

# Briefing

## Making your case for Wind Power

These messages are for use by groups or individuals working in support of wind farm applications. They are intended for use in letters to support planning applications, letters to local papers and leaflets or newsletter/website articles.

We want to see more visible support for wind power in the UK. Use these positive messages to combat the misinformation put out by the anti-wind lobby. Obviously each wind farm application must be looked at individually - for guidance on whether to support a project and how to do so, please see our briefing <sup>1</sup>

Much of the information is sourced from the Centre for Sustainable Energy's Common Concerns about Wind Power.<sup>2</sup> We have a 3 page [summary of this report](#). Other sources are referenced in the notes.

## **Why wind power is necessary**

In the UK around a third of our emissions of carbon dioxide (CO<sub>2</sub>) come from power stations which are producing electricity. Other emissions from these stations pollute the air we breathe and contribute to acid rain which threatens wildlife. Our demand for energy is higher than ever. Even if we make massive improvements in energy efficiency, it's vital that we find cheap and clean ways of generating electricity to replace the polluting forms of energy we currently use.

The government and many organisations and individuals support wind power because it is the most economically viable source of renewable electricity in the UK. It will play a big role in delivering on our targets to achieve 15% of our energy needs from renewable sources by 2020. Government National Policy on Energy states:

*“Onshore wind is the most well-established and currently the most economically viable source of renewable electricity available for future large-scale deployment in the UK*

*As part of the UK's need to diversify and decarbonise electricity generation, the Government is committed to increasing dramatically the amount of renewable generation capacity (see Section 3.4). In the short to medium term, much of this new capacity is likely to be onshore and offshore wind.”<sup>3</sup>*

The Government's National Policy on Renewable Energy adds:

*“An increase in renewable electricity is essential to enable the UK to meet its commitments under the EU Renewable Energy Directive<sup>24</sup>. It will also help improve our energy security by reducing our dependence on imported fossil fuels, decrease greenhouse gas emissions and provide economic opportunities.”<sup>4</sup>*

Wind turbines save substantial amounts of carbon emissions. They produce less emissions over their lifetime than almost any other form of electricity generation.<sup>5</sup>

Wind provides greater energy security than fossil fuels and the cost of electricity from wind is likely to fall over the next few years and of course the wind itself is free.

The urgent need to respond to climate change means that we need to use as many renewable resources as quickly as possible, including onshore and offshore wind, solar and marine power. A mix of different energy sources is the way forward but we recognize, along with the Government that wind is the best developed of the range of renewable energy technologies.

## **They are efficient and effective at cutting carbon**

Turbines produce far more energy than is consumed in their manufacture. On average a wind farm will have generated sufficient energy in just half a year to account for all the energy that is required in its construction and operation.

The average wind farm is expected to generate at least 20–25 times the energy required in its manufacture and installation over its lifetime. This compares well with other forms of power generation systems.<sup>6</sup>

Opponents of wind power often say that wind energy is inefficient but this is based on a misunderstanding of the technology. No turbine will work at its most efficient all of the time. Over the course of a year turbines will generate about 27% of their theoretical maximum output.<sup>7</sup> This is due to the nature of the variable supply of wind but it does not mean they are inefficient.

Wind farms actually generate electricity around 80–85% of the time, and power is converted to electricity very efficiently, with none of the heat waste inherent in fossil fuel plants.<sup>8</sup>

In 2011 onshore wind farms produced enough electricity for the average needs of nearly 2.4 million households.<sup>9</sup>

### Providing clean green electricity in your area

*Use information on your particular scheme about how much electricity it could provide or how much carbon dioxide emissions it can save. This can usually be found in the developer's materials. Be careful to use the wording they use such as "could" and "estimated" to ensure you are not misleading in what you write.*

For example:

The application to build 5 turbines at Shepham Lane, Polegate, East Sussex could save up to 14,000 tonnes of carbon dioxide a year.

The proposed Rampion offshore wind farm, off the coast of Sussex is estimated to generate sufficient electricity to meet the needs of the equivalent of around 450,000 average UK households.<sup>10</sup> That's over two-thirds of the homes in Sussex.

