

The impact of wind turbines on tourism – a literature review

**Prepared for Isle of Anglesey County Council
by The Tourism Company
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Tourism is a key sector of the local economy on the Isle of Anglesey affecting the livelihoods of many people both directly and indirectly. The appeal of the island's landscape and especially the coastal belt is considered to be a key strength of Anglesey as a visitor destination, now and in the foreseeable future. The island has already seen some development of wind turbines, both on and off-shore, while the many proposed new projects would lead to a significant increase in their numbers. This is the subject of much debate on the island, including concerns about the possible impact on tourism, largely as a result of the effect of the turbines on the appeal of the landscape.

The Tourism Company was asked to undertake a review of the literature on the impact of wind turbines on tourism. This report contains the results of that review. The methodology has involved a comprehensive web-based search using consumer facing and academic search engines. The search centred on key words linking tourism with wind energy, windfarms and wind turbines¹. The material accessed in this way was then further checked for citations and references, and those relevant were accessed directly from the web. From the degree of cross-checking and level of repeated referencing, we are confident that we have reached the material most relevant to informing the situation on Anglesey.

This report is in four sections. The first sets out the scope of the literature. The next section looks at evidence on tourists' attitudes to wind turbines. This is followed by a consideration of the response of the tourism sector and evidence of impact on performance. We finally provide some brief observations on the findings presented in the report.

1 The scope of research and literature on this subject

While the amount of accessible written material on the impact of wind turbines on tourism is not extensive, a range of reports, articles and statements relating to this subject is available, emanating particularly from the UK but also from some other countries.

Most of this material was produced in the previous decade, with a small amount from the end of the nineties. Rather less has emerged in the last two years.

It is important to be clear about the status of the written material available. The coverage of the subject in peer reviewed academic journals or publications is quite limited and is mostly related to the wider context rather than specifically to tourism impacts. Most of the directly relevant original research appears in reports published by research institutes or their client bodies, including tourist boards and other

¹ It should be noted that we are concerned equally with the impact of single wind turbines, and especially their cumulative impacts, as well as with larger sites that are sometimes referred to as windfarms, and so we have been careful to ensure that our search and review covers both.

organisations. This is customarily referred to as 'grey literature'. This status does not mean that the evidence is necessarily less admissible and most reported research and analysis appears to be professionally and objectively conducted.

It is important, however, to be aware of the origin of some of the material. Some primary research and especially some of the written summaries of evidence has been commissioned or presented by parties who are not disinterested in the results. This includes windfarm developers and representative bodies in the field of renewable energy, or local or national groups opposed to specific or general windfarm development. We have taken note of this in this review.

Literature relating to the broad context of tourism, landscape and wind energy

The bulk of this report focuses on literature specifically covering the impact of wind turbines on tourism. This is the material we have accessed and assessed in detail. However, it is important to be aware that the subject as a whole can, to some extent, be informed by a wider body of research and literature.

Many tourism texts, research studies and strategies, both generic and for parts of the UK, contain evidence on tourist motivations and activities. For example, the Wales Visitor Survey (Welsh Government, 2012) provides quantitative evidence of the purpose of tourist day visits and overnight stays in Wales, from which the relative importance of the countryside and scenery can be determined.

A number of studies have considered the reaction of the general public, rather than tourists *per se*, to wind energy and the impact of wind turbines. Many have concentrated on the reaction of residents in areas affected by windfarm developments, e.g. Jones and Eiser (2010). While these studies are helpful in providing a further understanding of general perceptions, issues and concerns they have not looked particularly at tourism and do not seek to isolate impacts on the sector. Occasionally reference is made to tourism within the context of local community perspectives, e.g. Eltham et al. (2007), Sustainable Energy Ireland (2003).

A further set of literature covers assessment of the impact of wind turbines on landscape. These concentrate on physical and aesthetic issues including assessment of impact on quality and values in different landscape types and settings. While implications for tourism can be inferred from them, they tend not to make a direct connection with the sector. An example is the Study of Landscape Sensitivities and Constraints to Wind Turbine Development in the North Wessex Downs AONB (2006), which provides a helpful analysis of landscape issues but makes no reference to tourism.

Literature containing primary evidence on tourism impacts

A number of reports present primary research on the impact of turbines on tourism and specifically on the response by tourists to their existing or potential presence in destinations visited. The main studies for the UK and Ireland are shown in Table 1.

