

North Dublin Wind Turbine Tour, 6th September 2014

Following on from the Ballynagran public consultation meeting held in July 2014, Ballynagran Energy Plus organized a site visit for interested residents to view a single wind turbine in a rural setting.

Country Crest, a successful agri-food business kindly agreed to host a visit to their wind turbine in Lusk, Co. Dublin on Saturday, 6th September 2014.

A bright, sunny and thankfully, windy morning allowed residents to view a 55 meter tall wind turbine at work. A member of the Country Crest team was on hand to answer questions about the turbine's specification, power production and issues about shadow flicker and noise were also addressed. The site visit allowed residents the opportunity to observe and listen to a similar sized turbine that is proposed for the Ballynagran community.

Ten facts about the wind turbine at Country Crest which has been in place since March 2009



1. Total height to blade tip is 80 meters.
2. Height to blade hub is 55 meters.
3. Blade rotor diameter is 48 meters.
4. Weight of the generator unit alone is 24 tons. This is in the hub of the turbine.
5. There are 28 lorry loads of concrete and 17 tons of steel in the foundations.
6. The transformer is in the base of the turbine.
7. Annual power production is minimum 1.8million KWh equivalent to the electrical power needs of approx 500 average Irish households.
8. The total cost of the turbine is approximately €1.5 million.
9. The wind turbine operates fully automatically and will begin to produce power at wind speeds exceeding 3 m/s (6knots) – basically a light breeze.
10. The wind turbine will first of all offset the local power demand at Country Crest whenever sufficient winds speeds are available. Any excess power produced will be exported to the national grid.

All in all, this was a very worthwhile visit for all parties who visited and we hope it went some way to answering questions and queries residents may have had.

The Ballynagran energy sub-committee would like to thank Miriam Byrne of Country Crest for facilitating our visit. For further information and feedback, please visit www.ballynagran.com

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Ballynagran Energy Plus Wind Turbine Project

It is proposed that this project will be developed by the community for the benefit of the community. We want to ensure that households in the basin area, who can see, hear or smell the dump will benefit from the profits generated by this and other projects, which will improve our personal living conditions and the larger community. Otherwise all the community project funding will go outside our local area.

Questions and Answers

How many homes will benefit from the community wind turbine?

A local committee will have to be established to decide how to allocate the profits generated by a turbine. We would propose a community co-operative with shares given to basin residents. There are about 130 households in the small grant scheme area (the Basin) of which 100 are owner occupied. About 77 households claim the small grant scheme.

If you have a view as to how profits should be allocated it would be very helpful to share this with the committee - all suggestions are welcome and will help to give options for how it should work.

What turbine is proposed for Ballynagran?

It is proposed to erect a reconditioned turbine that is fully mechanically rebuilt - so is in effect like new. The lifespan of a wind turbine is estimated at 20 years or greater. A 500kw turbine is proposed for the site as a turbine of this size is not required to go through the ESB "Gate" process for connection. This greatly reduces costs and time to installation. (12 - 24 months Vs 10+ years).

Are wind turbines noisy?

Advances in technology mean mechanical noise from turbines is dramatically reduced to acceptable levels - with the main sound being the aerodynamic swish of the blades passing the tower.

Noise levels compared to a ten turbine wind farm Activity	Sound pressure level (dBA*)
Background noise in rural area at night	20-40
Quiet bedroom	35
Wind farm (10 turbines) at 350m	35-45
Car travelling at 64kph at 100m	55
Noise in a busy office	60
Jet aircraft at 250m	105

*Source: www.iwea.com

Please note that we are proposing one turbine and it will have a minimum separation distance of 500 metres to any dwelling. It is also proposed to conduct a noise assessment as part of our site suitability works.

Are wind turbines inefficient and only work 30% of the time?

A modern wind turbine produces electricity 70-85% of the time generating efficient output depending on the wind speed*. The proposed 500kw turbine will generate enough to meet the electricity demand of up to 250 homes over the course of a year. This electricity can be sold to the national grid for the benefit of the Ballynagran Basin Community. *Source: www.iwea.com

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What is the importance of average wind speed?

The stronger the wind source the more electricity the turbine will generate. In accordance with Wicklow County Council's Wind Energy Strategy guidelines, the proposed site is located in an area with favourable mean wind speed above 7.5m/s. [Source: Wicklow County Wind Energy Strategy, Map No. 02](#)

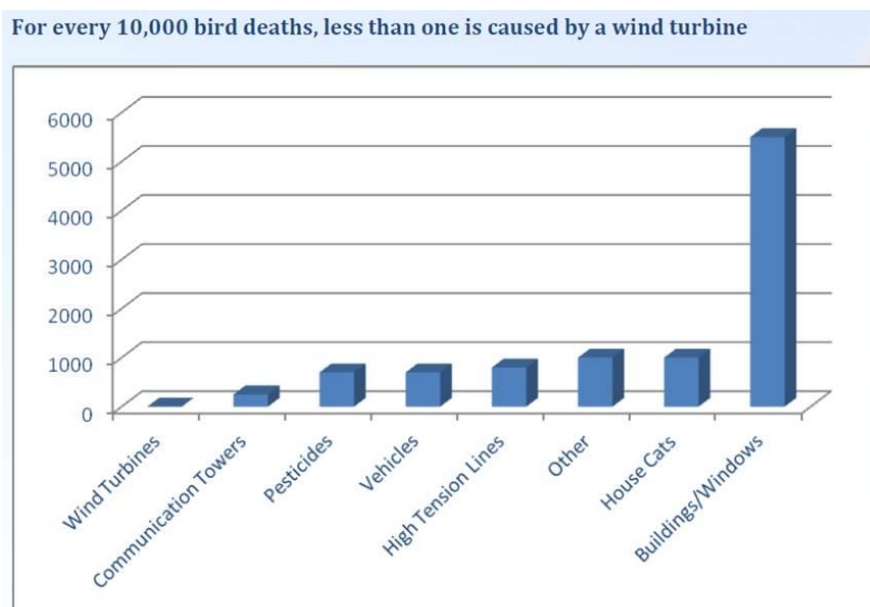
A met mast is going to be installed at the proposed site and this will measure wind speed data from which we can determine the average wind speed and give us additional important data. We can thus determine in advance the suitability of the site. The data will also be important to developing the business case.

What is shadow flicker?

The rotating blades cause what is called 'flicker' in the shade of the sun. However, current wind farm software is available to determine the sun's path and a wind turbine can be pre-programmed to switch off during the periods when it is known that 'flicker' can occur. Again, it should be noted that we are proposing one turbine and it will have a minimum separation distance of 500 metres to any dwelling.

What is the impact on local wildlife?

As part of our planning application requirements, all necessary ecological reports will be prepared as required by the local authority to determine minimal impact on the local natural environment. It should be noted that the biggest danger to our local environment at present is global warming. [Source: www.iwea.com](http://www.iwea.com)



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While a certain amount of trees will have to be felled to clear the site, a similar number of new trees will be planted elsewhere to off-set this.

Can other turbines be built on the proposed site?

Due to the distances to residential houses on all sides, the proposed site is very restricted allowing a very small footprint on which one turbine can be placed. We are applying for permission for one 500kw as this greatly reduce costs and time to installation. (12 - 24 months Vs 10+ years).

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