

# Coal-fired power stations are death factories. Close them

The government is expected to give the go-ahead to the coal-burning Kingsnorth power plant. Here, one of the world's foremost climate experts launches an excoriating attack on Britain's long love affair with the most polluting fossil fuel of all

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A year ago, I wrote to Gordon Brown asking him to place a moratorium on new coal-fired power plants in Britain. I have asked the same of Angela Merkel, [Barack Obama](#), Kevin Rudd and other leaders. The reason is this - [coal is the single greatest threat to civilisation and all life on our planet](#).

The climate is nearing tipping points. Changes are beginning to appear and there is a potential for explosive changes, effects that would be irreversible, if we do not rapidly slow fossil-fuel emissions over the next few decades. As Arctic sea ice melts, the darker ocean absorbs more sunlight and speeds melting. As the tundra melts, methane, a strong greenhouse gas, is released, causing more warming. As species are exterminated by shifting climate zones, ecosystems can collapse, destroying more species.

The public, buffeted by weather fluctuations and economic turmoil, has little time to analyse decadal changes. How can people be expected to evaluate and filter out advice emanating from those pushing special interests? How can people distinguish between top-notch science and pseudo-science?

Those who lead us have no excuse - they are elected to guide, to protect the public and its best interests. They have at their disposal the best scientific organisations in the world, such as the Royal Society and the US National Academy of Sciences. Only in the past few years did the science crystallise, revealing the urgency. Our planet is in peril. If we do not change course, we'll hand our children a situation that is out of their control. One ecological collapse will lead to another, in amplifying feedbacks.

The amount of carbon dioxide in the air has already risen to a dangerous level. The pre-industrial carbon dioxide amount was 280 parts per million (ppm). [Humans, by burning coal](#), oil and gas, have increased this to 385 ppm; it continues to grow by about 2 ppm per year.

Earth, with its four-kilometre-deep oceans, responds only slowly to changes of carbon dioxide. So the climate will continue to change, even if we make maximum effort to slow the growth of carbon dioxide. Arctic sea ice will melt away in the summer season within the next few decades. Mountain glaciers, providing fresh water for rivers that supply hundreds of millions of people, will disappear - practically all of the glaciers could be gone within 50 years - if carbon dioxide continues to increase at current rates. Coral reefs, harbouring a quarter of ocean species, are threatened.

The greatest danger hanging over our children and grandchildren is initiation of changes that will be irreversible on any time scale that humans can imagine. If coastal

ice shelves buttressing the west Antarctic ice sheet continue to disintegrate, the sheet could disgorge into the ocean, raising sea levels by several metres in a century. Such rates of sea level change have occurred many times in Earth's history in response to global warming rates no higher than those of the past 30 years. Almost half of the world's great cities are located on coastlines.

The most threatening change, from my perspective, is extermination of species. Several times in Earth's history, rapid global warming occurred, apparently spurred by amplifying feedbacks. In each case, more than half of plant and animal species became extinct. New species came into being over tens and hundreds of thousands of years. But these are time scales and generations that we cannot imagine. If we drive our fellow species to extinction, we will leave a far more desolate planet for our descendants than the world we inherited from our elders.

Clearly, if we burn all fossil fuels, we will destroy the planet we know. Carbon dioxide would increase to 500 ppm or more. We would set the planet on a course to the ice-free state, with sea level 75 metres higher. Climatic disasters would occur continually. The tragedy of the situation, if we do not wake up in time, is that the changes that must be made to stabilise the atmosphere and climate make sense for other reasons. They would produce a healthier atmosphere, improved agricultural productivity, clean water and an ocean providing fish that are safe to eat.

Fossil-fuel reservoirs will dictate the actions needed to solve the problem. Oil, of which half the readily accessible reserves have already been burnt, is used in vehicles, so it's impractical to capture the carbon dioxide. This is likely to drive carbon dioxide levels to at least 400 ppm. But if we cut off the largest source of carbon dioxide - coal - it will be practical to bring carbon dioxide back to 350 ppm, lower still if we improve agricultural and forestry practices, increasing carbon storage in trees and soil.

Coal is not only the largest fossil fuel reservoir of carbon dioxide, it is the dirtiest fuel. Coal is polluting the world's oceans and streams with mercury, arsenic and other dangerous chemicals. The dirtiest trick that governments play on their citizens is the pretence that they are working on "clean coal" or that they will build power plants that are "capture-ready" in case technology is ever developed to capture all pollutants.

The trains carrying coal to power plants are death trains. Coal-fired power plants are factories of death. When I testified against the proposed Kingsnorth power plant, I estimated that in its lifetime it would be responsible for the extermination of about 400 species - its proportionate contribution to the number that would be committed to extinction if carbon dioxide rose another 100 ppm.

The German and Australian governments pretend to be green. When I show German officials the evidence that the coal source must be cut off, they say they will tighten the "carbon cap". But a cap only slows the use of a fuel - it does not leave it in the ground. When I point out that their new coal plants require that they convince Russia to leave its oil in the ground, they are silent. The Australian government was elected on a platform of solving the climate problem, but then, with the help of industry, it set emission targets so high as to guarantee untold disasters for the young, let alone the unborn. These governments are not green. They are black - coal black.

The three countries most responsible, per capita, for filling the air with carbon dioxide from fossil fuels are the UK, the US and Germany, in that order. Politicians here have asked me why am I speaking to them. Surely the US must lead? But coal interests have great power in the US; the essential moratorium and phase-out of coal requires a growing public demand and a political will yet to be demonstrated.

The Prime Minister should not underestimate his potential to transform the situation.

And he must not pretend to be ignorant of the consequences of continuing to burn coal or take refuge in a "carbon cap" or some "target" for future emission reductions. My message to Gordon Brown is that young people are beginning to understand the situation. They want to know: will you join their side? Remember that history, and your children, will judge you.

- James Hansen is director of Nasa's Goddard Institute for Space Studies in New York. He was the first scientist to warn the US Congress of the dangers of climate change

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