University of the West of England
BRISTOL

FULLABROOK WIND FARM PROPOSAL, NORTH DEVON

Evidence gathering of the impact of wind farms on visitor numbers and tourist experience

Commissioned by:

North Devon Wind Power (M. Baker Group Ltd.)

Conducted by:

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Contents

Executive Summary

This one-page summary contains the key findings of a study of the impact of wind farms on visitor numbers and tourist experience. The research was undertaken on behalf of Devon Wind Power by the Geography Research Unit at the University of the West of England, Bristol where Professor Cara Aitchison was the Project Manager and Principal Researcher.

The research was designed to provide evidence of the potential impact of the proposed wind farm development at Fullabrook in North Devon, together with evidence of the tourism-related impact of two existing wind farms in Cornwall (Bears Down and St Breock) and two in Mid-Wales (Carno and Bryn Titli). A total of 379 day visitors and tourists were interviewed at the three locations during May 2004 using an interviewer-administered questionnaire with 21 questions. The empirical research was contextualised within a review of tourism and its relationship to the various sustainable development strategies in the South West.

The proposed wind farm development, on a site at Fullabrook Down between Barnstaple and Ilfracombe, is for 20 turbines each with a capacity of 3MW. The development is intended to make a significant contribution towards the government s target of increasing renewable energy supplies from approximately three per cent of energy production at present to 15% by 2015. This will also make a contribution to meeting the legally-binding European target of reducing 1990 levels of greenhouse gas emissions by 12.5% by 2008-2012 and reducing carbon dioxide, the main greenhouse gas, by 20% relative to 1990 levels, by 2010.

Although most wind farms are sited in or near popular rural leisure and tourism locations, there has been limited previous research examining tourists attitudes towards the location of wind farms in or near areas that they visit for holiday and/or leisure. The opportunity to provide robust evidence determining the attitudes of tourists towards renewable energy and the impact of wind farms on visitor numbers, tourist experience and tourism expenditure is therefore timely.

The research demonstrated strong support for the use of renewable energy in the three areas surveyed. Only 4.1% (n=8) of respondents in North Devon and 3.3% (n=3) of respondents in Cornwall were opposed to the use of renewable energy in the South West of England. In Mid-Wales 5.4% (n=5) of respondents were opposed to the use of renewable energy in Wales. Of those questioned in North Devon, 42.1% (n=82) said that they strongly support the use of renewable energy whilst 39.0% (n=76) said that they tend to support the use of renewable energy.

A total of 86.7% (n=170) of respondents in North Devon stated that the presence of a wind farm would neither encourage nor discourage them from visiting. A further 7.2% (n=14) of those surveyed said that a wind farm would either marginally encourage or strongly encourage them to visit the area whereas 6.1% (n=12) of those surveyed said that a wind farm would either marginally discourage or strongly discourage them from visiting. Respondents were asked Do you think wind farms can be tourist attractions? and just over half of those questioned in North Devon (51.0%, n=98) answered yes . A total of 43.8% (n=84) of North Devon respondents said that they did not think wind farms could be tourist attractions and a further 5.2% (n=10) stated that they did not know or had no opinion.

The majority of respondents (58.2%, n=114) in North Devon thought that wind farms have no overall impact on the tourist experience. A total of 18.4% (n=36) of those questioned thought that wind farms actually have a positive impact on the tourist experience while 14.8% (n=29) thought that wind farms have a negative impact on the tourist experience.

The figures related to impact on numbers of tourists indicate that there would be no overall financial loss in tourism-related earnings as a result of the wind farm development.

List of Figures (all presented as appendices)

List of Appendices

1. Introduction

1.1 Background to the research

This report contains the findings from a study of the impact of wind farms on visitor numbers and tourist experience. The research was undertaken on behalf of Devon Wind Power by the Geography Research Unit at the University of the West of England, Bristol.

Data gathering, conducted during May 2004, was carried out at three locations: North Devon, the Newquay area of Cornwall and Mid-Wales. A total of 379 day visitors and tourists were interviewed using an interviewer-administered questionnaire. The research was designed to provide evidence of the tourism-related impact of four existing wind farms in Cornwall and Mid-Wales and evidence of the potential impact of a proposed wind farm development in North Devon.

The proposed wind farm development, on a site at Fullabrook Down between Barnstaple and Ilfracombe, is for 20 turbines each with a capacity of 3MW. The development is intended to make a significant contribution towards the government s target of increasing renewable energy supplies from approximately three per cent of energy production at present to 15% by 2015. This will also make a contribution to meeting the legally-binding European target of reducing 1990 levels of greenhouse gas emissions by 12.5% by 2008-2012 and reducing carbon dioxide, the main greenhouse gas, by 20% relative to 1990 levels, by 2010 (Devon Wind Power, 2004).

It is important that this development contributes to rather than contradicts wider Regional, County and District strategies for economic growth, community development and environmental sustainability. Tourism is an important and expanding sector of the local economy in North Devon. The sustainable development of a tourism sector that contributes economically, environmentally and socially is a strategic priority at District, County and Regional levels. The impact on the tourism industry of the proposed wind farm development therefore requires consideration.

There has been limited previous research of the tourism-related impact of the development of wind farms. This report therefore seeks to contribute knowledge and understanding of the relationship between wind farms and tourism. In doing so, the report seeks to establish the impact on visitor numbers and the tourist experience of the proposed development.

