There was a mixture of opinions on the importance of this aspect of the countryside with 51% describing it as an important factor whilst 29% described it as unimportant.

- *“Complete absence of built facilities for visitors”*

There was a mix of opinions from respondents regarding whether or not the complete absence of built facilities for visitors in the countryside was important or unimportant. Whilst 30% agreed and felt this was important, a slightly larger proportion disagreed (39%).

- *“Wide variety of things to see and do”*

There was very strong agreement amongst respondents that a wide variety of things to see and do in the countryside was an important factor – 41% described it as very important, whilst 42% described it as quite important.

- *“Wide range of different types of landscape”*

A wide range of different types of landscape was important for most of the respondents interviewed. Some 41% described it as very important and a further 47% described it as quite important – only 6% felt it was unimportant.

- *“Peace and quiet”*

The attraction of peace and quiet in the countryside and coast of Wales is clear amongst those interviewed. Almost two thirds of visitors described it as a very important factor (64%), and a further quarter (24%) described it as quite important. Only 3% felt it was unimportant.

- *“Lots of information boards telling you about the scenery and wildlife”*

The high degrees of interest in the scenery and wildlife on offer is illustrated by the fairly high levels of interest in information boards in the area. Some 80% of respondents felt that it was important.

- *“Abundant natural wildlife”*

An abundance of natural wildlife was an important feature for most of the respondents surveyed. Some 40% described this as very important and a further 46% described it as quite important – only 5% felt it was unimportant.

- *“Lots of trails and walks”*

Over three quarters of respondents described lots of trails and walks as an important element of the appeal of countryside areas (78%).

- *“Unspoilt views of countryside and coast”*

The final statement focused on the importance of unspoilt views of the countryside and coast – clearly an important consideration within the wind farms debate. This is clearly an important element of the countryside and coast of Wales – 75% described it as ‘very important’, whilst a further 22% described it as ‘quite important’ and only 1% thought it unimportant.

- **APPEAL OF PARTICULAR ASPECTS OF THE COUNTRYSIDE:** Four aspects of the Welsh countryside and coast were clearly seen as having the greatest appeal: the beaches and coastline (33%), the scenery generally (32%), hills and mountains (28%) and the unspoilt, peace and quiet and remoteness offered (22%). These key attributes are fairly consistent with the main motivations for

visiting described earlier, albeit with an even greater emphasis on the scenic qualities.

- **ASPECTS OF THE COUNTRYSIDE PARTICULARLY DISLIKED:** The main criticism of the Welsh countryside and coast amongst visitors related to refuse and litter (11%). This was especially likely to be criticised by active visitors (13%) and by those visiting coastal areas (13%). All of the other criticisms were mentioned by 5% or fewer respondents and featured a variety of different types of development or criticism – lack of toilet facilities, too commercialised, the roads, the feeling that some parts were run down (especially in seaside resorts), and that there were not enough trails.
- **EXTENT TO WHICH SPECIFIC ASPECTS OF THE COUNTRYSIDE ENHANCE OR DETRACT FROM EXPERIENCE (SPONTANEOUS):** One particular type of development was most frequently mentioned as something which enhanced the enjoyment of the countryside and coast – visitor and information centres; some 33% of respondents mentioned this spontaneously. All other developments were mentioned by fewer than 5% of respondents, although the following five were mentioned by 3-4% of visitors.
- **EXTENT TO WHICH SPECIFIC ASPECTS OF THE COUNTRYSIDE ENHANCE OR DETRACT FROM EXPERIENCE (PROMPTED):** As a means of establishing the initial and spontaneous views of respondents about wind farms relative to other types of development and facilities in the countryside, the tables below provides a summary of the proportion of respondents who felt that each development detracted from the experience and the proportion who felt that each development enhanced their experience when they visited the countryside:

Summary Table – Proportion of Respondents claiming that each facility/development DETRACTED from the experience (%)

Base: All respondents (N=266)

