



Let's talk about ON-SHORE WIND

Development of onshore wind is an important part of BWCE's proposed portfolio. However, it faces a number of perceived and actual barriers. The purpose of this briefing is to help BWCE supporters stimulate discussion and consensus around the role of on-shore wind. It doesn't cover questions in depth, so please see the resources listed at the end for further information and peer reviewed sources. You can also click on the links for more background information.

Onshore wind is cheap

Onshore wind is now the cheapest form of new energy installation. Since 2016, there have been no subsidies for onshore wind. The main reason for rising energy bills has been the increased cost of fossil fuels.

Onshore wind is popular

79% of the population support on-shore wind. 61% would be happy to have large scale renewable energy in their area. 80% thought that renewable energy developments should provide direct benefits to the communities in which they are located.

BEIS government survey 2019.

Onshore wind is crucial in tackling climate change

Wind power, on and off-shore, is essential to meet the reductions in carbon emissions set out in the Climate Change Act. This commits the UK to achieving an 80% cut from 1990 levels by 2050. The rapid decline in coal-fired power combined with growth in renewable energy (33% of the UK's electricity in 2018) has already led to substantial cuts in carbon emissions. The energy sector is now responsible for about a quarter of UK emissions, slightly less than transport.

But as the [Committee on Climate Change](#) has pointed out, to make further progress the government now needs to support low cost, tried and tested options, such as onshore wind. This also makes good financial sense, as the remaining fossil fuel resources become increasingly expensive to extract.

For Bath and West Community Energy, development of onshore wind is essential to complement solar generation and meet its goal of matching local demand with local renewable energy supply.

Wind turbines can pay back the energy used to make them in less than a year

Modern larger turbines can now pay back the energy invested in less than a year, and sometimes less than six months. On average, onshore wind turbines generate 18 times the energy used to make, install and maintain them over a 20-25 years lifetime. This compares favourably with fossil fuels, where the energy needed to extract coal, oil or other fuels is increasing as resources become scarce and harder to access.

When the wind drops....

"Many of the fears about the impact (of intermittent technologies) were overblown."

Greg Clark, Secretary of State for Business, Energy and Industrial Strategy, 2016.

The National Grid is skilled in managing supply and demand (eg the evening peak or the break in a popular television programme). A mix of different renewable sources throughout the country means that it's possible to predict and manage supply, and it's often windiest at times of peak demand, like winter evenings. We can also draw on interconnectors, grid links that provide power from other countries, like France or Ireland, in order to balance demand.



Intermittent renewable energy sources already supply around a [third of our electricity needs](#), with wind providing well over 40% of that. Future forecasts by the [national grid](#) suggest that [renewables will be providing far more in the future](#).

True, the average wind turbine doesn't generate any electricity for about 20% of the time over a year, usually because it's not windy enough, and they will not always be working at peak efficiency the rest of the time. This is either because more energy than needed is being produced, or the local grid connection has reached capacity so no more energy can be uploaded to the grid. However, no energy source operates all the time. The most efficient power stations (combined cycle gas turbine and nuclear) achieve an average of around 60-65% of their maximum capacity annually.

But the big advantage of renewable energy is that after the initial investment, costs of electricity generated are very low. The challenge is to find ways of using and storing the excess energy produced, through batteries, for example. Battery storage is already rapidly growing on the grid with [large scale installations now taking place](#).

Managing demand is another option. For example, there are already agreements with large companies to reduce energy use at times of peak demand (without affecting operation) and with increasing focus on smart grids by both [government and the regulator Ofgem](#) the potential for demand side response at all levels will rapidly increase.

Subsidies and support

On-shore wind no longer receives any subsidies.

Most new technologies depend on government support initially, and subsidies from the 1990s on helped the wind power sector, on and off-shore, to expand, gain experience, and improve performance and efficiency. Off-shore wind, which is less well-established than on-shore, continues to be supported through [Contracts for Difference](#): this provides certainty about how much renewable installations will receive for the energy produced. On-shore wind is excluded from this scheme.

[Direct financial subsidies aren't the whole picture](#), though. While on-shore wind is the cheapest new source of energy, other factors distort the market. So, for example, fracking benefits from [fast track planning](#), new nuclear at [Hinkley Point](#) from 35 year guaranteed returns, and North Sea oil from [tax breaks](#).