1.2 Aims of the research

- To provide evidence and analysis of the attitudes of tourists towards renewable energy in general and wind energy in particular
- To provide evidence and analysis of the impact of existing wind farms in areas popular with tourists
- To provide evidence and analysis of the potential impact on visitor numbers of a wind farm in North Devon
- To provide evidence and analysis of the potential impact on the tourist experience of a wind farm in North Devon
- To provide evidence and analysis of the potential impact on the local tourism economy of a wind farm in North Devon
- To assess the views of tourists relating to the development of wind farms as tourist attractions

1.3 Research methodology

The main research instrument used to gather data was a questionnaire survey that was conducted face-to-face in the three locations of North Devon, Cornwall and Mid-Wales.[1] The surveys were conducted during weekends in May 2004 and were carried out by a team of specialist tourism staff. A total of 379 day visitors and tourists were interviewed with over half of the sample comprising interviewees from the main North Devon location. The survey team questioned tourists at a variety of sites in each of the three locations to increase the likelihood of representing different kinds of day visitors and tourists. It is not possible to achieve a truly representative sample of day visitors and tourists because, unlike a household survey where there is an established register of the entire population to be sampled, the total population or sampling frame of day visitors and tourists is not known.

A total of 196 questionnaire-based interviews were conducted in North Devon. Interviews were conducted at popular tourist sites and coastal towns and villages including Ilfracombe, Woolacombe, Braunton and Barnstaple. Interviews were also completed at a range of quieter sites inland that are popular with walkers and closer to the proposed site at Fullabrook.

A total of 90 interviews were completed in Cornwall at various locations within a 10km radius of two existing wind farms north-east of Newquay. The two wind farms were Bears Down, developed, owned and operated by National Wind Power and St Breock developed by EcoGen, owned by PowerGen Renewables and operated by Windfarm Management Services Ltd. The Bears Down site consists of 16 Bonus 600KW turbines with a combined capacity of 9.6 MW and has been operational since 2001. The height of the turbines at Bears Down is 57 metres from the base of the hub to the tip of the blade and this is approximately half the height of the turbines planned for Fullabrook. The St Breok site consists of 11 Bonus 450KW turbines and has been operational since 1994.

A total of 93 interviews were completed in Mid-Wales at various locations near two existing wind farms at Bryn Titli and Carno. The Bryn Titli site, developed, owned and operated by National Wind Power, is 7km north of Rhayader in Powys and consists of 22 Bonus 450KW turbines with a total capacity of 9.9MW. The site has been operational since 1994 and the turbines at Bryn Titli are slightly smaller than those at Bears Down having a base to tip of blade height of 48.5 metres. The Carno site, also developed, owned and operated by National Wind Power, is 18km west of Newton in Powys and consists of 56 Bonus 600KW turbines with a total capacity of 33.6MW. The site has been operational since 1996 and the turbines have a total height from base of hub to tip of blade of 53.5 metres.

In addition to the questionnaire survey, literature reviews of policy documents related to the development of both tourism and renewable energy were conducted and discussions with tourism and planning academics and officials were carried out to provide further insight into the relationship between wind farm developments and tourism.

1.4 Structure of the report

[1] The questionnaires for each of the three sites are included in Appendices 15-17.

The report is structured to present and evaluate the research data in relation to the aims outlined above. Chapter two provides a literature review of tourism-related strategies and policies developed by organisations in the South West Region, Devon County and North Devon District. Chapter three then outlines the main findings of the research. These are presented in three sub-sections dealing with visitor characteristics, visitor spending patterns and attitudes towards wind farms. Chapter four presents the analysis of the data in relation to the research aims by evaluating:

- the impact of existing wind farms in areas popular with tourists
- the impact of wind farms on visitor numbers
- the impact of wind farms on tourist experience
- the impact of wind farms on visitor and tourist expenditure
- the contribution of wind farms to the tourist experience

2. Tourism in North Devon: strategies and policies

2.1 The South West Region

2.1.1 South West Tourism

South West Tourism, the Regional Tourist Board for the South West of England, estimates that tourism is worth over £8 billion a year in direct and indirect expenditure to the economy of the South West and contributes approximately 10% of the region s GDP (South West Tourism, 2004: 1). Tourism is also estimated to employ over 300,000 people in 10,000 businesses within the region to meet the needs of more than 26 million visitors each year (South West Regional Development Agency, 2004; South West Tourism, 2004: 1).

The West Country Tourist Board, the predecessor to South West Tourism, identified the popularity of the region as the product of the strength and diversity of its natural and built resources (West Country Tourist Board, 1997). These resources were defined by the then Regional Tourist Board as: superb countryside, a natural environment of international importance, heritage, historic towns, seaside resorts, cities, arts, crafts and cultural activities, and sporting and recreational opportunities. Areas of Outstanding Natural Beauty cover approximately one-fifth of the region and the two National Parks of Dartmoor and Exmoor, both in the county of Devon, cover a further 1,631 square kilometres (South West Regional Development Agency, 2004). The region also has the country s longest national trail in the form of the South West Coast Path, it has over 60% of England s total Heritage Coast with the Dorset and East Devon coast declared a World Heritage Site in 2001 (South West Regional Assembly, 2002). Recently, Devon and Cornwall have witnessed increases in the number of visitors attracted by active recreation pursuits such as surfing and by quality local products such as food, gardens and art (Creative Copy, 2004).

The economic significance of tourism varies widely throughout the region. In Cornwall and the Isles of Scilly, for example, tourism contributes 21.0% of GDP whereas in Gloucestershire and Wiltshire tourism contributes less than 3.5% of GDP (West Country Tourist Board 1997). Tourist spending in Devon reflects the regional average at approximately 10% of GDP (West Country Tourist Board, 1997; South West Tourism, 2004). However, this spending is unevenly distributed throughout the county with tourist expenditure concentrated in the southern coastal resorts.