### Green taxes are not putting up electricity bills

Some point the finger for bill rises at the costs of investing in clean energy and insulating homes. But that's not right. These costs are small compared to the overall bill (approximately 5-7 per cent, depending how you measure it), and are simply not to blame for bills going up.<sup>11</sup>

Instead, the real reason is the rising price of **fossil fuels**. Approximately 75 per cent of the UK's electricity generation currently comes from coal and gas, so rises in their costs have a big impact on what consumers pay. In particular, **gas** is the main driver of cost rises – it's used for the majority of our heating and almost half of our electricity. We buy more than half of our gas from abroad, because our domestic production of gas is declining steadily. Even moderate estimates say that the price of gas is expected to continue to rise. So, the longer we stay hooked on fossil fuels, the more bills will rise.

The Committee on Climate Change dismissed the idea that so-called ‘green taxes’ pushes up bills:

*“Over 80 per cent of the increase was unrelated to low-carbon measures... our analysis disproves ... that energy bills are currently high due to costs of policies to achieve a low-carbon economy. This is not the case.”<sup>12</sup>*

Evidence shows that wind energy is cost competitive with conventional electricity generation. A Department of Energy and Climate Change report in 2010 showed that estimates for onshore wind are 9.4p/kWh. Electricity from nuclear power is estimated to be 9.9p/kWh and electricity from gas 8.0p/kWh. Offshore wind is estimated to be more expensive, with costs of 15.7–18.6p/kWh, although this is expected to fall to 11.0–12.5p/kWh for projects commissioned from 2020.<sup>13</sup>

Given that wind is a free resource the relative price of wind energy is likely to become even cheaper.

The Big Six Energy companies are responsible for rising electricity prices. At a time of rising wholesale energy costs, energy companies are increasing their profits. The combined pre-tax profits of the Big Six have increased from £6.6bn in 2008 to £8.55bn in 2010 – an increase of almost a third. Ofgem, the energy regulator, has said that although fossil fuel price rises are clearly the driving factor pushing up bills, *on top of this* the Big Six are increasing their margins on bills.<sup>14</sup>

### **Subsidies to wind are sensible**

Evidence shows that subsidies for wind power cost householders less than £5.00 a year whereas the rising cost of gas contributed to a £120 average increase in bills in 2010.<sup>15</sup>

The Government’s investment in wind power is a positive economic response to the problems with fossil fuels. It reduces our emissions at the same time as weaning us off imports of gas and oil - giving us greater energy security. Renewables Obligation Certificates enable the UK to gain a bigger proportion of electricity from renewable sources which is surely good sense both environmentally and economically.

A different kind of subsidy is found in dealing with the impacts of fossil fuel and nuclear generation. The costs of dealing with natural resource depletion, the long-term effects of toxic chemicals and heavy metals on ecosystems, the prolonged impacts of acid rain and effects of an increasingly unstable climate are not accounted for. This hidden subsidy is known as the “external costs”, because they are not paid for in the financial price of the energy produced. As true cost accounting improves, the relative costs of fossil fuels compared to renewables will increase.

### **Wind is a better option than Nuclear**

Nuclear power’s status as a low-carbon source of electricity is doubtful: while it compares favourably to fossil fuels like coal, extracting and processing uranium,

plant construction and plant decommissioning create a carbon footprint that is significantly greater than renewable sources.

The cost of electricity per unit generated by nuclear power is currently no better than onshore wind power, without taking into account the future costs of cleaning up when a plant is finally decommissioned.<sup>16</sup>

Nuclear power doesn't deliver – it is never on time, always over budget, relies on massive public subsidies to happen and takes 10-15 years to get up and running.<sup>17</sup>

### **When the wind blows: wind variability isn't a problem**

Opponents of wind power argue that as the wind doesn't blow all the time, a lot of back up is needed from conventional power stations. The argument is that this then defeats the object of reducing emissions and is costly.

Backup electricity capacity already exists to cope with interruptions to supply, such as when power stations shut down for various reasons. The national grid already manages the highs and lows of customers' demands, which vary according to popular TV programmes, the weather and patterns of work. Evidence shows that fluctuations in wind power can be managed easily and at a low cost.<sup>18</sup>

Variations in wind are considerably less than fluctuations in consumer demand for electricity which varies on an hourly and daily basis. And often wind patterns are predictable, thus making it a manageable issue.

Energy analyst, David Millborrow's report assesses a number of studies on wind variability and states:

*"This issue tends to attract more interest than it deserves"*

*"Thermal plant breakdowns generally pose more of a threat to the stability of electricity networks than the relatively benign variations in the output of wind plant"*

*"Contrary to popular perception, wind variations are not totally random and unpredictable, and the likely changes in output, on various timescales, can be quantified."<sup>19</sup>*

Numerous authoritative studies have shown that the introduction of wind energy **does** mean a reduction in the amount of conventional power stations needed to provide reliable supplies of electricity and a reduction in carbon emissions.<sup>20</sup>

The electricity grid is coping all the time with huge swings in demand and both planned and unplanned outages of generating capacity. To exploit more wind power needs no new technology and adds only slightly to overall electricity costs. (because power stations whose output can be stepped up or down at short notice tend to be more expensive to operate).