	ALL VISITORS
Electricity pylons and wires	48
Mobile telephone masts	37
Army firing ranges	31
Quarries	30
Planted, geometric forestry	28
Telephone wires and poles	25
Hydro-electric and other power stations	24
Wind farms and turbines	23
Hydro-electric dams/reservoirs	6
Fish farms	6
Fences, walls, hedges	4
Waymarking signs - on high ground	4
Funicular railways on mountain sides	4
Trails and tracks across open upland areas	4
Waymarking signs - on low ground	3
Planted forestry - mixed species, non-geometric	3

- Almost half of the visitors claimed that electricity pylons and wires had detracted from the experience of visiting the countryside making this the most negative type of facility/development in the eyes of most visitors (48%). The fairly recent phenomenon of mobile telephone masts were also seen in a negative light by over a third of visitors (37%), whilst almost a third mentioned army firing ranges, quarries and planted, geometric forestry (31%, 30% and 28% respectively). Some 23% of respondents felt that wind farms and turbines had detracted from the experience – a similar proportion to those mentioning telephone wires and poles (25%) and hydro-electric and other power stations (24%).

Summary Table – Proportion of Respondents claiming that each facility/development ENHANCED the experience (%)

Base: All respondents (N=266)

	ALL VISITORS
Planted forestry - mixed species, non-geometric	65
Trails and tracks across open upland areas	55
Funicular railways on mountain sides	44
Waymarking signs - on low ground	40
Hydro-electric dams/reservoirs	40
Waymarking signs - on high ground	38
Fences, walls, hedges	35
Planted, geometric forestry	29
Fish farms	18
Wind farms and turbines	17
Quarries	15
Hydro-electric and other power stations	9
Army firing ranges	4
Telephone wires and poles	3
Mobile telephone masts	2
Electricity pylons and wires	1

- Planted forestry containing mixed species and in a non-geometric format was the most positive type of development with two-thirds of the sample stating that planted forestry with mixed species in a non-geometric format had enhanced their experience of visiting the Welsh countryside (65%). Planted geometric forestry was also rated fairly positively with approximately a third of the sample indicating this type of development enhanced their experience (29%). A number of other features were felt to have enhanced the experience. Those mentioned by upwards of four in ten respondents included trails and tracks (55%), funicular railways (44%), waymarking signs on low and high ground (40% and 38% respectively) and hydro-electric dams and reservoirs. Some 17% of respondents felt that wind farms and turbines had enhanced their experience – a similar proportion to those mentioning fish farms (17%) and quarries (15%).
- WORD ASSOCIATION WITH WIND FARMS:** The most common individual response related to the energy production role of the wind farm – natural energy/environmentally friendly/clean energy (23%). Some 21% said 'big/massive windmills on a hill' whilst reference to the blades/propellers was made by 14% of respondents. Some 12% and 11% provided an initial reaction of simply 'turbines' or 'windmills'. In terms of initial reactions, it is worth noting that 10% (27 respondents) made reference to unsightly structures, detracting from the beauty of the countryside and the skyline, whilst 6% described them as noisy and 1% as ugly. Only 2% of respondents claimed to have no feelings one way or the

other about wind farms or never to have thought of them, illustrating the high levels of interest in the subject matter.