To ensure the sustainable growth of tourism within the region South West Tourism has recently turned its attention to developing a strategy that seeks to promote quality of experience over quantity of tourists. Such a strategy is designed to maximise the economic and social benefits from tourism whilst simultaneously minimising tourism s negative environmental impacts. In *Towards 2015: Shaping Tomorrow s Tourism*, South West Tourism emphasises that a sustainable approach towards tourism development in the region needs to address the needs of local communities, businesses and the environment in addition to focussing on tourists: Towards 2015 seeks to develop a truly sustainable industry that will bring wide reaching benefits to the region for local residents as well as our visitors (South West Tourism, 2004: 2).

This approach is seen to require a shift away from the previous emphasis on promoting tourist destinations to an emphasis on promoting the tourism product or experience. The tourism market is increasingly diversified and South West Tourism s new strategy recognises that benefits to the region s residents, businesses and environment are best attained by recognising the trends affecting the tourism market and by focussing on the more discerning high spending, low volume sector of the market. The trends influencing the shift away from choosing a destination to choosing an experience all emphasise the need to promote the diversity of destinations in the South West as offering a range of quality choices for discerning and higher spending tourists:

- Increased numbers of older travellers who will in general be healthier and have more money to spend
- Increased interest in holidays which promote good health and well-being
- A better educated customer resulting in more holidays in which arts, culture and history play a prominent role
- Continued increase in use of the Internet for finding out about and booking holidays
- Increasing concern for the environment resulting in more demand for destinations which preserve and promote their natural assets
- Increasing pressure on people s daily lives continuing the trend of more shorter holidays
- Growing importance of combining holidays with hobbies and interests as people seek expression and individuality
- Increasing discerning customers who expect and demand quality and value
- Increasing numbers of visitors looking for authentic experiences which provide a flavour of regional culture, traditions and history

(South West Tourism, 2004: 3)

2.1.2 Culture South West

Culture South West is the Regional Cultural Consortium for the South West and was created, together with the other 12 English consortia by the Department for Culture, Media and Sport. Culture South West works closely with local authorities, the Regional Development Agency, businesses and communities to provide strong leadership to people interested in the region s cultural development and works with partners to celebrate, champion and increase cultural opportunities across the South West (Culture South West, 2001: 8). Although the challenge of defining culture persists, Culture South West s celebrated Regional Cultural Strategy titled *In Search of Chunky Dunsters: A Cultural Strategy for the South West* views the term as encompassing all forms of the arts, the creative and media industries, heritage, leisure, recreation and sport. In other words, culture provides many of the activities and experiences that attract tourists to a particular destination and is an increasingly important consideration in the shift from destination marketing to activity, product or experience-based promotion.

Like South West Tourism, Culture South West has also emphasised the need to develop quality industries, activities and experiences that benefit local communities, businesses and the environment rather than simply focussing on attempts to increase volume of activity or number of participants. This approach towards tourism development is cognisant of the need to increase the economic impact of tourism within the region; an approach championed by the Regional Development Agency.

2.1.3 The South West Regional Development Agency (SWERDA)

The South West Regional Development Agency (SWERDA) was formed in 1999 to take a strategic overview of economic development and regeneration in the South West region.[2] Tourism forms one of the priority sectors identified by the Agency as being of crucial importance to the region s economy. Within the Agency, the Tourism Sector Group has taken responsibility for developing a demand-led strategy for the development of tourism within the region. This strategic approach, like that adopted by South West Tourism, has focussed on the development of a range of high quality tourism products for a diverse market of discerning consumers.

In addition to its primary focus on economic development, SWERDA also recognises the importance of sustainable development and environmental protection. In relation to tourism this is particularly important if the industry is not to have a negative impact on the very environmental resources upon which it depends. In working with South West Tourism to develop the ten year action plan *Towards 2015*, SWERDA emphasised the following aims for tourism development in the region:

- increase the proportion of GDP in the region from tourism and leisure
- provide opportuntities for new entrants and tourism-related businesses
- make tourism a year-round activity
- enhance the distinctive character and quality of local destinations

(South West Regional Development Agency, 2004)

2.1.4 Government Office South West (GOSW)

The Government Office South West is part of central government but plays a co-ordinating role in supporting the work of regional partners. It has close links with central government departments including any with a tourism and cultural-related remit such as the Department of Trade and Industry (DTI), the Department for Media, Culture and Sport (DCMS), the Department of Environment, Food and Rural Affairs (DEFRA), the Office of the Deputy Prime Minister (ODPM) and the Department for Transport (DfT).

The Government Office South West informs the region s Cultural Consortium, Culture South West, and helps to develop and implement the regional cultural strategy. GOSW also seeks to work with the SWERDA and others to ensure that creative industries and [the] tourism sector contribute to economic regeneration strategies and to promote the role of the cultural sector in the emerging role of the Regional Assembly (Government Office South West, 2004).

2.1.5 South West Regional Assembly (SWRA)

[2] The South West region is defined by the administrative boundaries used by the Government Office for the South West, the South West of England Regional Development Agency, the South West Regional Assembly and a number of other central government agencies and departments. The region includes the counties of Cornwall & The Isles of Scilly, Devon, Dorset, Somerset, Wiltshire and Gloucestershire plus the unitary authorities of Plymouth, Torbay, Bournemouth, Poole, North Somerset, Bath & North East Somerset, Bristol, South Gloucestershire and Swindon. The South West is the largest of the English regions in terms of geographical area and is home to nearly 5 million people (South West Regional Assembly, 2003: 8)

The South West Regional Assembly is made up of 117 members comprising councillors and representatives from a range of business, environmental and social organisations in the region (South West Regional Assembly, 2003: 9).

