

The Disadvantages of Wind Power, by D S Brodie BSc

This note is a layman-level guide to the serious disadvantages of wind power, the main poster child of so-called renewables, written from a Scottish perspective but applicable to the entire UK. The facts in this note have been drawn from a wide range of publicly accessible studies, reports and authoritative blogs, e.g. this post from energy analyst Dr Euan Mearns [Renewable Energy: The Most Expensive Policy Disaster in Modern British History](#); the Civitas report [Electricity Costs: The Folly of Wind Power](#); and the study by Mr Derek Partington on [The Intermittency of UK Wind Power Generation](#). The subjective views in this note are my own.

Many of the arguments against wind power also apply to other unfit for purpose energy technologies which politicians and the energy industries unjustifiably yet brazenly promote as "*sustainable renewables*", e.g. biomass (i.e. wood), with the Drax coal-fired power station expensively converted to burn expensive, [unsustainable](#) clear-felled North American forests with carbon dioxide (CO₂) emissions [higher than](#) the locally mined coal it used to burn.

First, a brief outline of the essentials of wind power. Wind in the UK is very intermittent and the electricity output of a wind turbine is proportional to the cube of the wind speed. This means that a 20% drop in wind speed gives a fall in wind electricity supply of almost 50%. Because of wind intermittency the average output of the UK's wind farm fleet is only about 30% of rated (installed) capacity, with peaks of up to about 80% and lows of not much at all, e.g. less than 5% of rated capacity for about 7% of the time. The national grid has to be balanced exactly at all times to match electricity supply to varying customer demand. Nuclear power plants supply steady baseload and are not suitable for making rapid balancing adjustments. Thus the task of ramping the overall national supply up and down to balance the variable supply of wind electricity falls mainly on fossil fuel plants, i.e. coal and gas, topped up in emergencies from a [covert fleet](#) of "*dirty diesel*" short-term standby generators. As explained below, this all comes at a very high price.

Wind farms are everywhere nowadays yet few people understand (because the authorities never admit it) that the entire UK wind power fleet is almost 100% redundant as it has to be duplicated by secure, reliable backup supplies to generate the electricity needed during UK-wide windless anti-cyclonic conditions of near zero wind electricity supply which can last for days on end (clearly shown on websites such as [Gridwatch](#)), especially in cold, dark midwinter when power is needed most. There is no prospect of any affordable energy storage technology being able to bridge such a long gap. So why built any expensive, unreliable wind farms in the first place?

The government has published no credible evidence that wind power will yield worthwhile savings in net CO₂ emissions at the high levels of wind capacity they hope to achieve. (The higher the installed wind capacity, the greater the overall system inefficiencies.) The claimed savings of CO₂ emissions by wind power are routinely exaggerated for propaganda purposes. When the calculation is done properly on an overall system basis the net CO₂ savings of wind power are less than the general public has been led to believe. This is because the intermittency and variability of wind forces the supporting fossil fuel plants into inefficient operation, burning more fuel and emitting more CO₂ for a given output of electricity. They have to maintain wasteful spinning reserve in case the wind suddenly drops and they inefficiently ramp up and down as the wind speed changes, which over time causes [accentuated wear and tear](#) and further loss of efficiency. Any direct wind power CO₂ savings have to be offset against the energy costs of constructing (mostly abroad), transporting, installing, maintaining and eventually dismantling all the wind turbines. The costs of the national fleet of high emissions diesel standby generators also need to be taken into account.

Physically stressed wind turbines have relatively [short service lives](#) (especially in hostile offshore environments) and the performance of the current fleet of wind turbines will fall off rapidly as they degrade with age. When they finally expire many will probably not be replaced as they are economically unsustainable without the huge subsidies which were axed (onshore) by the UK government last April, evidenced by the [fall](#) in the building of new capacity since then. Re-financing prematurely worn-out wind

turbines will simply reinforce the cycle of ever-increasing fuel poverty. Will the taxpayer be saddled with the eventual bill for dismantling?

Loading the national grid with too much intermittent wind power creates instability dangers which increase the risks of blackouts. This means that wind power can never be more than a relatively minor supplier of overall national electricity. (The SNP'S boast that they can get to 100% Scottish renewables is only possible by making Scotland dependent on the rest of the UK for backup and [subsidy payments](#).) What's more, few people understand how insignificant wind power is in terms of national energy supply, as distinct from national electricity supply, despite its already large footprint. Government statistics show that in 2014 just 1.4% of total UK energy was supplied by wind power. This tiny share is an upper limit to its net displacement of fossil fuel CO2 emissions, which shows that wind power alone can barely scratch the surface of the 80% decarbonisation of the economy demanded by the Climate Change Act.

