

Stop Kingsnorth no to new coal power

Q&A & Mythbuster

Why is coal such a problem?

If global reserves of oil and gas are burnt this threatens to push the world into dangerous climate change through increasing the atmospheric concentration of CO₂. Reserves of coal are much greater and contain more carbon and so if these reserves are burnt it risks dangerous climate change of a far greater scale and intensity. Coal use globally is increasing rapidly mainly because of electricity generation. Developed and transition economies alike are planning major new build of coal plants. The consequences of this unabated coal burning will be felt hardest by the world's poorest and most vulnerable communities through dangerous climate change.

What is the problem with Kingsnorth?

Kingsnorth will emit an estimated 8m tonnes of carbon dioxide a year and thereby contribute greatly to climate change over its 50 year life. Specifically any new coal plant threatens to push the climate beyond critical tipping points (ie points of no return) for instance causing Arctic ice sheets to collapse resulting in metres of sea level rise.

If consented Kingsnorth will be the first of probably 6 new plants in the UK. It will also do nothing to curb other countries building new unabated coal plants – particularly in China, India, the US and Germany.

Building coal plants threatens to constrain growth in renewables just as the government has a new target to achieve 40%-45% by 2020 (up from 5%). It will also make it next to impossible to achieve CO₂ reduction targets – CO₂ emissions have risen since 1998 because of increased burning of coal.

Why will Kingsnorth lead to the building of more coal-fired power stations?

No coal plants have been built in the UK since Drax was completed in 1974. If Kingsnorth goes ahead the precedent will be set and the government would find it increasingly hard to refuse consents if it ever decided to do so. The UK's utilities have publicly stated their interest in building coal plants at Tilbury, Blyth, Fiddler's Ferry, Ferrybridge, Longannet and Cockerzie.

Kingsnorth is ok because it is more efficient and reduces CO2 by 20%

Kingsnorth will be a 'supercritical' coal plant which works at higher pressure and temperature than traditional subcritical plants. It will indeed be more efficient – by around 20% - bringing efficiency up to only 45%. This is half what is being achieved in combined heat and power plants elsewhere. Coal is also twice as bad as natural gas in terms of carbon dioxide emissions – so even with increased efficiency, coal plants remain the worst possible option for generating electricity in terms of climate impact.

Kingsnorth is ok because it will capture the carbon

1. No coal plants presently capture carbon anywhere in the world. Carbon Capture and Sequestration (CCS) technology is promising and is set for trial in Europe and elsewhere in the world. The UK government is holding a competition for a demonstration project on CCS with the winner announced next year, after which the plant will be built and the trial conducted and evaluated in the 2010s. The government hopes if this demonstrates technical and economic viability, CCS may be deployable at some point in the 2020s. The IPCC study into CCS identified that CCS may be deployed at scale around the world in the latter half of this century. In short CCS will not be deployable in the UK until the 2020s and only then if it proves to be technically and economically viable.
2. Because the technology is uncertain, EON says only that it will 'consider' capturing carbon 'as an option' at some undetermined point in the future. And only then if there is an incentive regime. To that end it says it will make the plant 'capture ready'. In short there is no formal condition or even commitment that a single tonne of carbon dioxide emitted from Kingsnorth will be captured and sequestered.

Kingsnorth is ok because it will be 'capture ready'

Every coal plant old or new is 'capture ready' in so far as equipment to capture carbon can be retrofitted at some later date – just as technology for capturing sulphur dioxide has been retrofitted in recent years. Capture readiness at Kingsnorth amounts to setting aside some land – capture technology will not be integrated from the outset. Nor is there infrastructure planned to transport CO2 (such as a pipeline), nor is there an identified site for injecting CO2 nor a monitoring programme planned once injected. Nor has there been an economic assessment or agreement on who will pay for it.