In Denmark the very occasional rapid shifts in wind power have been successfully managed via backup power station capacity and hydro-electric energy stores, which

are both available in Britain. Wind power provides 21% (or a fifth) of electricity for Denmark – the world leaders in wind.<sup>21</sup>

The costs of back-up power for wind range between 2 - 6% of the cost of a unit of electricity depending on how much wind power is built. If wind power provides 32% of our electricity in 2020 – as required in Government projections - variability costs would increase domestic electricity prices by 2% - or 0.2p for an average 10 pence per unit of electricity.<sup>22</sup>

### **Noise is not an issue**

Thanks to advances in wind turbine technology, well designed, well-sited turbines can be quiet enough to cause no disturbance to people living just a few hundred metres away. At these distances, any noise they do make is usually drowned out by the natural noise of the wind itself in trees and vegetation. To protect nearby residents from any undue disturbance, proposals to install wind turbines are required to meet strict noise standards.<sup>23</sup>

Having read exaggerated claims in the press, people visiting wind farms are often surprised at how quiet they actually are. The Scottish Executive public opinion survey is one of several demonstrating that concerns about noise are often unfounded. Before construction of the Scottish wind farms, 12 per cent of people living near the sites thought that the turbines would cause a noise nuisance, but after construction, when people had experience of the wind farm operating, only 1 per cent thought they were noisy.

Wind turbines are typically sited at least 300m away from houses and at this distance they emit noise at approximately 40 decibels, the same level of an average sized domestic fridge.<sup>24</sup> At 350m the noise of a turbine is comparable to leaves rustling in a breeze. A car travelling at 40mph creates around 55 decibels of noise 100m away.

Each application must be determined on its own merits, but generally speaking noise is a prime example of a “wind farm myth”.

A decision on a wind farm in Bedfordshire in January 2012 by a Planning inspector looked carefully at noise issues after a developer appealed a decision against the project. The Inspector concluded:

*"On all the evidence I am satisfied that the appeal proposal, subject to the suggested relevant conditions, would not unacceptably harm the living conditions of local residents in terms of noise".<sup>25</sup>*

### **Wind power is good for the environment**

Wildlife organisations such as the RSPB and WWF strongly support wind energy in the right locations.<sup>26</sup> Stringent Environmental Impact Assessments are required for every wind farm to examine the effects a wind farm will have on wildlife. Whilst there

are some problems with specific species of birds on particular sites, studies have shown that by far the largest cause of bird deaths are standing buildings (more precisely, the windows), power lines and domestic cats.. Wind turbines are responsible for less than 0.01% of avian mortality caused by humans.<sup>27</sup>

A study has shown that some birds are particularly affected during the construction phase of windfarms, so particular attention needs to be paid to this.<sup>28</sup>

The RSPB only objects to about 6% of the hundreds of wind turbine applications it looks at each year.<sup>29</sup> They say:

*“If wind farms are located away from major migration routes and important feeding, breeding and roosting areas of those bird species known or suspected to be at risk, it is likely that they will have minimal impacts”.*<sup>30</sup>

Whilst any new development will have environmental impacts it is important to note that some gains to local ecology may be made with the right conditions. Studies have shown that some sea life can benefit from offshore wind farms with the base foundations acting like reefs.<sup>31</sup>

## **Visual impacts**

A key issue for local residents is often how intrusive the visual impact will be. We would be concerned if there were any major impacts on protected and designated sites.

This is a highly subjective issue. Being visible is not necessarily the same as being intrusive. While some people express concern about the effect wind turbines have on the beauty of our landscape, others see them as symbols of a better, less polluted future.

The 21<sup>st</sup> Century landscape includes wind turbines in many countries. Large and small arrays of onshore turbines are becoming more common. Many people find these pleasing to the eye, restful and a symbol of caring for the environment. Wind turbines should be seen in a positive light as they are capturing a clean, free renewable resource, thus reducing our dependency on high cost and high polluting fossil fuels.

## **Safe Energy Production**

Scare stories do circulate about things like loss of blades from lightning strikes, ice falling from blades and turbines catching fire or falling over. Experience with tens of thousands of wind turbines throughout the world has shown that whilst all these events are theoretically possible, they are very rare, and the risk of them occurring on a well-designed scheme is extremely small.

