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Spatial Economics Research Centre

Thursday, 6 June 2013

Windfarms and House Prices

[by Dr Steve Gibbons]

News this morning suggests that communities near new wind-farm developments could be in for some form of compensation, through lower electricity prices or other payment schemes. The BBC reports that the compensation could be worth as much as £100,000 per community <http://www.bbc.co.uk/news/business-22791815>. This is probably welcome news for residents potentially affected by wind-farm developments, although *provisional* findings from on-going research suggests that this level of compensation may not cover the costs involved, in terms of environmental, health and other impacts. I find that an operational wind farm reduces housing prices by around 7% up to 5km from the wind farm site. Some rough calculations based on these estimates suggest that the implied social costs on the local community (within 5km) amounts to about £80 million per operational wind farm, or about £500 per household per year.

Extended (user friendly) abstract follows below

Renewable energy technology has potential global environmental benefits in terms of reduced CO₂ emissions and slower depletion of natural energy resources. However, like most power generation and transmission infrastructure, the plant, access services and transmission equipment associated with renewable electricity generation may involve environmental costs. This is particularly so in the case of wind turbine developments, where the sites that are optimal in terms of energy efficiency are typically in rural, coastal and wilderness locations that offer many natural environmental amenities. These natural amenities include the aesthetic appeal of landscape, outdoor recreational opportunities and the existence values of wilderness habitats. In addition, for residents local to operational wind turbines have reported health effects related to noise and visual disturbances.

The UK, like other areas in Europe and parts of the US has seen a rapid expansion in the number of these wind turbine developments since the mid 1990s. Although these 'wind farms' can offer various local community benefits, including shared ownership schemes and the rents to land owners, in the UK, and elsewhere in Europe, wind farm developments have faced significant opposition from local residents and other stakeholders with interests in environmental preservation. This opposition suggests that the environmental costs may be important. This is a controversial issue, given that opinion polls and other surveys generally indicate majority support of around 70% for green energy, including wind farms, (e.g. Eurobarometer 2007). This contradiction has led to accusations of 'nimbysism' (not in my backyard-ism), on the assumption that it is the same people opposing wind farm developments in practice as supporting them in principle. There is perhaps less of a contradiction when it is considered that the development of wind farms in rural locations potentially represents a transfer from residents in these communities and users of natural amenities (in the form of loss of amenities) to the majority of the population who are urban residents (in the form of energy).

This research provides quantitative evidence on the local benefits and costs of wind farm developments. In the tradition of studies in environmental, public and urban economics, housing costs are used to reveal local preferences for wind farm development in England and Wales. This is feasible in England and Wales because wind farms are increasingly encroaching on rural, semi-rural and even urban residential areas in terms of their proximity and visibility, so the context provides a large sample of housing sales that potentially affected (around 15% of residential postcodes are within 5 km of operational or proposed wind farm developments). Estimation is based on quasi experimental research designs that compare price changes in places close to wind farms when wind farms become operational with various comparator groups. These comparator groups include: places close to wind farms that became operational in the past, or where they will become operational in the future; places close to wind farms sites that were refused planning permission; places close to wind farms that are planned or proposed but are not yet operational; and places close to where wind farms became operational but where the turbines are hidden by the terrain.

All these comparisons suggest that wind farm developments reduce local house prices. This price reduction is around 7% for housing within 5km of a wind farm. The impact increases to 9% within 1km and falls to 3% at 10-15km which is at the limit of likely visibility. At 5km, half of this impact can be attributed to visibility and the other half to the general proximity to the site. If we take these figures seriously as estimates of the mean willingness to pay to avoid wind farms in communities exposed to their development, the implied costs are very large. Aggregating over households within 5km of current and proposed wind farm sites alone leads to an implied social cost of around £34 billion.

Posted by Prof Henry G. Overman on [Thursday, June 06, 2013](#)

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2 comments:



Trác Chateau said...

Does anyone know where I can access this study for academic purposes? It makes some bold claims which I see some newspapers have picked up on, but I can't see any analysis or evidence and so it would be good to read the actual paper.

27 January 2014 at 10:01



Steve Gibbons said...

The research findings have changed a bit since this blog was written. You can see a draft paper on my website <http://personal.lse.ac.uk/gibbons/papers/windfarms%20and%20Houseprices%20November%202013%20v5.pdf>.

27 January 2014 at 11:09

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