- EXPERIENCE OF WIND FARMS IN WALES:** Overall, some 70% of respondents had seen some kind of wind farm – onshore or offshore on this trip or a previous trip to Wales. More specifically, two thirds of the respondents interviewed claimed to have seen an onshore (inland) wind farm development in Wales either on this trip or on a previous trip (66%). Around one third had not seen one (32%), whilst 2% were unsure. Welsh visitors were more likely to have seen them (85%) than was the case amongst visitors from other parts of the UK or from overseas (64% and 42% respectively).
- VIEWS OF WIND FARMS AS A POWER SOURCE:** Generally, an important finding which must underpin any conclusions emerging from this research is that the vast majority of tourists interviewed were fairly positively disposed towards wind farms as a means of generating power. The largest proportion felt that they were a good idea because they were ecologically friendly (30%), whilst 15% made reference to the fact that they were a good idea because they were a natural resource, and 12% noted that it was important to identify these other sources of power.
- REACTIONS TO IMAGERY:** In order to provide all respondents with a similar amount of information upon which to provide their opinions on wind farm development, and to enable more meaningful analysis of these views and opinions, a number of images were shown to respondents of wind farms in Wales. Each respondent was shown six sets of images. The first three sets contained pictures of existing wind farm developments in Wales – all inland. Image sets 4-6 were artist's impressions of planned offshore wind farm developments – again taken from different angles and some further out to sea than others. In the case of each image set, respondents were asked to indicate their views and initial reactions to each photograph. Image set 1 produced the strongest negative reaction, mainly it would appear because of the proximity of the turbines to the camera lens – there was a split of approximately 65%-35% between negative and positive/neutral reactions. Image sets 2 and 3 also provoked fairly large proportions of negative reactions (40% and 33% respectively), however the balance was much more towards neutral/positive reactions than was the case for image set 1 (60% and 67% respectively compared with only 35% for image set 1). This tends to suggest that reactions were less negative the further away was the camera from the turbines. Image sets 4-6 provide mock-ups of offshore developments, and reactions to those were less negative in each case than they had been for each of the onshore image sets 1-3. Once again, it would appear that the further away the turbines are viewed from, the less negative the response.
- GENERAL REACTIONS ON WIND FARM DEVELOPMENT:** Having looked at all the images, respondents were then asked to provide their overall views on wind farm development in Wales. Firstly, they were asked to provide general views and reactions and then their views on the impact of wind farms on scenery. This was followed by a question related to the preferred scale of the development, the distance viewed from and finally the environmental location. Overall, over three quarters of respondents were positive or at least neutral towards wind farm development (78%), whilst 21% were clearly negative. Some 1% claimed to have no real feeling either way.

Table – Images 1-6 – General reactions on wind farm development (%)

Base: All respondents (N=266)

	Seen wind farms in Wales?			Type of visitor		Origin			Environment		All Visitors
	Yes Inland	Yes Coastal	No	Passive	Active	Welsh	Other UK	Overseas	Inland	Coastal	
Positive/ like them/ don't mind them	24	36	19	24	22	20	25	15	26	20	23
Spoil landscape/ view/ takes away natural beauty	18	18	16	19	14	15	18	12	16	18	17
Environmentally friendly/ clean	15	18	15	13	18	9	15	23	11	19	15
Ugly but understand the need to have them/ necessary evil	14	14	12	13	14	11	13	15	13	14	13
Like it because its natural power	11	18	15	14	10	20	9	23	13	13	13
Alright if there's not too many/ space them out	11	-	11	11	11	7	12	8	11	11	11
Better than nuclear power/ power stations	6	5	8	6	7	7	6	4	9	4	6
Just don't like them/ hate them	6	5	4	6	4	9	4	4	1	10	5
Other positive comments	2	5	4	1	5	-	3	4	3	2	2
Other negative comments	3	-	-	1	3	2	2	4	3	1	2
No feelings either way	1	2	1	1	1	4	1	-	2	-	1
Don't know/ not stated	-	-	3	1	1	-	1	-	2	-	1
TOTAL POSITIVE/NEUTRAL	75	79	80	75	80	72	77	82	80	74	78
TOTAL NEGATIVE	24	20	19	24	19	24	22	18	19	26	21
TOTAL NO OPINION	1	1	1	1	1	4	1	-	2	-	1
<i>Base</i>	176	44	75	160	106	54	186	26	133	133	266

- Nil respondents

- *Impact on scenery:* The largest proportion of respondents were negative towards the impact of wind farms on scenery and landscape – 33% of them said that the scenery and landscape would be spoiled by wind farm developments. Meanwhile, a further 1% described the impact as 'awful/dreadful/appalling'. Some 18% of respondents did not feel that there was a problem or that they did not notice them, however most other responses were rather more neutral or their views would be conditional on other factors – the location/area (26%), 'we have to live with it' (8%), better if they were camouflaged (3%), provided there were not too many turbines (4%) etc.