Overall the wind energy industry has one of the best safety records of any energy industry, and has seen fatality rates decrease in the face of a rapidly expanding capacity. Wind continues to offer a clean, safe form of electricity supply, with considerably less cost and risk to society than either fossil fuels or nuclear energy.<sup>32</sup>

## **Offshore Wind**

Many of the arguments in this document also apply to offshore wind farms. However it is more expensive than onshore wind and there are different issues relating to environmental impacts and onshore cabling. If you want advice on an offshore wind issue please contact Friends of the Earth.

Offshore wind power has the potential to meet a quarter of UK electricity demand by 2020.

Offshore energy (using wind, waves and tides) could meet our current electricity needs six times over.

Using just one third of the UK's wind, wave and tidal resource could:

- unlock the electricity equivalent of one billion barrels of oil a year, matching North Sea oil and gas production.
- achieve carbon dioxide reductions of 1.1 billion tonnes in the UK between 2010 and 2050 – a major contribution towards 2050 climate targets
- create 145,000 new UK jobs.

*“The UK’s offshore renewable resource has the potential to transform the country from a net energy importer to a net energy producer over the next four decades.”<sup>33</sup>*

The potential for harnessing energy from offshore wind is huge as we are one of the windiest countries in Europe. Offshore wind power is currently twice as expensive as onshore but costs are falling.<sup>34</sup>

## **Wind: Good for the Economy**

A strong wind industry, both on and offshore, is important for Britain’s growth and jobs. Around £5bn of investment is planned in wind energy in 2012, and a further £50bn is planned by 2020 creating up to 90,000 jobs.<sup>35</sup>

The wind industry already provides around 10,000 full time equivalent jobs.<sup>36</sup> The UK wind and marine energy industry has the potential to create 44,000 - 88,000 jobs by 2021 depending on the right policy framework and investment in skills.<sup>37</sup>

Wind farms are good for the British economy at a time of recession. One study shows that the majority of expenditure on wind power occurs in the UK. 98% of development expenditure, 45% of construction expenditure and 90% of operation and maintenance expenditure currently occurs in the UK.<sup>38</sup>

In 2011 the onshore wind sector contributed an estimated 8,600 jobs and £548 million in GVA across the UK.<sup>39</sup>

## Wind Power is Clean British Energy

Just six big companies control 99 per cent of the household energy we use and own more than two thirds of our power stations. They're keeping us hooked on increasingly expensive, imported fossil fuels, like coal and gas. Rocketing gas prices have led to soaring household bills whilst profits for these companies' shareholders are quadrupling in some cases.

Friends of the Earth's Clean British Energy campaign is calling on David Cameron to seize the power back from the Big Six energy suppliers and award the country a 'CBE' - a Clean British Energy revolution.

A YouGov poll (April 2012) showed that 85% of Brits want David Cameron to force the Big Six energy companies to develop clean British power from renewable sources of energy.

The forthcoming Energy Bill is a once-in-a-generation chance to shake up the broken system. The current Government proposals will leave us trapped in the same system dominated by the Big Six and a dependence on imported fossil fuels and nuclear power.

Find out more at [www.cleanbritishenergy.co.uk](http://www.cleanbritishenergy.co.uk)

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<sup>1</sup> [http://www.foe.co.uk/resource/guides/supporting\\_renewables.pdf](http://www.foe.co.uk/resource/guides/supporting_renewables.pdf)

<sup>2</sup> [http://www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)

<sup>3</sup> Overarching National Policy Statement for Energy (EN-1) Department of Energy and Climate Change

<sup>4</sup> National Policy Statement for Renewable Energy Infrastructure (EN-3) Department of Energy and Climate Change <http://www.official-documents.gov.uk/document/other/9780108510793/9780108510793.pdf>

<sup>5</sup> [http://www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)

<sup>6</sup> [http://www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)

<sup>7</sup> [http://www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)

<sup>8</sup> [http://www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)

<sup>9</sup> [http://www.decc.gov.uk/en/content/cms/meeting\\_energy/wind/onshore/faq/faq.aspx](http://www.decc.gov.uk/en/content/cms/meeting_energy/wind/onshore/faq/faq.aspx)

<sup>10</sup> Based on an average annual domestic household electricity consumption of 4,700kWh (DECC).