Table 1: Main studies with primary evidence in UK and Ireland

Date	Location	Author	Primary research undertaken
2002	Scotland	NFO/System 3 for Visit Scotland	180 interviews of tourists in Hall Tests in 6 locations across Scotland. Consultation with 20 tourism enterprises Consultation with key bodies
2002	Argyll and Bute	MORI for British Wind Energy Association	307 face to face interviews with tourists
2003	Lake District NP boundaries	Leeds Met University for Friends of the Lake District	Survey of 143 tourists and 24 tourism organisations
2003	Wales	NFO World Group for VisitWales	266 interviews in Hall Tests in 8 locations across Wales Consultation with 19 tourism enterprises Consultation with key bodies
2004	North Devon, Newquay and Mid Wales	University of the West of England for Devon Wind Power	379 tourists and day visitors interviewed in the three sites
2007	Ireland	Lansdowne Market Research for Failte Ireland and NITB	1000 interviews with tourists in Republic of Ireland and 300 in Northern Ireland
2008	Scotland	Glasgow Caledonian University, Moffat Centre, CogentSi for Scottish Government	Survey of 380 tourists in 4 locations in Scotland. Internet survey of 600 potential UK and 100 potential US tourists

A number of additional studies have been undertaken in parts of the UK relating to very specific windfarm sites or proposed developments. Examples include:

- A survey of 331 visitors at Brean, Somerset by Centre for Sustainable Energy, 2002
- A survey of visitors at Lambrigg, Cumbria by Robertson Bell Associates, 2002
- A survey of tourism providers (139 responses) in the Western Isles by TMS, 2005

Some surveys of users of specific tourist facilities have also been undertaken on an *ad hoc* basis and these are referred to where relevant later in the report.

Turning to overseas research, there is a further, limited amount of material from other parts of the world on the impacts of wind turbines on tourism. While it has not been possible to undertake a comprehensive review of this, we have looked in some detail at individual reports and citations relating to international evidence. The following broad picture emerges:

- There are no obvious major primary research studies on the overall impact of wind turbines on tourism.
- Studies in the last decade in some European studies on overall attitudes to wind energy have provided some general indication of the level of public concern about the impact on scenery and tourism – e.g. Synovate (2003) for France and Bielefeld University (2003) for Germany.
- More specific reports from European countries on the impact of windfarms on residents and tourists (often with the two taken together and not sufficiently differentiated) have been cited in the UK studies. In particular, there has been

reference to attitudes in Denmark, which has seen significant windfarm presence for many years. Attitudinal studies in parts of Spain are also reported.

- In the USA there have been a number of sizeable studies undertaken on the potential economic impact of new off-shore windfarms, including research on visitor's attitudes to future beach trips – e.g. Blaydes et.al (2007), Global Insight (2008).
- Various reports on proposed windfarm developments elsewhere, e.g. South Africa, Australia, have been undertaken, but usually without primary research on tourists and often quoting the UK research evidence (notably from Scotland).
- A recent study in the Czech Republic including a primary survey of visitors and enterprises, is, unusually, to be found in the academic literature. Frantal and Kunc (2011).

Commentaries and summaries

A number of reports and websites have provided a commentary on the issues relating to wind turbines and tourism, usually with a selected reference to the research based evidence. Examples include:

- 'The impact of wind farms on the tourist industry in the UK' Prepared by the British Wind Energy Association (BWEA) For the All-Party Parliamentary Group on Tourism, May 2006
- 'Windfarms and the Visitor Economy', a journalistic coverage in VisitBritain's monthly commentary, Foresight in 2006

Internationally, there are a number of examples of where representative bodies of wind and alternative energy interests have assembled evidence on the impact on tourism to support their positions, e.g. AWEA (2004).

2 Tourists' reaction to wind turbines in destinations

This section of the report looks at the evidence from the literature on tourists' attitudes to wind turbines and how they react to them now and may do so in the future. It covers only evidence of reported visitor perceptions; it does not look at evidence of actual behaviour, which is covered later.