The Assembly was formed in 2000 following the 1997 Government White Paper Building Partnerships for Prosperity which proposed the creation of Regional Development Agencies and the 1998 Regional Development Agencies Act which invited chambers to apply for designation under the Act. These chambers, later to become the Regional Assemblies, were designed to monitor and scrutinise the work of the Regional Development Agencies.

The South West Regional Assembly therefore has a co-ordinating role at regional level and seeks to ensure that the work of the various regional agencies is developed in an integrated and strategic way. The Regional Assembly is responsible for preparing and monitoring Regional Planning Guidance and for scrutinising the work of the Regional Sustainability Development Framework and the Integrated Regional Strategy.

The Assembly is structured around the full Regional Assembly Board, a regional Executive Committee, a grouping of Assembly Leaders and seven Member Advisory Groups: Regional Spatial Strategy Group; Transport Group; Regional Futures Group; Scrutiny Panel; Waste, Energy and Minerals Group; Sustainable Communities Group and Environment Group. There is no specific group for tourism although tourism-related development forms a key component of the work of many of the Member Advisory Groups.

2.1.6 Sustainability South West (SSW) and Future Footprints

Sustainability South West was created as an independent organisation in 2000 from The South West Round Table for Sustainable Development. Sustainability South West was responsible for the development of The Regional Sustainable Development Framework for the South West, produced on behalf of the Government Office South West and launched in March 2001 (South West Regional Assembly, 2003).

In relation to tourism, Sustainability South West has been highly influential through its **future**footprints campaign which is designed to promote the benefits of sustainable development in the South West (Sustainability South West, 2003). The campaign is aimed at tourism providers and tourists and is designed to reduce the negative impacts of tourism in the region whilst supporting the development of tourism that seeks to enhance the positive economic, environmental and social impacts of tourism. Advice and information is given through a range of resources, publications and checklists for tourists and tourism providers.

2.2 Devon

2.2.1 Devon County Council

The County of Devon is the largest local authority area in the South West region and has a population of 712,000. It comprises eight district authorities and over 420 parish areas with 75% of parishes having a population of less than 1,000. Although the county has around 30 coastal and market towns it is largely rural and 50% of rural Devon has been given European Objective 2 status in recognition of the need to promote economic regeneration (Devon County Council, 2002).

Echoing the sentiments of South West Tourism, the Regional Development Agency and Culture South West, Devon County Council, through its Tourism Role and Action Programme, has emphasised that tourism is *Everybody s Business* (Devon County Council, 2003).

South West Tourism calculated that 28.8 million tourist nights were taken by visitors in 2001 and that during the year tourist spending in Devon totalled £1,181 million (South West Tourism, 2002). Devon County Council estimated that £381 million of this remained as income to the County (Devon County Council, 2003: 9).

These figures illustrate that Devon attracted almost 33.4% of tourists to the South West in 2001 and the average spending of tourists in Devon was £43.17 which was exactly the same as spending by tourists visiting Cornwall (South West Tourism, 2002). In recognition of the need to address South West Tourism s objectives of generating a sustainable tourism industry that prioritises quality over quantity, Devon County Council has identified the following challenges:

- Extending the season
- Developing tourism without traffic
- Minimising visitor impact
- Supporting the local economy
- Reducing environmental impacts
- Involving local communities

(Devon County Council, 2003: 11)

2.2.2 North Devon District Council

North Devon forms one of eight District Councils in the County of Devon.[3] The two Unitary Authorities of Torbay and Plymouth also fall within the County but are administered separately. Tourism in North Devon is focused on the diverse range of coastal towns and villages of Ilfracombe, Woolacombe, Combe Martin, Berrynarbour, Saunton and Croyde. The district is popular with walkers, surfers, caravanners and tourists taking short breaks.

The local authority s cultural strategy prioritises the four themes of:

- Improving access, inclusion in participation and enjoyment of cultural activity
- Improving the quality and relevance of cultural services
- Promoting regeneration, sustainability and healthy living
- Ensuring that cultural resources support lifelong learning

(North Devon District Council and Torridge District Council, 2002)

[3] North Devon, Torridge, West Devon, Mid Devon, East Devon, Exeter, Teignbridge and South Hams.

3. Findings

3.1 Visitor characteristics

3.1.1 Length of stay

The survey established that 9.2% (n=18) of the sample of visitors to North Devon were day visitors and 90.8% (n=177) were tourist visitors . Tourist visitors are classified as those who stay for at least one night in the area. The proportion of day visitors was slightly lower than that recorded in Cornwall, where 12.2% (n=11) of those surveyed were visiting the district for the day, and significantly lower than that recorded in Mid-Wales where 35.9% (n=33) of those surveyed were day visitors.

In both North Devon and Cornwall the majority of visitors stayed for two or three nights. Those staying for two or three nights comprised 73.6% (n=131) of those surveyed in North Devon and in 55.7% (n=44) of those surveyed in Cornwall.[4] Respondents staying for only one night comprised a small percentage of the sample in both North Devon and Cornwall at 3.4% (n=6) and 5.1% (n=4) respectively. These figures for short stay visitors contrast sharply with those of Mid-Wales where 27.1% (n=16) of those surveyed were day visitors and 47.5% (n=28) were staying for two or three nights. The difference in the number of day visitors is explained, in part, by the high number of cyclists/mountain bikers who were visiting Mid-Wales for the day.