Kingsnorth is ok because nuclear power and renewables are coming and will do enough to decarbonise electricity

The government has given the green light to new nuclear plants, but, if they are built, these will not be deployable until some point in the 2020s. There are presently no nuclear plants applying for consent, while there is one unabated coal plant now and two more expected by the end of the year with three more close behind. The government now has a major target to build enough renewables to make up 40%-45% of electricity by 2020. However, the government is far from achieving this and building

new coal plants will obviate investment in renewables just as it has done historically (the UK has plentiful fossil fuel capacity and only 5% of electricity is renewable). The market will be unable to secure a return if there is oversupply.

Additionally more coal capacity – as the most polluting possible option - means every other part of the economy must work harder to decarbonise to compensate. This means there is more pressure both on electricity, but also other sectors where decarbonisation is harder such as transport.

There is no local opposition to Kingsnorth because the local authority said the plant was fine

Medway Council was only a consultee on Kingsnorth – power plants are determined by the Secretary of State in DBERR. Medway was not able to object to the plant because there is no legal bar to building a coal plant at present in the UK. In other words councillors used to dealing with local planning matters would have had to challenge the whole of energy policy to oppose the plant. Therefore the councillors restricted themselves to local planning considerations, but called for a public inquiry in order for the national level concerns to be heard.

New coal plants are needed to fill the energy gap

The government has said in previous years there may be an 'energy gap' in the period between 2015 and 2020. This is because 8.6GW of coal plants must be closed by 2015 under European law, 7GW of nuclear plants by 2020 and a further 4.5GW of oil-fired power stations (which have barely been used). In all the government has identified that a 'gap' of 14-22GW may open up over this period.

However, by 2020 the government says renewables must account for 40%-45% of electricity – the equivalent of about 30GW must be built (for technical reasons more renewables than this will actually need to be built). Already there is 10GW of onshore wind and 8GW of offshore wind being built. Additionally 16GW of gas power stations have been consented of are applying for consent, but not yet built. In short there is as much, if not more risk of an oversupply than a gap. Given nuclear may or may not be built as well there is no case for new coal plants on the basis of electricity need. The reason the market want to build coal is because of their internal considerations around profitability. – companies want a diverse portfolio that has a wide range of technologies.

Kingsnorth is a good idea because we have plenty of coal so it helps with security and keeps domestic jobs

The UK supplies only 30% (and declining) of coal used in the UK. Supplies are in decline. Coal mining employs just 5,600 miners. Most of the UK's coal comes from opencast sites which have significant social and environmental impacts. Opencast mining however, employs only 1,600 miners. Important though these jobs are, there are also jobs in renewables, energy efficiency etc

In terms of security, renewables are the most secure option as they convert ambient energy to electricity rather than relying on fossil fuels which suffer from great price

volatility. Decentralised electricity and combined heat and power based on fossil fuels are more secure by being more diffuse and many times more efficient, requiring much less. Energy efficiency more broadly reduces reliance on fossil fuels. These options enhance security and diversity, it is fossil fuel options that reduce security of supply.

New coal plants are needed so we don't have to rely on Putin's gas

The UK's North Sea gas supply is in decline and now a small amount of gas is imported. This may grow over time. While there is a link to the main European supply via Belgium, in fact the main source of imported gas to the UK is, and will be, Norway. In contrast 70% of coal is imported. The biggest source (bigger now than the UK's contribution) is Russia. Other sources include South Africa and Australia.

New coal plants are needed because renewables are intermittent

All power options are intermittent – including fossil fuel power stations which drop out. Renewables in practice tend to be more smooth and predictable in terms of their natural intermittency. Wind is likely to be a major component of the UK's future energy mix. It is intermittent, but as the resource develops it is also spread around the country and so able to even out. A higher proportion of renewables in power supply does lead to more challenges managing the grid infrastructure. National Grid believes this is entirely manageable. Most of the myths about intermittency are peddled by anti-wind and anti-renewables ideologues and are not based on the reality of how countries such as Denmark, Sweden and Norway have transformed their electricity to accommodate renewables.

However, the UK is only reaching for 40%-45% of electricity from renewables. This will mean 55%-60% conventional power. This capacity will include fossil fuels and must also be able to cycle efficiently to make the best of renewable capacity.