Table – Image sets 1-6 – Wind farm development – impact on scenery (%)

Base: All respondents (N=266)

	Seen wind farms in Wales?			Type of visitor		Origin			Environment		All Visitors
	Yes Inland	Yes Coastal	No	Passive	Active	Welsh	Other UK	Overseas	Inland	Coastal	
Spoil Landscape/ scenery	32	25	35	36	27	31	33	35	32	33	33
Depends on location/ area	24	25	32	23	32	28	26	23	24	29	26
Not a problem/ don't notice them	16	23	16	19	15	19	18	12	16	20	18
We have to live with it	9	7	5	8	8	6	9	8	11	5	8
OK if not too many of them	4	7	7	4	6	4	4	15	5	5	5
OK if they where a suitable colour/ camouflaged	5	7	-	4	3	2	4	-	2	5	3
Better than pylons/ power stations	3	5	3	3	4	2	3	4	4	2	3
Appalling/ awful/ dreadful	2	-	-	1	1	2	1	-	-	2	1
Other positive comments	4	5	4	3	6	4	4	4	7	1	4
Other negative comments	1	-	1	1	1	6	-	-	1	2	1
Don't know/ not stated	1	-	-	1	-	-	1	-	1	-	*
Base	176	44	75	160	106	54	186	26	133	133	266

- Nil respondents

- *Number of turbines*: On balance, the responses tended to indicate that, in terms of the number of turbines, there was a preference for small scale wind farm developments rather than large scale developments: over a third claimed that they would be better on a small scale (34%), whilst 18% said that they preferred not too many together. One respondent in every nine expressed a preference for a large scale development (11%).

Table – Image sets 1-6 – Wind farm development – number of turbines (%)

Base: All respondents (N=266)

	Seen wind farms in Wales?			Type of visitor		Origin			Environment		All Visitors
	Yes Inland	Yes Coastal	No	Passive	Active	Welsh	Other UK	Overseas	Inland	Coastal	
Better on small scale	31	36	37	36	32	33	33	42	29	40	34
Not too many together	18	16	19	20	14	17	19	8	14	22	18
Depends on location	11	11	13	9	15	17	11	8	16	8	12
Prefer large development	11	7	13	8	17	11	12	8	14	8	11
Makes no difference big ones or small ones	11	9	7	11	8	9	10	12	11	8	10
Far too many	2	2	-	2	1	-	2	-	2	1	2
Other positive comments	2	-	4	1	4	-	3	-	4	1	2
Other negative comments	3	5	1	4	2	4	3	-	2	5	3
No opinion/ none	5	7	1	4	3	2	4	8	3	5	4
Don't know/ not stated	7	9	4	6	5	9	3	15	7	5	6
Base	176	44	75	160	106	54	186	26	133	133	266

- *Distance viewed from:* For over half of the respondents, there was a preference that wind farms should be located as far away as possible, rather than nearby the area they were visiting (55%). As many as 15% expressed a desire that they be located out at sea, whilst others indicated that they felt they should be located away from areas of beautiful countryside (4%) or away from houses and roads (4%). That said, 13% felt that the distance viewed from made no difference one way or the other.