<sup>11</sup> What's behind Your Bill, Friends of the Earth, March 2012

<sup>12</sup> Committee on Climate Change, 'Household energy bills' (December 2011):

[http://downloads.theccc.org.uk.s3.amazonaws.com/Household%20Energy%20Bills/CCC\\_Energy%20Note%20Bill\\_bookmarked\\_1.pdf](http://downloads.theccc.org.uk.s3.amazonaws.com/Household%20Energy%20Bills/CCC_Energy%20Note%20Bill_bookmarked_1.pdf)

<sup>13</sup> [http://www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)

<sup>14</sup> What's behind Your Bill, Friends of the Earth, March 2012

<sup>15</sup> <http://www.ecotricity.co.uk/news/news-archive/2012/on-shore-wind-power-cost-households-less-than-5-last-year>

<sup>16</sup> [http://www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)

<sup>17</sup> [http://www.foe.co.uk/campaigns/climate/issues/nuclear\\_index.html](http://www.foe.co.uk/campaigns/climate/issues/nuclear_index.html)

<sup>18</sup> Managing Variability, David Millborrow, June 2009 Report for WWF-UK, Greenpeace UK and Friends of the Earth EWNI <http://www.greenpeace.org.uk/media/reports/wind-power-managing-variability>

<sup>19</sup> <http://www.greenpeace.org.uk/media/reports/wind-power-managing-variability>

<sup>20</sup> See appendix 1 of Managing Variability which references The Costs and impacts of intermittency, UK Energy Research Centre and Network Impact Study, Mott MacDonald Ltd amongst others.

<http://www.greenpeace.org.uk/media/reports/wind-power-managing-variability>

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- <sup>21</sup> [http://www.wwindea.org/home/images/stories/pdfs/worldwindenergyreport2010\\_s.pdf](http://www.wwindea.org/home/images/stories/pdfs/worldwindenergyreport2010_s.pdf)
- <sup>22</sup> <http://www.greenpeace.org.uk/media/reports/wind-power-managing-variability>
- <sup>23</sup> South Bedfordshire Friends of the Earth commissioned a report from an acoustics expert at a public inquiry into the Biggleswade Wind Farm in 2011. The inspector gave approval for this wind farm.  
<http://www.southbedsfoe.co.uk/Wind%20-%20Dorcas%20Lane%20noise.htm>
- <sup>24</sup> <http://www.gereports.com/how-loud-is-a-wind-turbine/>
- <sup>25</sup> <http://www.southbedsfoe.co.uk/images/Wind%20Farms%20-%20Decision%20Letter%20Biggleswade.PDF>
- <sup>26</sup> See for example the [National Trust](#), [Natural England](#), [RSPB](#) and [WWF](#)
- <sup>27</sup> [http://www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)
- <sup>28</sup> <http://www.journalofappliedecology.org/view/0/editorschoice492.html>
- <sup>29</sup> <http://www.rspb.org.uk/ourwork/policy/windfarms/index.aspx>
- <sup>30</sup> <http://www.rspb.org.uk/ourwork/policy/windfarms/index.aspx>
- <sup>31</sup> <http://www.sciencedaily.com/releases/2010/01/100118132130.htm>  
<http://www.sciencedaily.com/releases/2012/04/120410093318.htm>
- <sup>32</sup> [http://www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)
- <sup>33</sup> [http://www.offshorevaluation.org/downloads/offshore\\_valuation\\_full.pdf](http://www.offshorevaluation.org/downloads/offshore_valuation_full.pdf)
- <sup>34</sup> [www.cse.org.uk/downloads/file/common\\_concerns\\_about\\_wind\\_power.pdf](http://www.cse.org.uk/downloads/file/common_concerns_about_wind_power.pdf)
- <sup>35</sup> <http://www.businessgreen.com/bg/news/2165840/wind-energy-giants-throw-support-industry-charter>
- <sup>36</sup> [http://www.bwea.com/pdf/publications/Working\\_for\\_Green\\_Britain.pdf](http://www.bwea.com/pdf/publications/Working_for_Green_Britain.pdf)
- <sup>37</sup> <http://www.bwea.com/media/news/articles/pr20110707-1.html>
- <sup>38</sup> <http://www.bwea.com/media/news/articles/pr20120507.pdf>
- <sup>39</sup> This includes direct and indirect supply chain jobs and GVA.  
[http://bwea.com/pdf/publications/Onshore\\_Wind\\_Direct\\_and\\_Wider\\_Economic\\_Impacts.pdf](http://bwea.com/pdf/publications/Onshore_Wind_Direct_and_Wider_Economic_Impacts.pdf)