In presenting this evidence we have concentrated in the main UK and Ireland studies, although we do refer to more specific studies and international results where relevant. In order to save space, we refer below to the four main studies as follows
Scotland 2002: NFO study for VisitScotland in 2002
Wales 2003: NFO study for VisitWales in 2003
Ireland 2007: Landsdowne study for Failte Ireland and NITB in 2007.
Scotland 2008: Glasgow Caledonian et.al. study for Scottish Government in 2008

Methodological issues

It is important to be aware of a debate on the methodological approach of the main UK studies in the last ten years. The 2008 report to the Scottish Government criticised the approach of the two earlier studies in 2002 and 2003 for VisitScotland and VisitWales by NFO, casting doubt on the suitability of Hall Tests, the sample size, the filtering of respondents interviewed and the use of potential leading questions. This criticism was taken verbatim from earlier views expressed by the British Wind Energy Association, which may not have been impartial.

Having looked at the approach adopted by NFO in the earlier Wales and Scotland studies we believe that this appears sufficiently sound for the results to be fully accepted as evidence when properly interpreted, and to be at least as reliable as the results from other more recent studies. The Hall Test method is quite appropriate for investigating issues of this kind. The filtering questions do not appear to restrict those sampled other than visitors coming for business reasons or activities not related to the nature of the destination.

General position on wind energy and tourism

The importance of attractive landscapes and natural beauty to tourists is affirmed by all the studies considered in this review. Initial questions of tourists about motivations for visits, before asking them about wind farms, have always shown that the scenic appeal of the area is a primary influence. Typically, this applies to at least 75% to 80% of tourists surveyed irrespective of the country and location.

A striking finding from all studies in the literature is that a significant majority of tourists surveyed are largely positive about the generation of energy through wind turbines and are not opposed to it in principle. In this respect, tourists appear to be in line with the wider population and possibly even more in favour of alternative energy. Where figures are quoted, over 80% of tourists surveyed were in favour of wind energy.

Some studies, e.g. Ireland 2007, directly relate positive feelings towards seeing wind turbines in the landscape to personal attitudes to green energy. Similar conclusions have been drawn in Denmark and elsewhere.

Attitude to current and future wind turbines in destinations visited

The location of interviews in the four main studies were in destinations that contained some windfarms, although the surveys were generally conducted in strategic locations such as TICs, rural towns or visitor attractions away from the actual windfarms. Awareness of the presence of wind power generation was quite high amongst visitors, with between 46% and 70% having seen turbines at some point during the holiday in question.

There was some similarity in the overall response to wind turbines in the countryside between the different studies. Most tourists felt that turbines have either a positive or neutral affect on the landscape. The fact that wind turbines are attractive to some tourists has been brought out in many studies. In Ireland 2007 and Scotland 2008 the proportion of tourists considering that windfarms have a positive effect on the landscape was around 40%.

However, a significant minority believed that they had a negative impact. In the NFO studies in Wales and Scotland around 21% of tourists interviewed had a clear negative reaction to windfarms. This percentage increased when presented with the statement that “the landscape is spoiled by windfarm development” (34% agreeing in Wales and 38% in Scotland). The Scotland 2008 study found 25% believing that windfarms had a negative impact on the landscape, and in Ireland 2007 the equivalent was between 18 and 32% depending on the landscape type.

Quite similar results for tourists reporting a general negative attitude to turbines in the landscape can be found in some other countries. The recent study in the Czech

Republic reported that 27% of surveyed tourists, who included Czechs, Germans and others, agreed that turbines affect landscape character (Frantal and Kunc, 2011). Similarly, in Germany 27% of tourists considered that wind turbines spoil the landscape (University of Bielefeld, 2003). In a general study in France, 22% of the population believed wind turbines affect tourism negatively (Synovate, 2003). Even in Denmark, one study reported that whereas people are positive about existing windfarms those with negative attitudes to significant further growth in on-shore windfarms were as high as 35% (Ladenburg et al, 2005).

While these are quite general figures, some more detail is available from some of the main studies. There is some evidence that negative response to actually observing turbines when travelling may be less than when reacting to hypothetical situations. In Ireland only 15% responded negatively to actual sightings on the holiday in question, with 45% reacting positively. In the NFO studies, visitors with experience of wind turbines were marginally less negative than those without.

It is also clear, however, that one needs to be more aware of the kinds of situation that people have in mind when they are reporting their reactions and attitudes. In Ireland, for example, most people simply saw wind turbines on the horizon while driving.

The different levels of response to different scenarios were shown up by the NFO studies in Wales and Scotland. Here, the tourists in the Hall Tests were given a range of images of wind turbines at different distances away from the viewer and in different landscapes. As many as 65% had a negative reaction to one of the images, while this reduced to 40% and then 33% in response to other images.