Stays of between four and seven nights were undertaken by 20.2% (n=36) of those surveyed in North Devon, 29.1% (n=23) of those surveyed in Cornwall and 15.3% (n=9) of those surveyed in Mid-Wales. The longer stays undertaken in Cornwall can be explained, in part, as being influenced by the greater travel distances that tourists undertook to reach their destination. None of the North Devon respondents reported stays of between eight and 14 nights and only 2.8% (n=5) reported stays of more than 21 nights.

3.1.2 Travel companions and composition of tourist groups

The largest group of visitors to all three of the survey locations was that recoded as travelling with one friend, partner or relative. In North Devon this group comprised 41.8% (n=82) of those questioned and in Cornwall this group made up 35.2% (n=31) of the sample. Those travelling with more than one family member made up a further 29.1% (n=57) of visitors to North Devon and 28.4% of visitors to Cornwall.[5] The percentage of family groups surveyed in Mid-Wales was significantly lower at 17.6% (n=16) whereas those recoded as travelling on their own or with one friend, partner or relative was higher. A total of 43 people or 47.3% of visitors to Mid-Wales were travelling with one companion and a further 8.8% (n=8) were travelling alone. Again, the popularity of mountain biking in the area around the Mid-Wales wind farm sites is, in part, an explanation for the lower number of family groups.

3.1.3 Origin of visitors and frequency of visit

[4] The higher percentage of two-three night stays in North Devon is likely to have been influenced by the timing of the North Devon survey which was conducted over the first May bank holiday.
[5] The number of visitors travelling as part of family groups is likely to be higher during extended school holidays.

The survey found that the origin of visitors to North Devon and Cornwall was similar with 94.8% (n=181) of visitors to North Devon and 93.3% (n=83) of visitors to Cornwall coming from England. Overseas visitors made up 3.1% (n=6) of the respondents in North Devon with the remaining visitors coming from Wales, Scotland, Northern Ireland and Eire. Visitors from England had travelled from a variety of regions but the majority came from the South West, the South, the Midlands and Wales.

Of the three sites surveyed, North Devon had the highest frequency of repeat visitors with 39.3% (n=77) reporting that they visited several times a year, a further 6.1% (n=12) reporting monthly visits and a further 2.0% (n=4) reporting weekly visits. Those reporting visits to Cornwall and Mid-Wales several times a year were recorded as 33.3% (n=30) and 32.3% (n=30) respectively and those visiting monthly comprised 3.3% (n=3) of respondents in Cornwall and 3.2% (n=3) of respondents in Mid-Wales.

3.1.4 Accommodation patterns

There were significant differences in accommodation patterns between the three areas surveyed. Almost half (45.6%) of the tourist respondents in North Devon were staying in caravans or campsites (n=83). In Cornwall and Mid-Wales only 27.2% (n=22) and 36.7% (n=22) of respondents resided in caravans or campsites respectively. Hotel accommodation was most popular among respondents in Cornwall with 39.5% (n=32) staying in hotels compared with 19.8% (n=36) in North Devon and 15.0% (n=9) in Wales. Rented holiday cottages were most popular among respondents in North Devon with 17.0% (n=31) of tourist staying in this type of accommodation compared to only 4.9% (n=4) in Cornwall and 13.3% (n=8) in Mid-Wales. The type of accommodation used by North Devon respondents is illustrated in Figure 1 found in Appendix 1.

3.1.5 Main purpose of visit

The main purpose of visiting North Devon was for general leisure and relaxation (52% or n=102). Surfing was the second most popular reason for visiting with 13.8% (n=27) of visitors citing this activity as their main reason for visiting North Devon. Walking was also popular with 10.7% (n=21) giving this as the main reason for their visit and the same percentage, 10.7%, stated that visiting friends and relatives was the main reason for their visit. Figure 2, found in Appendix 2, illustrates the main purpose of visits to North Devon.

In addition to engaging in the activities outlined above, visitors to North Devon also participated in a range of other activities as outlined in Figure 3 below. Although none of the respondents cited shopping as the main purpose for their visit, 37.8% (n=74) stated that they had participated in shopping during their stay. Similarly, none of those questioned gave visiting historic buildings/sites of antiquity, visiting gardens or visiting museums and galleries as reasons for their visits yet 12.2% (n=24) visited historic buildings/sites of antiquity, 11.7% (n=23) visited gardens and 9.2% (n=18) visited museums and galleries. Figure 3, found in Appendix 3, illustrates other activities undertaken by North Devon respondents during their visit.

3.1.6 Socio-demographic characteristics of sample

The North Devon sample comprised 50% female and 50% male respondents. The surveys in Cornwall and Mid-Wales comprised more men than women with 60% men in Cornwall and 63% men in Mid-Wales. The over-representation of men in the Mid-Wales sample is, in part, explained by the large number of mountain bikers in the sample. One third of those surveyed in Mid-Wales stated that their main purpose in visiting the area was to take part in cycling and this activity is significantly more popular among men than women.

The most frequently cited age group of North Devon respondents was 35-44 years whereas in Cornwall, where the surveys were conducted near the popular surfing and partying resort of Newquay, the most frequently cited age range for respondents was 25-34. However, the age range of visitors to North Devon was fairly evenly spread with 16-25% of respondents in each of the following categories: 25-34 (20.1%), 35-44 (25.3%), 45-54 (21.1%), 55-64 (16.0%). A further 11.9% of those surveyed were over 65 and 5.7% were between the ages of 15 and 24.