Table – Images 1-6 – Wind farm development – distance viewed from (%)

Base: All respondents (N=266)

	Seen wind farms in Wales?			Type of visitor		Origin			Environment		All Visitors
	Yes Inland	Yes Coastal	No	Passive	Active	Welsh	Other UK	Overseas	Inland	Coastal	
The further away the better/ as far away as possible	59	45	51	56	54	54	56	54	53	58	55
Be better out at sea	13	23	15	16	13	20	13	15	16	14	15
It makes no difference	13	14	12	14	12	11	15	4	12	14	13
Better away from beautiful countryside	3	2	4	4	3	7	2	8	5	2	4
Better away from houses/ roads	4	5	3	3	5	7	3	-	5	3	4
Other positive comments	2	2	8	2	6	-	4	8	2	5	3
Other negative comments	2	2	-	1	2	-	2	-	-	2	1
No opinion/ none	5	7	8	6	6	2	6	12	8	5	6
Don't know/ not stated	2	5	1	2	2	2	2	4	3	1	2
<i>Base</i>	<i>176</i>	<i>44</i>	<i>75</i>	<i>160</i>	<i>106</i>	<i>54</i>	<i>186</i>	<i>26</i>	<i>133</i>	<i>133</i>	<i>266</i>

- *Environmental location:* Spontaneously, the largest proportion of the sample (42%) suggested that the most appropriate environmental location would be out at sea. Some 18% of respondents felt that wind farms should be located as remotely as possible, whilst 7% felt they should be as far away from people and wildlife as possible.

Table – Images 1-6 – Wind farm development – environmental location (%)

Base: All respondents (N=266)

	Seen wind farms in Wales?			Type of visitor		Origin			Environment		All Visitors
	Yes Inland	Yes Coastal	No	Passive	Active	Welsh	Other UK	Overseas	Inland	Coastal	
Put them out at sea	40	50	44	42	42	41	41	50	45	38	42
As remote as possible	20	16	13	19	17	19	17	23	20	17	18
Away from people and wildlife	8	7	3	6	8	7	8	-	8	6	7
On the top of hills	6	9	3	6	6	7	5	4	3	8	6
Put them away from tourist attractions	3	2	7	4	6	6	4	4	4	5	5
Keep them in the countryside	6	7	1	5	4	6	5	-	2	7	5
Where the most wind is	4	-	4	3	5	4	4	-	6	2	4
In cities	1	-	7	2	3	2	2	4	2	3	2
Other positive comments	8	9	11	11	7	7	10	8	8	11	9
Other negative comments	4	2	1	3	3	4	3	4	2	4	3
Don't know/ not stated	4	7	11	8	4	7	6	4	5	7	6
<i>Base</i>	<i>176</i>	<i>44</i>	<i>75</i>	<i>160</i>	<i>106</i>	<i>54</i>	<i>186</i>	<i>26</i>	<i>133</i>	<i>133</i>	<i>266</i>

- **PREFERRED TYPES OF ENVIRONMENTAL LOCATION FOR WIND FARM DEVELOPMENT:** Amongst tourists interviewed, there is a clear preference for wind farms to be sited offshore – 83% of respondents provided this answer. Interestingly, as many as 93% of those who had seen this type of wind farm in Wales supported this suggestion – the highest out of all of the featured segments. Welsh visitors were also rather more supportive of offshore development (87%) than their other UK (83%) and overseas counterparts (77%). Two other types of location were suggested by a third or more respondents: remote areas of the countryside (46%) and mountainous areas (32%).

Table – Preferred types of environmental location for wind farm development (prompted) (%)

Base: All respondents (N=266)

	Seen wind farms in Wales?			Type of visitor		Origin			Environment		All Visitors
	Yes Inland	Yes Coastal	No	Passive	Active	Welsh	Other UK	Overseas	Inland	Coastal	
Offshore	82	93	81	84	81	87	83	77	86	80	83
Remote areas of the countryside	52	52	31	41	53	48	46	42	46	46	46
Mountainous areas	35	39	23	34	29	41	32	19	37	28	32
On existing areas of farmland	18	16	25	20	18	22	18	23	20	19	19
On the coast	14	11	23	13	20	9	17	23	16	16	16
In areas of forested land	11	16	13	10	15	19	10	12	14	11	12
At the sides of roads	10	14	8	8	11	7	10	12	8	11	9
Near settlements	7	7	11	6	10	2	9	12	8	8	8
In lowland locations	8	11	7	6	9	7	6	12	5	9	7
Areas with a special scenic landscape designation (e.g. National Parks, Scenic Areas)	3	5	8	1	9	2	5	4	4	5	4
Others	4	2	4	5	2	6	3	4	3	5	4
Don't know/ not stated	2	-	1	3	-	-	2	-	2	1	2
<i>Base</i>	<i>176</i>	<i>44</i>	<i>75</i>	<i>160</i>	<i>106</i>	<i>54</i>	<i>186</i>	<i>26</i>	<i>133</i>	<i>133</i>	<i>266</i>