In general, the studies found little difference in the reaction to wind turbines across the age ranges. The NFO studies distinguished 'active' (hill walkers, specific outdoor activities) from 'passive' tourists (sightseers, short walks). There was very little difference in their reactions, although active tourists were slightly more likely to suggest that their reaction depended in the location of the turbines. The Scotland 2008 study found slight more acceptance of turbines amongst hill walkers than general tourists, with overseas visitors also being more positive. The Czech study suggested that families were least likely to be affected by windfarms as they have other preoccupations.

Some interesting comparisons of attitudes to wind turbines compared to other structures in the landscape are available from the studies. The Wales 2003 study presented tourists with a list of possible landscape influences and asked whether they believed they detracted from the countryside experience. The items most frequently identified negatively were pylons (48% of interviewees) followed by phone masts (37%). Windfarms were in eighth place (23%). Similar results were found in Scotland 2008 – when tourists were asked to indicate what structures affected landscapes negatively, 49% selected pylons and 25% windfarms. Here, power stations were also on the list given to tourists and were selected by 26%.

Possible effect on future visits

While reaction to wind turbines in the landscape is clearly important, a more significant indication of possible impacts on tourism is the extent to which tourists believe that the presence of wind turbines may affect the chances of making return visits. There is some considerable variation between the studies in this respect.

The Scotland 2008 study found that 96% of tourists interviewed were not affected by the current level of turbines in considering a future return visit to the area, with this reducing only to 93% even when presented with images of expanded wind farms. This positive result is at variance with the evidence from the internet survey within the same study, which found 18% saying they would not visit an area with a windfarm.

In Ireland 2007 75% said that expansion in wind farms would have no effect on a decision to come back. In the Wales 2003 study 77% said that if the number of wind farms increased this would make no difference to their likelihood to take holidays in Wales, while the equivalent figure in Scotland 2002 was slightly lower.

Some other studies also provide relevant results. In the Lake District National Park boundaries study conducted in 2003, 22% of tourists said they would visit less often if the wind farm proposals went ahead. By contrast in the study in Argyll (2002) 91% said wind farms make no difference to them. A similar result was reported in a study in North Devon (UWE, 2004), where 94% said they would not be discouraged from visiting the area if there was a windfarm, and in the Czech study (around 90% likely still to return).

To some extent, the different results from the studies may reflect what the tourist understands as 'to this area' when considering the likelihood of returning. The areas in question in the Scotland 2008 visitor survey, for example, were quite broad, with questioning held in places like Stirling Castle. A full understanding of the results would also require more knowledge of what the respondents had in mind when considering windfarms, including what images were presented to them.

Evidence of the effect of wind turbine location and numbers

Some evidence is available from the studies on the effect on tourists of the proximity of wind turbines to them, on the size of wind farms and the types of landscapes in which they are located.

In general, tourists prefer to see them in the distance. In Wales 2003 the majority wanted them to be 'as far away as possible' and significant negative reaction to images was partly related to proximity. Maybe for these reasons, almost all studies, both UK international, point to a considerable preference for turbines to be located off-shore rather than on-shore (e.g. in Wales 2003, 83% preferred them off-shore).

Research in the USA has revealed some interesting data about likely reaction to off-shore turbines depending on how close they are to the shore. A study in Delaware found that only 55% of tourists would return to the same beach if turbines were located within 0.9 miles of the shore, while 74% would return if they were 6 miles away and 94% if over 13 miles from the shore (Blaydes et. al., 2007). Work in New Jersey also showed how reaction related to distance, with significant differences in potential lost revenue when locating turbines 3 miles rather than 6 miles from the shore (Global Insight, 2008).

Looking more specifically at types of landscape where tourists would prefer to see turbines located, the results are quite varied. In Scotland 2002 and Wales 2003 people marginally preferred them to be in farmland rather than more wild places. In Ireland 2007, tourists were less negative towards turbines in 'bogland' (20% negative) than in mountains (29%), farmland (30%) or coastal locations (32%).

Turning to the reaction to the numbers and distribution of turbines in the landscape, results are quite varied. The NFO studies in Wales and Scotland found tourists generally favouring a number of smaller windfarms of up to 10 turbines rather than a larger windfarm of around 200. The Ireland 2007 study also showed preference for turbines to be in small groups. However, the Scotland 2008 study concluded that it was important not to have multiple windfarms in view at any one time, believing that fewer, larger windfarms, leaving many areas with no turbines in view, would be preferable to a scattering of smaller windfarms across the landscape. Its stated conclusion was that “to minimise the impact on tourism very large single developments are preferable to a number of smaller developments, particularly when they occur in the same general area”.