The most frequently cited gross household earnings bracket for respondents in North Devon was £30,000-£49,000 (37.3%, n=63) compared with £17,500-£29,999 by respondents in Cornwall and Mid-Wales. Interestingly, the higher earnings of the North Devon tourists did not translate into higher spending. Tourists surveyed in North Devon spent less per day than those in Cornwall although more than those surveyed in Wales. However, statistics for 2001 from South West Tourism (2002) indicate that spending is almost identical in North Devon and Cornwall at just over £43.00 per person per night.

The most frequently cited highest level of educational qualification of those interviewed in North Devon was GCSE/O Level, CSE, NVQ1+2 (26.2%, n=50) and a further 15.2% had no formal qualifications. In contrast, the most frequently cited highest level of educational qualification of those interviewed in Cornwall was A levels or equivalent (29.9%, n=26) and, in Mid-Wales, it was an undergraduate degree (26.1%, n=24). However, the total percentage of each sample with either an undergraduate or postgraduate degree was 39.8% (n=76) in North Devon, 27.5% (n=24) in Cornwall and 43.5% (n=40) in Mid-Wales.

Of those who did express their voting intentions for the next general election more respondents in all three of the survey areas intended to vote Conservative than for any other party. The highest percentage of Labour and Green voters and the lowest percentage of Liberal Democrat and Other voters was found in North Devon.

3.2 Visitor spending patterns

3.2.1 Spending by day visitors

Day visitors were reluctant to reveal how much they had spent on their trip and how this spending might have impacted upon the local economy of North Devon District. Respondents surveyed in North Devon and who did answer these questions spent between £5.00 and £400.00 in the District during their visit. The average expenditure per day visitor was £36.59 compared with £44.09 in Cornwall and £18.69 in Mid-Wales.

3.2.2 Spending by tourist visitors

Figure 4, in Appendix 4, illustrates tourist spending in the North Devon area. Almost two-thirds of tourist visitors (62.7%, n=109) spent less than £200.00 although 25.6% (n=44) did spend between £201.00 and £400.00 and 8.7% (n=15) spent between £401.00 and £600.

3.3.3 Spending by product type or service

The three highest categories of spending were transport, accommodation and food/drink and this reflects findings of the South West Tourism survey of spending patterns (South West Tourism, 2002) Additional spending was related to trips, entrance fees to sites and events, sports and activities, clothing and souvenirs. Less was spent on accommodation in Devon than in Cornwall or Mid-Wales. Tourists to North Devon spent less than tourists to Cornwall although the mean expenditure category per person for tourists in all three locations was £101-£200. In Cornwall 48.1% (n=37) of those surveyed spent in excess of £200 whilst 36.7% (n=63) of those surveyed in North Devon spent in excess of £200.

3.3 Attitudes towards wind farms

3.3.1 The use of renewable energy

There was strong support for the use of renewable energy in the three areas surveyed. Only 4.1% (n=8) of respondents in North Devon and 3.3% (n=3) of respondents in Cornwall were opposed to the use of renewable energy in the South West of England. In Mid-Wales 5.4% (n=5) of respondents were opposed to the use of renewable energy in Wales.

Of those questioned in North Devon, 42.1% (n=82) said that they strongly support the use of renewable energy whilst a further 39.0% (n=76) said that they tend to support the use of renewable energy. Figure 5, in Appendix 5, illustrates Attitudes of North Devon day visitors and tourists towards renewable energy in the South West .

When asked if they thought that more wind farms should be constructed on-shore in the UK, 60.7% (n=119) of those questioned in North Devon answered yes compared with 72.2% (n=65) in Cornwall and 57% (n=53) in Wales. However, an average of 21.1% of respondents across the three areas surveyed said that they did not know or had no opinion in relation to the question. Figure 6, in Appendix 6, shows the attitudes of North Devon respondents to the development of on-shore wind farms.

There was stronger support for the creation of off-shore wind farms with 78.4% (n=152) of North Devon respondents, 75.6% (n=68) of respondents in Cornwall and 77.2% (n=71) of respondents in Mid-Wales stating that they thought more wind farms should be constructed off-shore around the UK. Figure 7, in Appendix 7, shows the attitudes of North Devon respondents to the development of off-shore wind farms.

3.3.2 The relationship between wind farms and tourism

The majority of respondents (58.2%, n=114) in North Devon thought that wind farms have no overall impact on the tourist experience. A total of 18.4% (n=36) of those questioned thought that wind farms actually have a positive impact on the tourist experience while 14.8% (n=29) thought that wind farms have a negative impact on the tourist experience. These figures are illustrated in the pie chart in Figure 8 (Appendix 8).

Those surveyed in North Devon in 2004 were asked Would the presence of a wind farm in North Devon encourage or discourage you from visiting the area? . A total of 86.7% (n=170) of respondents stated that the presence of a wind farm would neither encourage nor discourage them from visiting. A further 7.2% (n=14) of those surveyed said that a wind farm would either marginally encourage or strongly encourage them to visit the area whereas only 6.1% (n=12) of those surveyed said that the presence of a wind farm would either marginally discourage or strongly discourage them from visiting. These findings are illustrated in the Figure 9, found in Appendix 9.

3.3.3 Wind farms as tourist attractions

Respondents were asked Do you think wind farms can be tourist attractions? and just over half of those questioned in North Devon (51.0%, n=98) answered yes . A total of 43.8% (n=84) of North Devon respondents said that they did not think wind farms could be tourist attractions and a further 5.2% (n=10) stated that they did not know or had no opinion. Figure 10, found in Appendix 10, illustrates these views.

