Opinion & Analysis

Time to get over our hang-up about nuclear power

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In the wake of the Copenhagen failure, we are looking into the abyss of runaway global warming this century

RUSSIA'S SPACE agency is now preparing to spend hundreds of millions of dollars to prevent a possible strike by a 270-metre asteroid later this century. The odds on such a collision are long; Nasa reckons it's one in 250,000, but given the scale of the downside from even a remote risk like this, the precautionary principle applies. In other words, better safe than sorry.

Such commendable caution was nowhere in sight in Copenhagen last month, as the much-hyped UN climate conference ended in utter failure. And here's the riddle: if one country is prepared to spend half a billion dollars hedging against a vanishingly small future risk, why is humanity collectively incapable of acting decisively against the near-certainty of catastrophic climate system failure in the coming decades?

Some of the answers, appropriately enough, come in a book from an expert in both Earth and space science Prof James Hansen, director of the Nasa Goddard Institute. Hansen has a glittering scientific career spanning four decades to his credit. *Storms of My Grandchildren* (Bloomsbury) is, however, his first book.

He is clear about two things: first, the scientific evidence that we are on the cusp of a climatic cataclysm is, to all but the most determined flat-earther, compelling. (The present cold snap is just weather – ie an aspect of climate and nothing at all to do with climate change.) Second, the inertia within political systems, plus with tireless lobbying by special interest groups and a scientifically illiterate media, conspires to ensure the public remains scandalously misinformed.

The gap between what the science says and what the public is hearing has become a chasm. A survey of 1,600 international climate scientists earlier this year bears out Hansen's point. Some 86 per cent believe the deadly two degrees threshold of average global temperature increase will be crossed this century. If we let this happen, the unstoppable march of human progress will shortly encounter the irresistible force of physics.

An aggregate analysis of all emission cut pledges presented at the Copenhagen conference confirmed that, even in the unlikely event that every country on Earth fully honoured every (non-binding) pledge, we remain locked into a trajectory that takes us past three degrees and headlong into the abyss of runaway global warming this century.

The paleoclimatic record offers some guidance for our possible near future. Some 241 million years ago the Permian era came to an abrupt end. A sudden spike in global temperatures of about six degrees almost wiped out life on Earth – well over 90 per cent of all terrestrial and marine species were exterminated. There have been more recent warming episodes, but they occurred over millennia, not decades, as is now the case.

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So we know where we don't want to go. How do we not get there? Hansen has some answers. Humanity's mortal enemy is carbon. We simply have to stop releasing the stuff into the atmosphere and oceans. No number of pious promises will make a dent in the carbon crisis as long as burning fossil fuels are cheap.

Coal is the world's biggest source of CO_2; we must rapidly phase out burning coal, unless its emissions are captured at source. Putting a rising price on all carbon in the form of ever-increasing carbon taxes using a fee-and-dividend scheme is Hansen's proposal. What this means is that 100 per cent of the carbon taxes collected are given back directly to the public, with every citizen receiving an equal share of the rebate.

Driving a gas-guzzler, opting not to insulate your home and taking 10 flights a year and life will quickly get very expensive indeed. Your eco-conscious neighbour, on the other hand, is likely to end up with a tidy cash surplus from the rebate.

The catch is that coal keeps the lights on. The Moneypoint plant in Clare may spew 14,000 tonnes of climate-destroying CO_2 into the atmosphere every day, but it also boils kettles, pops toasters and powers laptops all over Ireland. Energy efficiency and renewables can help, but the world must quickly find a reliable replacement for coal in "baseload" generation.

The answer, Hansen insists, is next-generation nuclear power, using "fast-breeder" reactors. Current reactors are hugely inefficient, burning less than 1 per cent of uranium. Fast-breeder reactors are up to 99 per cent efficient, so produce vastly more energy and simultaneously, far less radioactive waste. Even better, current "waste" can actually be made safer by being reburned in these reactors. More research is needed to bring them into production.

The problem remains that some governments and almost all environmentalists trenchantly oppose nuclear power. Hilariously, Ireland has a law against even considering nuclear power – and two Green Ministers, both decent men, who would probably quit politics sooner than concede that nuclear may in the end be the lesser of two evils.

"In order for a democracy to function well, the public needs to be honestly informed," writes Hansen. There is plenty to argue with over many of the opinions expressed in *Storms*, but unlike some other books aimed at the general public, the author never plays fast and loose with the science itself.

Anyone concerned about the world our children and grandchildren must inherit owes it to themselves to read this book. As industrialist Frank Garbutt put it: "The man who questions opinion is wise; the man who quarrels with facts is a fool."

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