3 The impact of wind turbines on the tourism sector

Having considered the reaction of tourists, this section looks at the more limited body of evidence on the reaction of tourism stakeholders, including businesses, to wind turbines and on the overall affect on the tourism sector.

The reaction and concerns of stakeholder bodies and tourism enterprises

The NFO studies in Wales and Scotland reported on consultations with a range of public sector bodies involved with development, tourism and conservation, local authorities and tourism industry representatives. There was a general feeling that windfarms were not materially affecting tourism at that time (2002/3) but equally there was considerable concern over the potential impact of their significant expansion. Most stakeholders held very positive views about green energy but were concerned about visual impact and felt that location of turbines had to be carefully handled.

Consultation with enterprises as part of the NFO studies again confirmed broad support for green energy. Views on wind turbines were mixed, with around half being concerned about potential impacts and cumulative effects, owing to their guests' enjoyment of natural beauty. Many enterprises wanted more evidence, both of the possible impacts on visitors and on the efficiency of turbines as suppliers of energy.

Quantitative measures of the reaction of enterprises also suggest divided opinion in some areas. For example, in the Lake District NP boundaries study 46% of enterprises felt that new windfarms would bring loss of business. In some areas, tourist trade reaction is more strongly negative. In the Western Isles a sizeable survey by TNS in 2005 (cited in Scotland 2008) revealed that 70% of tourism enterprises felt that new windfarm developments there would destroy the natural landscape and fewer tourists would visit.

Further negative views from the private sector, especially amongst those who depend on nature or activity based products, are presented by VisitScotland (2008). They report on a study carried out in April 2006 by Wild Scotland, the association of wildlife tour operators, which showed that 61% of operators in Scotland felt the impact of wind farms would be negative. A survey in the same month by Activity Scotland, the association of activity holiday operators, revealed that 88% of operators believed the likely impact to be negative.

Some evidence is available from enterprises reporting on their own canvassing of opinion amongst their guests. Wilderness Scotland, an environmentally-focused tour operator, conducted a survey among their clients in 2005 which showed that

91% would not return to the Highlands of Scotland if wind farms are developed in a significant way. Another report of an enquiry by the owners of self-catering accommodation in Argyll found that 70% of their guests said that they would not return if a windfarm was built in the area (Strachan, 2004).

The limited amount of evidence from overseas enterprises is more positive. The Czech study found that no more than 12% of tourism enterprises were concerned about the impact of turbines. Reports from the trade in Denmark are also positive. On the other hand, tourism stakeholders are meeting at the ITB tourism fair in Berlin in 2012 to debate concerns about growing wind turbine presence in the popular hill walking areas in central Germany.

Evidence of effect on tourism performance

The literature contains very little evidence about the actual impacts on tourism volume and value in areas where windfarms have been established. This lack of robust longitudinal evidence of changes over time is a surprising gap and needs to be addressed.

Having said this, some sporadic evidence is available which suggests that visitor volumes have not been adversely affected. Examples include:

- Reports from some facilities in Denmark (e.g. a campsite and TIC in Nysted) of increasing numbers in the last 10 years, despite being close to a windfarm (cited in Scotland 2008).
- Some evidence that general tourism volumes have gone on increasing in broad regions which have also seen windfarm development (e.g North Germany, South West England, Cornwall) – i.e. they have not lost market share. However, this appears not to have been looked at in detail and there is little attempt to consider this against market types and motivations.
- A report in Cornwall on an inland windfarm, Carland Cross, which compared residents' attitudes in 2006 with those in 1991 when the farm was developed (Eltham et al, 2008). In general there had been a significant shift by residents towards more support for the windfarm, including in opinion about visual appeal (shifting from 6% to 40% finding it attractive). The residents also felt there had been no change in tourism activity over this period, although this was not anticipated by them anyway as this is a transit area with few tourism facilities.

Some studies report a positive interest by tourists in visiting windfarms and some have developed visitor centres which have been well attended. However, most studies have anticipated that this may be driven by a novelty factor that is likely to wear off as turbines become more commonplace.

