

Wind farm impacts study

Key information

The Scottish Government has asked ClimateXChange to manage a research project looking at whether the impacts predicted by developers in documentation submitted with their planning applications are consistent with the impacts experienced once the wind farm is operational. The research will use two sources of information:

- how local residents experience and react to visual, noise and shadow-flicker impacts; and
- how the predicted impacts at the planning stage match the impacts when the wind farm is operating, as assessed by professional consultants.

The report is due in winter 2014/15. It will inform the Scottish Government's decisions on changes to planning guidelines and good practice on minimising and mitigating the impacts of wind farms on local residents.

The research is overseen by a steering group with representatives from local and national government planning interests, and interest groups representing both those living near wind farms and wind farm developers and operators. This steering group is ensuring a balanced approach in the research and analysis.

1. What is the research project?

- A research project to review the noise, visual and shadow flicker impacts at ten wind farms across Scotland.
- Comparing experienced and actual noise, visual and shadow impacts of operational wind farms to the impacts predicted in Environmental Statements or other documentation submitted with the planning application.
- Funded by the Scottish Government.
- Managed by ClimateXChange – Scotland's Centre of Expertise on Climate Change.
- Governed by a steering group with representatives from various local and national interest groups representing both those living near wind farms and wind farm developers and operators, including Scotland Against Spin and Scottish Renewables, and representatives from local and national government planning interests. This steering group is ensuring a balanced approach in the research and analysis.
- The study will contribute evidence in relation to the guidance to wind farm developers on how they should measure the potential impacts of their wind farms, and how they should communicate this to planning authorities and those likely to be affected. It will provide evidence to the Scottish Government on whether the guidelines on the approval process for wind farms are sufficient to safeguard against unacceptable visual, shadow flicker and noise impacts on local residents, and help inform any future decisions on changes to planning guidelines and good practice on managing the impacts of wind farms on local residents.

The wind farms included in the study are:

Site	Local Authority
Dalswinton	Dumfries and Galloway
Neilston	East Renfrewshire
Dunfermline	Fife
Little Raith	Fife
Achany	Highland
Baillie	Highland
Griffin	Perth and Kinross
Drone Hil	Scottish Borders
Hadyard Hill	South Ayrshire
West Knock Farm	Aberdeenshire

Residents living near these wind farms will be invited to participate in a survey to obtain their views on the noise, visual and shadow flicker impacts they have experienced. Researchers will also do field work to measure the various impacts. See the selection criteria below (section 4).

2. Why is the research important?

Wind farms are major infrastructure projects that go through a rigorous planning process. However, there has never been a multi-site study to look at the match between the impacts of a wind farm as assessed in the Environmental Statement or supporting information provided as part of the planning process and the actual impacts once the wind farm is operational.

3. Survey approach

The contractors, see below, will begin with a review of the information submitted by wind farm developers in support of their application. They will analyse how accurately that information reflects the impacts in terms of noise, visibility and shadow flicker from the wind farm when in operation. The study recognises that people's experience of impacts can vary due to a range of factors, so it is important that it considers how local people interpret the noise, visual and shadow flicker/throw impacts that they feel. Local residents are being asked to take part in a survey to share their experience in terms of noise, visual and shadow flicker impacts from the wind farm. As well as being asked about their experiences of the wind farms' visual, noise and shadow flicker impacts, residents will also be asked about their engagement with the planning process and the wind farm developer or operator before the build. Based on the results of the survey, additional analysis will be done on the impacts.

4. How has the research team chosen the wind farms and the local people to take part in the study?

The wind farms selected for study were chosen to provide a spread of wind farm sizes, wind turbine heights, landscape character, wind farm age, and geographical location across Scotland. The Project Steering Group made the final selection from a short list of possible case study wind farms that the consultants developed. The short list was itself based upon a longer list of all wind farms developments in Scotland since 2000 that have residential properties close by, and took into account information about any complaints that had been received by the relevant local authority or the Scottish Government, about noise, shadow flicker or visual impacts.

Although selected for this study, none of the ten wind farm sites necessarily have any negative impacts or impacts which differ from those identified in Environmental Statements.

All residents who live within 0.5km of each of the wind farm sites under study are being invited to take part in the survey. Large proportions of those living slightly further away are also being

surveyed. The consultants and Project Steering Group have taken care to ensure the sampling process for the survey is robust from a research point of view, and that it captures those households where impacts are likely to be felt. The survey is being sent out by post and there is an option to complete the survey on-line.

5. Project Reporting Timescales

The Project Steering Group expects the report to be completed in winter 2014/15. The residents' survey will be sent out in June, and the results from the survey will be analysed over the summer. Further analysis and measurement of impacts will also take place over the summer months and into the autumn.

The final report will be made available on the ClimateXChange website at www.climatexchange.org.uk.

6. Organisations involved in the Project Steering Group

ClimateXChange

ClimateXChange is Scotland's centre of expertise on climate change. It provides a research, advice and analysis service to Scottish Government policy teams and associated public agencies.

www.climatexchange.org.uk

Scottish Government

Departments within the Scottish Government are sponsoring this work:

- Onshore Renewables and Community Energy team which leads on the Renewables Routemap for Scotland <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/RoutemapUpdate2013> ;
- the team that deals with consents for wind farms under Section 36 of the Electricity Act 1989 <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents> ; and,
- Planning and Architecture Division – representing onshore wind land use planning policy interests

Heads of Planning Scotland (HoPS)

Heads of Planning Scotland (HoPS) is the representative organisation for senior planning officers from Scotland's local authorities, national park authorities and strategic development planning authorities.

<http://hopscotland.org.uk/>

Scotland Against Spin

Scotland Against Spin is the independent alliance campaigning for the reform of the Scottish Government's wind energy policy.

<http://scotlandagainstspin.org/>

Scottish Renewables

Scottish Renewables is a member organisation dedicated to strengthening business relationships and committed to securing the best possible environment for the growth of renewable energy in Scotland.

<http://www.scottishrenewables.com/about-us/>

Scottish Natural Heritage (SNH)

SNH's vision is for a strategic approach in which renewable energy development is guided towards the locations and the technologies most easily accommodated within Scotland's landscapes and habitats without adverse impact. SNH are a statutory consultee for all wind farm developments in Scotland in terms of their impact on the natural heritage.

<http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/>

RenewableUK

RenewableUK is the UK's leading renewable energy trade association, supporting the development of UK wind & marine energy.

<http://www.renewableuk.com/>

Independent campaigners

Represented on the Project Steering Group by Mr Ian Kelly.

7. Contractors

SLR Consulting

SLR is a leading international environmental consultancy that specialises in the energy, mining & minerals, waste management, planning & development, infrastructure and industrial sectors.

<http://www.slrconsulting.com/>

Hoare Lea Acoustics

Hoare Lea Acoustics is an independent acoustic consultancy and part of Consulting Engineers, Hoare Lea. HLA provide acoustic services for numerous types of development including wind farms, infrastructure, residential, commercial and industrial sites.

<http://www.hoareleaacoustics.com/>