# Carbon capture stations must not be delayed

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Despite the economic downturn and rising prices, global energy demand continues to rise; so do carbon emissions.

In 2008 the world will use 50 per cent more oil, gas and coal than in 1980. Emissions from fossil fuels will be 30 per cent higher than in 1990 – the baseline for the Kyoto targets. The atmospheric concentration of carbon is now 387 parts per million – against 280ppm before the industrial revolution. On current trends the figure will pass 400ppm within a decade and will be more than 450ppm by 2050.

Climate change can seem so complex and global that action by any one country or individual can seem futile. In reality, however, much can be done using known and proven technology. Energy use could be cut by at least 20 per cent by matching Japanese standards of efficiency. Deforestation could be limited or reversed. Proven technologies such as wind, solar and systems to convert waste into power could be deployed. Beyond the proven, we could invest to make those alternatives cheaper and explore ambitious longer-term options: for example, large-scale solar generation in the Sahara, combined with a pan-European direct current (DC) transmission grid.

None of these possibilities, however, will provide sufficient energy in time to forestall the increasing use of hydrocarbons. Today, oil, coal and natural gas provide more than 80 per cent of world demand. On business-as-usual projections that percentage will be unchanged in 2030. That means volumes will increase by about 50 per cent with a comparable growth in emissions. Today, renewables supply just 1 per cent of global demand. Even a tenfold increase would leave carbon emissions growing.

In reality our dependence on fossil fuels is likely to persist until 2050. There seems no way to curtail the serious risk of long-term global warming unless – well before 2050 – we capture much of the carbon emitted when fossil fuels are burnt. The technology is available. Carbon capture and storage (CCS) extracts and buries the carbon from any hydrocarbon source rather than allowing emissions to enter the atmosphere.

Small-scale projects have shown that the technology works but we now need between 10 and 20 full-scale demonstration plants to identify the most effective techniques and the most secure storage options. The Group of Eight leading industrialised nations and the European Union **have endorsed this approach** but very little is happening – certainly nothing with the urgency that the challenge demands.

Each plant will cost an estimated €1bn ($1.4bn) – not a trivial sum, but a fraction of the €40bn spent each year by the EU on agricultural support and the €200bn spent by European governments on defence.

It is time for Europe's leading economies to initiate the demonstration process as part of their commitment to serious action on climate change. For the UK the opportunity and the challenge are immediate. The decision to proceed with **a new coal-fired power station** at Kingsnorth should be accompanied by a decision to begin work immediately on a CCS demonstration plant in Britain. Kingsnorth's licence to operate should be limited to 10 years and extended only if CCS technology is deployed.

Climate change is no longer a remote long-term possibility but a present reality – all too visibly demonstrated by the melting of Arctic sea ice. If emissions rise unchecked, temperatures may rise by significantly more than the 2℃ that is now almost universally viewed as inevitable.

There is substantial uncertainty about the sensitivity of temperature to the level of carbon concentration. Climate models can, however, assess the likely range. We should be most worried by the high-end tail of the probability distribution – the risk of a really drastic climate shift. A 2- or even 3-degree increase might seem manageable but we should remember that the shift in temperature from the depths of the last ice age to the present day has been just 5 degrees. Any increase that comes will also be far from uniform. The land warms more than the sea; higher latitudes more than the low. In areas such as the Arctic, any change can have untold, self-reinforcing effects. The average numbers tend to gloss over these truths.

The risks are great and probably greater than we realise. Most importantly, they are risks we need not take.

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