4. Analysis

4.1 Attitudes towards renewable energy developments in the South West

In a study conducted by MORI in March and April 2003 it was found that 61% of a sample of 585 Residents in the South West strongly supported the use of renewable energy in South West England. A further 28% stated that they tended to support the use of renewable energy in the region. These figures compare with 42.1% of day visitors and tourists from the 2004 North Devon survey expressing strong support and a further 39% expressing some support for the use of renewable energy in the South West. Thus a total of 89% of those surveyed by MORI expressed support for renewable energy in the South West and 81% of day visitors and tourists surveyed in North Devon in 2004 expressed support. This is 7% lower than the level of support found by MORI for UK residents and 8% lower than MORI s findings for residents in the South West only.

Analysis indicated that there was slightly stronger support among women day visitors and tourists in North Devon for renewable energy. Women outnumbered men in both of the categories where support for renewable energy was expressed and men outnumbered women in both of the categories where opposition for renewable energy was expressed. These findings contradict the findings of the MORI research which indicated that men were slightly more likely than women to express support for renewable energy. However, in Cornwall and Wales there was significantly more support for renewable energy from men than women with 98 men expressing support (only 3 expressed opposition) compared with 49 women expressing support (5 expressed opposition). Figure 11, in Appendix 11, illustrates Attitudes of North Devon day visitors and tourists to renewable energy (by gender) .

In all age categories a majority of respondents expressed support for the use of renewable energy. Analysis of the data indicated that younger respondents were most likely to express strong support for renewable energy. Strong support was the most frequent expression of respondents under 44 years old whereas a tendency to support was the most frequently expressed category of those aged between 45 and 64. Equal numbers of respondents aged over 65 years expressed strong support and a tendency to support. No young people under the age of 24 expressed any opposition to renewable energy (tend to oppose or strongly oppose) and no respondents over the age of 65 expressed strong opposition. Figure 12, in Appendix 12, illustrates these data in more detail: Attitudes of North Devon day visitors and tourists to renewable energy (by age) .

Over 80% of North Devon respondents in the gross household income brackets below £50,000 expressed support for renewable energy but for income brackets of £50,000-£99,999 and £100,000+ this figure dropped to 76% and 75% respectively. These data are illustrated in Figure 13, in Appendix 13 Attitudes of North Devon day visitors and tourists to renewable energy (by income) .

Those with no formal qualifications expressed the least support for renewable energy (69%). Those with A levels or equivalent and those educated to undergraduate degree level expressed strongest support with 91.7% and 85.1% of respondents expressing support for renewable energy respectively.
In both the North Devon sample and the total sample for the three areas surveyed Liberal Democrat voters were the most likely to express support for renewable energy (100%) and this finding concurs with the findings of the MORI survey. In North Devon Labour voters were the next most likely to express support (90.9%)

followed by Green voters (85.7%) and then Conservative voters (82.8%). In the three sample areas combined the ranking of likelihood to support renewable energy was slightly different from North Devon only with Liberal Democrats (92%), Greens (88.9%), Labour (87.5%) and Conservatives (74.1%).

4.2 The impact of existing wind farms in areas popular with tourists

The views of North Devon respondents regarding the impact of wind farms on the tourist experience closely reflected the overall results from the sample of visitors surveyed in Cornwall and Wales. In North Devon 58% (n=114) of respondents thought that a wind farm would have no overall impact. This compared with 66.7% (n=60) in Cornwall, 47.8% (n=44) in Mid-Wales and a total for the three locations of 57.7% who felt that a wind farm would have no impact on tourism. In Cornwall 18.9% of respondents felt that wind farms have a positive impact on tourism and this was mirrored in North Devon where 18.4% of respondents felt similarly.

Research by Young (1993) [6], carried out in relation to the development of a wind farm at Delabole on the north Cornwall coast, identified that local residents had serious concerns about both noise and visual impact of the wind farm prior to its construction. Young conducted questionnaire surveys with local residents in 1990 prior to the wind farm s construction and then again in 1992 following the development and commissioning of the wind farm.

In relation to noise, Young found that 42.3% of 326 residents surveyed in 1990 agreed with the statement wind turbines are a noise nuisance but by 1992 only 9.7% of 299 residents sampled agreed with this statement (Young 1993: 44 and 78).

In relation to visual impact, Young found that of 126 responses in 1990, 39% of respondents disagreed with the statement wind turbines spoil the scenery . By 1992, when the turbines had been installed, this percentage had increased to 60% of the 299 people surveyed (Young 1993: 43 and 78).

4.3 The impact of wind farms on visitor numbers

The survey of visitors to North Devon found that 93.9% (n=184) of those surveyed would not be discouraged form visiting the area if there was a wind farm. Of the 6.1% (n=12) of respondents who said they would be discouraged 4.1% (n=8) stated that they would be only marginally discouraged . In other words, only four respondents out of a sample of 196 stated that they would be strongly discouraged from visiting the area if there was a wind farm. These findings are similar to those gathered from the survey of day visitors and tourists to Cornwall where only 6.7% of visitors said they would be deterred by the presence of a wind farm.[7]

When asked Would the presence of a wind farm in North Devon encourage or discourage you from visiting the area? , the survey found a slight difference between the attitudes of day visitors and tourist visitors. Of the 7.2% of respondents (n=14)

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[6] This research was conducted for Exeter Enterprises Ltd. under contract as part of the Renewable Energy Research and Development Programme managed by the Energy Technology Support Unit of the Department of Trade and Industry.