- **ATTITUDE STATEMENTS:** Respondents were then provided with a list of fourteen attitude statements about wind farms and asked to indicate the extent to which they agreed or disagreed with each of them on a scale from 'Agree Strongly' down to 'Disagree Strongly'.
- *"Wind farms spoil the look of the Welsh countryside"*
Some 51% of respondents agreed with this statement and although 34% disagreed, this would tend to suggest that in the eyes of visitors, on balance, wind farms have a negative visual effect.
- *"Wind farms spoil the look of the Welsh coast"*
Some 43% of respondents agreed with this statement and 41% disagreed. This suggests a more balanced reaction to the possibility of offshore wind farm developments compared to a greater negativity toward onshore developments in the Welsh countryside.

- *“I would be interested in visiting a wind farm development if there was a visitor centre”*

The responses to this statement suggest that there would be a fair degree of interest in visiting a visitor centre at a wind farm development – 68% would be interested in visiting, whilst less than a quarter expressed little or no interest in visiting (23%).

- *“It would be an added attraction if wind farms were located in popular tourist areas”*

As was the case in Scotland, this statement received the largest amount of disagreement – only 21% of visitors felt that wind farms would be an added attraction in tourist areas – 67% disagreed. This would tend to suggest that, as far as tourists are concerned, their location should ideally be away from tourist areas.

- *“I would prefer to see 20 wind farm developments each with 10 turbines, rather than a single large development with 200 turbines”*

In Table E-58, the responses based on the six image sets suggested that most respondents would prefer to see a larger number of smaller wind farms rather than one major wind farm. This is confirmed in the response to this attitude statement – some 59% agreed with it, compared to 21% who disagreed.

- *“At the moment, one of the main attractions of wind farms is that they are relatively unique – and few and far between”*

This statement received a large degree of support in its favour – 62% of respondents agreed with it, resulting in an average score of +0.64. Just under one in five respondents disagreed (18%)

- *“I would prefer to see wind farms in areas already developed for agriculture rather than in the ‘wilderness’”*

Some 42% agreed with this statement, however a similar proportion disagreed (37%) suggesting a division of opinion amongst respondents regarding their preference between agricultural land and ‘wilderness land’.

- *“Seeing a wind farm would add to my enjoyment of the Welsh countryside”*

Some 59% disagreed whilst only 17% agreed. Generally speaking, seeing a wind farm would not provide most tourists with any added enjoyment on a visit to the countryside.

- *“Seeing a wind farm would add to my enjoyment of the Welsh coast”*

Again, some 59% disagreed whilst only 19% agreed. Although there has been a general feeling throughout the research that offshore developments would be preferred, it is important to highlight that even if located there, they would only represent a positive experience and add to the enjoyment of a minority of visitors. Others would be, at best, ambivalent to the turbines.

- *“I would tend to avoid an area of the countryside if I knew there was a wind farm there”*

Just under a quarter of respondents claimed that they would be likely to avoid any parts of the countryside with wind farms (22%), however a significantly larger proportion would not (66%).

- *“I have no strong opinions one way or the other on the development of wind farms”*

The level of interest in the subject matter is highlighted by the responses to this statement – almost two thirds of respondents disagreed, illustrating that they had some form of opinion, one way or another (62%). Only around a quarter tended to agree (24%).