However, increased use of renewable energy does require [investment in the national electricity grid](#), which was set up to distribute energy from a relatively small number of large generators rather than many small diverse sources. Upgrading is required in any case, and the sums involved are relatively modest and should provide long-term savings.

The biggest problems for on-shore wind

There are two main problems for on-shore wind: planning and exclusion from Contracts for Difference.

While onshore wind is the cheapest form of new energy, and viable without subsidy, it faces exceptionally rigorous planning requirements, introduced in 2015: planning permission can only be granted if the development site has been clearly identified in a local or neighbourhood plan, and with the support of the local community. Since on-shore wind is also excluded from the long-term security offered to other low carbon sources by Contracts for Difference, **new developments are seen as both time-consuming and high risk.**

Birds, bats and other wildlife

Climate change is the greatest threat to birds and other wildlife, as the RSPB points out.

Yes, wind turbines do kill birds, but let's put that in perspective. The number killed is far fewer than those killed by cats, cars or from collision with buildings. The real question, however hard-hearted it may sound, is what kind of birds are affected: turbines are often sited in wild places, where rare birds of prey, for example, are at risk. So making sure that wind farms are built in the right place is vital. Nowadays, all wind farms have to complete an environmental assessment, including impact on rare species, and work is underway on [innovative ways](#) to prevent collisions. Wind farms can also harm bats, although there has so far been less research in this area.



Wind in the Bath area

There is potential for on-shore wind in the BWCE area. In 2010, Bath and North East Somerset council (BANES) identified the practical potential for up to 17 large wind turbines in the area and 17 small to medium wind turbines, generating just under 45MW, enough to power around 31,500 households. This was based on a [full landscape character assessment](#), including a landscape assessment of the areas with the [greatest technical potential](#).

Similar research was carried out for [Wiltshire](#) and [South Gloucestershire](#) councils. A [recent review of the B&NES potential for renewable energy in 2018](#) confirmed the outcomes from the previous research and suggested setting targets for 2036, in line with the B&NES local plan currently under development.

Neighbourhood plans

It's important to make sure that on-shore wind is included when local and neighbourhood plans are developed, since planning approval for on-shore wind depends on its inclusion in a local or neighbourhood plan.

B&NES have recently consulted on their [updated Local Plan to 2036](#). The draft plan is due to be developed this summer, with examination in the autumn and adoption in early 2020. The proposal is that this plan will contain areas of search for wind energy. Even if this plan is approved, successful planning applications for wind will still need to demonstrate community support. It's therefore vital that local communities also review the potential for renewable energy in their area and work to support the development of wind turbines in areas where they are appropriate. This is also a chance to give priority to community owned organisations, like BWCE, which can provide real local benefits thereby increasing local support. The Centre for Sustainable Energy has produced a [Low Carbon Neighbourhood Planning guide](#) to help. For more detail on planning and renewable energy, see the Town and Country Planning Association [Rising to the Climate Crisis guide](#).

What can you do?

- Take every opportunity to talk to people you know about onshore wind. Keep it simple, without too many statistics, and stress two main points: it's cheap and it's popular.
- Talk to your MP, again emphasising that on-shore wind is both cheap and popular. Many MPs don't realise this. And if on-shore wind is community owned, with benefits for local people, then that's even better.
- Engage with the process for approving the B&NES local plan and support the proposal for areas of search for wind energy during the examination process
- Raise the potential for wind if a neighbourhood plan is being developed in your area, or if the Local Plan or Core Strategy is under review. This is also an opportunity to stimulate discussion on renewable energy in general. Check what's happening in [BANES](#), [Wiltshire](#), and [South Gloucestershire](#).
- Following publication of the B&NES draft local plan in summer 2019, proactively identify opportunities for wind energy projects in any areas of search and support applications for projects when they appear.

More information

['Common Concerns about Wind Power'](#), *the Centre for Sustainable Energy, 2nd edition 2017. 132 pages.*
Excellent in-depth analysis of peer reviewed sources.

['Switching on: How renewables will power the UK'](#), *Friends of the Earth. 2017. 12 pages.*

A slightly easier read, but with good references, mainly government sources.

['What's Up with Wind?' 10:10. Online.](#)

In a nutshell: quick and easy read. 10:10 has been active in organising discussions with MPs, and has some good tips to share. Check out the wind dial!