New coal plants are needed because the government's renewables targets are not achievable

It is true the government needs a much stronger strategy to achieve 40%-45% of electricity from renewables. It is clear the strategy so far has not been good enough and business as usual will not achieve the target. However, the solution to this is a better policy environment and a determined strategy to build what is needed, not to build coal plants instead. In fact this approach would be likely to secure wide public support, along with support from utilities, investors, NGOs and scientists. There is no evidence that this level of renewables can not be built. What is guaranteed to kill the achievement of the target is over-supply of fossil fuel capacity.

Kingsnorth is ok because it will be the trial site for CCS

The government is launching a competition to find out which site will be the CCS trial site. That won't be concluded until 2009. EON says it wants to start building Kingsnorth in Summer 2008. Additionally the trial is for a 300MW site and Kingsnorth will be 1600MW. At the moment EON's plans do not fit with the government's CCS strategy.

Coal is needed because it is the cheapest fuel and will keep costs down for consumers

Recent consumer price fluctuations have been experienced because of fossil fuel price volatility and the reliance of the UK on spot markets rather than long term contracts. While initially higher because it is new technology, wind onshore has come down enormously in price. Offshore is new, so initially pricy, but expected to come down in price too by 2020. So it is not a clearcut 'truth' that coal is cheap and everything else expensive.

California has regulated to halt new coal plants because it was concerned about the risk to Californian ratepayers of coal. These are described as carbon price, offsetting costs and CCS retrofitting costs. Europe already has a carbon price under the ETS. The first round of this has amounted to very little because carbon prices crashed. Future carbon prices are expected to be at least €25 per tonne. Who pays for CCS retrofitting remains unclear. But costs will have to include onsite carbon capture processes, pipelines to transport carbon dioxide and injection and monitoring (possible for many generations) costs. Coal will have to pay more of these carbon regulation costs than any other option because it is the most carbon intense option.

Coal's costs are also externalised. The new Kingsnorth station is likely to emit around 8 million tonnes of CO₂ per year. The government's shadow price for carbon in 2008 is £26 per tonne CO₂ (rising to £33 in 2020 and £49 in 2040). Even on 2008 prices, this would put the damage costs from one year of Kingsnorth's unabated emissions at £208 million. Stern put the social cost of carbon at £43/t CO₂ for a business as usual trajectory (ie the damage costs from climate change will be higher if we carry on as we are - arguably a realistic assessment of the current state of play). This puts the annual damages caused by Kingsnorth's CO₂ emissions at £344 million. CCS costs are anticipated to be \$50-80 per tonne of CO₂. Obviously CCS means the carbon price is averted, but at the cost of plant efficiency and only 80-90% of the CO₂ is capturable. Offsetting costs are possible if the presence of coal plants means the UK does not achieve its emissions reductions domestically - thereby requiring overseas offsetting which is both unreliable in terms of carbon reduction and also costly both through direct financial transfer and through opportunity cost for inward investment.

Kingsnorth is irrelevant because China is building new coal plants every week

Building Kingsnorth will do nothing to curb the building of unabated coal plants elsewhere. It is not only China that is building plants, Germany, the US, Poland, India all have major growth planned. The power markets and technologies are international and so what happens in one country can have implications (positively or negatively) elsewhere.

Coal is going to be part of our energy mix, so why not replace old plants with new more efficient ones?

Coal is the most polluting option. If and when CCS is deployable, that is the time to consider new coal plants. Until that point, the efficiency improvements of replacing subcritical with supercritical coal are less than can be achieved by replacing the capacity with renewables or even natural gas. Especially when other options such as decentralising to super-efficient CHP on a large scale.

The UK government has committed to reducing emissions by 20% by 2020; will the proposed building of Kingsnorth mean that the government will fail to meet its targets?

Since 1998 CO₂ emissions have gone up – as a direct result of burning more coal. Failure to curb coal will put 2020 targets – and subsequent years of deeper targets – at great risk. From this year, climate targets will become binding following the Climate Act. This is a problem because the IPCC has said carbon emissions need to be on a downward trajectory quickly in order to keep climate change below 2C.