- *“Using wind farms in the promotion of Wales to tourists would provide an added appeal to visitors”*

There would appear to be fairly limited potential to use wind farms in the promotion of Wales to tourists generally. Only 24% agreed with this statement whereas as many as 59% disagreed. It is worth noting however that the equivalent percentages in the Scottish study were 15% and 65% suggesting that perhaps some more potential exists for this for Wales than was the case for Scotland.

- *“Wind farms should be prohibited in offshore areas which are adjoining land of high landscape value (e.g. National Parks, Areas of Outstanding Natural Beauty and Heritage Coast)”*

Four in five visitors agreed with this statement (79%), highlighting their desire that wind farm development must be sensitively located. Only 15% disagreed.

Table – Attitude statements

Base: All respondents (N=266)

	Agree Strongly	Agree Slightly	Neither	Disagree Slightly	Disagree Strongly	Don't Know	AVERAGE SCORE
Wind farms spoil the look of the Welsh countryside	31	20	15	20	14	-	+0.34
Wind farms spoil the look of the Welsh coast	26	17	13	23	18	2	+0.08
I would be interested in visiting a wind farm development if there was a visitor centre	44	24	8	7	16	*	+0.73
It would be an added attraction if wind farms were located in popular tourist areas	6	15	12	20	47	*	-0.87
I would prefer to see 20 wind farm developments each with 10 turbines, rather than a single large development with 200 turbines	41	18	18	6	15	2	+0.66
At the moment, one of the main attractions of wind farms is that they are relatively unique - and few and far between	31	31	20	7	11	1	+0.64
I would prefer to see wind farms in areas already developed for agriculture rather than in the wilderness	18	24	20	15	22	1	+0.02
Seeing a wind farm would add to my enjoyment of the Welsh countryside	6	11	24	18	41	1	-0.77
Seeing a wind farm would add to my enjoyment of the Welsh coast	5	14	21	18	41	*	-0.77
I would tend to avoid an area of the countryside if I knew there was a wind farm there	15	7	11	21	45	*	-0.75
I have no strong opinions one way or the other on the development of wind farms	9	15	15	23	39	-	-0.67
Using wind farms in the promotion of Wales to tourists would provide an added appeal to visitors	4	20	16	18	41	1	-0.73
Wind farms should be prohibited in areas of high landscape value (e.g. National Parks and Areas of Outstanding Natural Beauty) and on land which is visible from such areas	61	18	5	12	3	*	1.22
Wind farms should be prohibited in offshore areas which are adjoining land of high landscape value (e.g. National Parks, Areas of Outstanding Natural Beauty and Heritage Coast)	48	17	6	17	11	-	0.73

- **IMPACT OF WIND FARMS ON FURTHER HOLIDAYS IN WALES:** The largest proportion of respondents claimed that it would make no difference to their likelihood to take holidays in the Welsh countryside if the number of wind farms increased (68%). A further 9% claimed that any impact would be minimal. On the other hand, a significant minority would be affected: 11% would 'steer clear of the area' and 2% would be 'less likely to come back'. This would tend to suggest that a wind farm development could have a negative impact on future visits – none of the respondents replied that they would be MORE likely to return for example

Table – Impact on further holidays in the Welsh countryside and coast if the number of wind farms was to increase (%)

Base: All respondents (N=266)

	Seen wind farms in Wales?			Type of visitor		Origin			Environment		All Visitors
	Yes Inland	Yes Coastal	No	Passive	Active	Welsh	Other UK	Overseas	Inland	Coastal	
Would make no difference	66	70	72	64	75	65	68	77	73	63	68
Steer clear of area	14	5	7	9	14	19	9	12	8	14	11
Depends on area	8	7	8	12	4	7	9	8	8	10	9
Minimal impact/ makes no difference	9	11	9	11	6	6	10	8	8	9	9
Less likely to come back	1	-	4	2	2	2	2	-	2	2	2
Others	2	2	1	3	-	2	2	-	1	2	2
Don't know/ not stated	1	5	-	1	1	-	1	-	1	1	1
<i>Base</i>	176	44	75	160	106	54	186	26	133	133	266