Few people understand (because the authorities never admit it) that wind power is a major cause of fuel poverty, despite the free wind. This is because wind power is much more expensive than coal and gas-fired electricity when calculated on an overall system basis, especially before the green taxes on fossil fuel plants are taken into account. These wind power costs are: the huge wind power subsidies; the supply of fossil fuel backup when the wind fluctuates (which makes backup plant run inefficiently) or stops blowing completely; the constraint payments paid to wind farms to switch off to avoid overload damage to the grid when the wind is too strong or the demand is too low, e.g. overnight in summer; and the cost of providing grid connections to wind farms built far from the centres of population, e.g. all over the far north of Scotland. All these costs and green taxes are regressively loaded onto our electricity bills which ensures that society's least well off suffer the most. Why are politicians so supportive of these elitist climate change policies?

The result of the high costs of wind power (and other energy costs foisted upon us by the Climate Change Act such as: expensive, inefficient biomass electricity; the Climate Change Levy on businesses which gets passed on to the general public; the pending £11+ billion cost of [smart meters](#); and much more) is Scottish fuel poverty of a shocking **35%** in 2015, up hugely from 16% in 2004 before all the climate change policies started. Most politicians are in denial on this, evidenced by the recent [Holyrood debate](#) on fuel poverty in which not one member of any party even mentioned the Climate Change Act. What's more, this situation is certain to get worse over the coming years and decades as politicians persist in their forlorn attempt to meet the unattainable 2050 Climate Change Act target of 80% decarbonisation of the economy.

A further major drawback of wind farms which few people understand is that wind power acts like a parasite, stealing market share from the essential fossil fuel plants it depends on for backup, because wind power gets preferential grid access. This effect is compounded by the perverse Carbon Price Floor green tax on fossil fuel plants, designed to force them out of business (already achieved in the case of e.g. Longannet). The net result of this incoherent policy regime is that wind power renders fossil fuel power plants uneconomic, making commercial suppliers [unwilling](#) to build the new gas power stations vitally needed to keep the lights on as our outdated nuclear and unloved coal power plants are shut down with reckless abandon to create a wafer thin capacity margin, the safety buffer between peak electricity demand and available supply. An essential technology that works is being driven out by an antiquated one that doesn't. We are now in the absurd situation that because of all the large subsidies and relative advantages bestowed on unreliable wind power and other renewables, we are having to subsidise the very fossil fuel plants the government has been recklessly trying to phase out, and probably nuclear plants as well, in order to keep the lights on. The more wind farms that get built, the worse it gets. We should learn from Germany's failing, [poorly thought through](#) attempted transition to a so-called low carbon economy.

Political blindness to the technical shortcomings of wind power and other ineffectual renewables extends to ignoring the inconvenient fact that any minor CO2 savings in Scotland/UK will make negligible difference to global emissions and the global climate, even if you believe in the man-made CO2 global warming theory. This is because, contrary to the propagandist hype surrounding the Paris Climate Agreement, the heavily populated, fast growing developing countries (including China and India) which are all [excluded](#) under this agreement from any obligation to cut their emissions will continue to use [more and](#)

[more](#) cheap, reliable, abundant fossil fuels for the [foreseeable future](#), vastly outweighing any modest savings made by the developed countries. Deploying yet more expensive, ineffectual renewables will simply make the UK more and more globally uncompetitive (along with the climate-obsessed EU which devotes 20% of its entire budget to "[climate action objectives](#)", whose burdensome policies and directives we can soon choose to ignore).

On top of all these technical problems, wind farms despoil vast tracts of our precious landscapes, supposedly the unique selling point of our tourism industry, and blight the health and welfare of householders unfortunate enough to live in the near vicinity.

The result of all this nonsense is that on top of having brought about escalating business costs and householder fuel poverty, our politicians seem to be sleepwalking into a scenario of winter blackouts and/or electricity rationing in the not too distant future, all because of a politically-gerrymandered consensus on a politically-contrived, virtue signalling, unvalidated theory of man-made global warming. This contrivance is made worse by lack of proper scientific or engineering due diligence and the adoption of inappropriate, wishful thinking methods to supposedly "[tackle climate change](#)" which can only achieve [marginal, irrelevant decarbonisation](#).

Political support for these ineffectual climate and energy policies has hastened the closure of Cockerhill and Longannet coal-fired power stations. When the Longannet plant closed for good in March 2016, Scotland switched from having had a healthy surplus of electricity generation capacity to being dependent on [imported](#) electricity from England to keep our lights on and our computerised economy running. With replacement Scottish nuclear power stations ruled out by the SNP, Scotland could be left with little more than ageing wind turbines when our two aged nuclear plants reach the end of their lives, possibly within a decade. How many businesses will be keen to invest in a country with such a rickety, insecure yet expensive electricity system?

The antidote to all this nonsense? The essential first step is to repeal the Climate Change Act with its unconvincing, disputed, politically-mandated justifications and its futile, unachievable, politician-designed energy schemes. Revert instead to a national energy system designed by engineering professionals who are not in thrall to the politically-contrived theory of alleged man-made global warming, for which no credible, ratified empirical evidence has ever been presented (if it had we would know all about it).

For more details on this analysis please refer to [Why the Climate Change Act should be Repealed](#).