[7] It should be emphasised that the surveys in Cornwall were carried out near the existing wind farms of Bears Down and St Breok but this question was asked to ensure that the same survey questions were asked at all three of the survey sites of North Devon, Mid-Wales and Cornwall.

who stated that the presence of a wind farm would either strongly or marginally encourage them to visit all were tourist visitors. Similarly, of the 6.1% of respondents (n=12) who stated that the presence of a wind farm would either strongly or marginally discourage them from visiting 5.6% (n=11) were tourist visitors. Figure 14, found in Appendix 14, illustrates the views of day visitors and tourist visitors in North Devon.

4.4 The impact of wind farms on the tourist experience

The survey findings illustrated that a total of 16.9% (n=64) of respondents across the three survey locations felt that wind farms had a negative impact on tourism. A slightly lower percentage of respondents in North Devon (14.8%) felt that wind farms have a negative impact on the tourism experience. This percentage was outweighed in North Devon by those who thought that wind farms had a positive impact on tourism (18.4%). Overall, 16.7% of respondents from the three sites thought wind farms had a positive impact on tourism.

4.5 The impact of wind farms on visitor and tourist expenditure

The study sought to determine the potential economic impact of a wind farm development in North Devon. This could be achieved by assessing the potential lost expenditure of those tourists who said they would be discouraged from visiting the area if a wind farm was developed. As only 2% (n=4) of those surveyed in North Devon said that they would be strongly discouraged from visiting the area if a wind farm was developed the potential loss to the local economy would be insignificant. Even if it is assumed that the 4.1% of respondents who stated that they would be marginally discouraged from visiting choose not to visit in the future then this total of 6.1% of lost visitors is still less than the 7.2% of respondents who stated that the presence of a wind farm would either marginally or strongly encourage them to visit.

In other words, for the four respondents who said they would be strongly discouraged from visiting there were five who said they would be strongly encouraged to visit. For the eight respondents who said they would be marginally discouraged from visiting there were nine who said they would be marginally encouraged .

It is therefore inappropriate to predict that the development of a wind farm in North Devon would have a negative economic impact related to tourist expenditure.

4.6 The contribution of wind farms to the tourist experience

It has already been highlighted above that 7.2% of respondents in North Devon stated that they would be encouraged to visit if there was a wind farm in the area. For those visitors the wind farm itself was seen to add to the tourist experience but it is also worth exploring the possibility that a wind farm could act as a visitor attraction through the provision of a visitor centre or simply through what some respondents regarded as the aesthetic beauty of the turbines in the landscape. Although the Fullabrook area does not have suitable access to accommodate large numbers of visitors it is undoubtedly the case that the growing public interest in sustainable development, renewable energy and rural regeneration is contributing to a growth in tourists with interests in sustainability in its broadest sense.

5. Conclusions

The tourism-related priorities of South West Tourism, Culture South West, the South West Regional Development Agency, the Government Office South West, the South West Regional Assembly, Sustainability South West, Future Footprints and local authorities in the South West all focus on the need to develop tourism products and experiences that meet sustainability criteria in relation to the environment, the economy and communities.

The findings of this research study indicate that the development of a wind farm at Fullabrook Down in North Devon is likely to contribute to the sustainable development agenda of the South West Region, Devon County and North Devon District. In particular, the findings of the research indicate that, following the construction of a wind farm, it is likely that there will be:

1. ***No overall negative impact on visitor numbers***
   The survey of visitors to North Devon found that 93.9% (n=184) of those surveyed would not be discouraged form visiting the area if there was a wind farm. Only four respondents (2%) from a sample of 196 stated that they would be strongly discouraged from visiting the area if there was a wind farm. Eight respondents or 4.1% stated that they would be marginally discouraged from visiting. Although 6.1% stated that they would be marginally or strongly discouraged from visiting, a higher percentage (7.2%) stated that they would be more encouraged to visit if there was a wind farm.

2. ***No overall detrimental impact on the tourist experience***
   The majority of respondents (58.2%, n=114) in North Devon thought that wind farms have no overall impact on the tourist experience. A total of 18.4% (n=36) of those questioned thought that wind farms actually have a positive impact on the tourist experience while only 14.8% (n=29) thought that wind farms have a negative impact on the tourist experience.

3. ***No overall decline in tourism expenditure.***
   The figures related to impact on numbers of tourists indicate that there would be no overall financial loss in tourism-related earnings as a result of the wind farm development.

In addition, the majority of respondents welcomed the development of renewable energy sources and the majority also felt that wind farms could be tourist attractions in their own right.

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Appendices

1. Figure 1 Type of accommodation used by North Devon tourists
2. Figure 2 Main purpose of visit to North Devon
3. Figure 3 Other activities undertaken by North Devon respondents during their visit
4. Figure 4 North Devon tourist expenditure
5. Figure 5 Attitudes of North Devon day visitors and tourists towards renewable energy
6. Figure 6 Attitudes of North Devon day visitors and tourists towards on-shore wind farms
7. Figure 7 Attitudes of North Devon day visitors and tourists towards off-shore wind farms
8. Figure 8 The impact of wind farms on the tourist experience
9. Figure 9 The effect of a wind farm on visitor numbers
10. Figure 10 Wind farms as tourist attractions
11. Figure 11 Attitude of North Devon day visitors and tourists to renewable energy (by gender)
12. Figure 12 Attitude of North Devon day visitors and tourists to renewable energy (by age)
13. Figure 13 Attitude of North Devon day visitors and tourists to renewable energy (by income)
14. Figure 14 The impact of a wind farm on day visitors and tourist visitors in North Devon.

21. Questionnaire, North Devon
22. Questionnaire, Cornwall
23. Questionnaire, Mid-Wales
24. Data set: individual questions by area/total
25. Data set: cross tabulations
26. Data set: additional textual responses