A number of studies have sought to use the results of their surveys to estimate the economic effect of wind energy development on tourism. In particular, this was a primary purpose of the Scotland 2008 research. This study used a sophisticated model which involved a GIS based analysis, using a range of data including: the percentages of visitors in the surveys saying they are influenced by windfarms; patterns of visitor flows and accommodation location; current and proposed future windfarm locations and their 'zones of visual impact'; estimates of possible reduction in price of rooms affected by views of turbines; and the structure and linkages of tourism in the economy. This concluded that, as a result of wind turbine effects on tourism, Scotland as a whole would lose a maximum of 211 Full Time Equivalent Jobs (equivalent to 0.1% of tourism employment in Scotland) equivalent to £4.7m of Gross Value Added at 2007 prices. The study pointed out that the relative effect on

Scotland as a whole would be less than in certain areas, owing to a substitution effect with tourists switching destinations within Scotland.

The result was partly affected by the high proportions of tourists in Scotland likely to see windfarms in transit on the main roads. For this and other reasons it is hard to use these results to judge the economic impact on individual coastal areas where turbines may be located near to holiday destinations.

Policies and position statements on wind turbines and tourism

Where the studies have sought to draw conclusions they tend broadly to suggest that the overall impact of wind energy on tourism as a whole is not large but that there are issues of visual impact which affect some visitors and therefore care should be taken in future over the siting of wind turbines, particularly in sensitive and attractive landscapes. This line has tended to be reflected in current public policy statements.

The official position of VisitWales is that of the Welsh Government, as follows: *The Welsh Government acknowledges that the scenic quality of Wales remains its most distinguishing tourism asset. Consequently, large scale wind-farm developments in Wales' National Parks and designated Areas of Outstanding Natural Beauty would be contrary to the Welsh Government's planning policy, which seeks to concentrate such development in seven areas to prevent their proliferation in the countryside.*

VisitScotland has a 'Position Statement on Wind Farms' (2008) which runs to some five pages. Broadly, this:

- Accepts wind farm development in principle.
- Believes that targets for tourism and renewable energy are not incompatible and that sensitively developed and sited windfarms should not have a negative impact on tourism growth.
- Places emphasis on local determination by planning authorities based on local consultation.
- Is concerned over the proliferation of speculative development proposals, some of them in areas of high landscape or scenic value or in locations which directly impact on tourism operations or activity.
- Would welcome a more strategic approach that protects sensitive areas.

Failte Ireland recognises Irish government guidelines that "Wind energy developments are not incompatible with tourism and leisure interests, but care needs to be taken to ensure that insensitively sited wind energy developments do not impact negatively on tourism potential". It is against wind energy development in National Parks and areas of scenic importance and points to the need for Strategic Environmental Assessment of new developments to address the issues of impact.

4 Some observations

It is important that the information contained in this review is read in its entirety, as it is already a summary of evidence, often in itself summarised from fuller material. However, a small number of observations are made below which may be of use to readers in making their own assessment of what has been presented.

- The positive attitude of most tourists to green energy, including wind, is an important factor and could be used to advantage. However, attitudes to energy

generation and the issues involved may change over time and it is important to keep abreast of this.

- Only a minority of tourists appear to be negative about wind turbines and believe that they spoil the landscape. However, this is a significant minority.
- Tourists' reaction to wind turbines appears to be affected by how and where they see them. Certain images have stimulated a majority negative reaction. Proximity may be an issue. In general, they prefer to see them in the distance and preferably off-shore.
- Generally tourists prefer smaller windfarms to larger ones. However, there is no firm evidence to judge their likely reaction to having a lot of individual turbines or small clusters dotted across a landscape. The impression from the research is that they may prefer to see them in one place rather than everywhere.
- Wind turbines are not seen as negatively as some other structures in the countryside, notably pylons.
- General sightseers, who come because of the attractive scenery, are equally as likely to be negatively affected by wind turbines as more active tourists. Visitor profiles appear to make little difference.
- Evidence is mixed on the proportion of tourists who may choose to stay away from areas with wind turbines in future. While this may be a relatively small minority it could be quite damaging to markets in certain locations.
- While few tourism enterprises are opposed to wind energy generation in principle, many have concerns about the future effect of wind turbines on their business. A few have based this concern on testing this with guests and more evidence of this kind would be helpful.
- The negative effect on tourism performance where windfarms have already been established may not be as great as some people fear. However, far too little firm longitudinal evidence on this is available.
- Evidence from the UK and Ireland on reaction to existing wind turbines may not be a reliable guide to the future, given the very great expansion that is planned over coming years.

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