



Figure 1 | EU allowances trading for the last quarter show a price spike following the tsunami and earthquake that hit the northeast coast of Japan on 11 March 2011.

their future hangs in the balance, German utilities have been left to hungrily purchase fossil fuels as well as contracts to offset the carbon that they would release.

In all, “the tsunami sent the price of carbon from about 14.5 euros per tonne to 17.7 euros,” says Henry Derwent, CEO and president of the International Emissions Trading Association (IETA) (Fig. 1). “That’s a very significant uptick against a background of two years of very stable markets.” Furthermore, it comes at a critical time for the Emissions Trading Scheme (ETS), which is simultaneously trying to develop Europe-wide emissions targets for its third phase (from 2013 to 2020), and recover its reputation following a cyber attack in January, which saw 3.4 million allowances stolen.

In time, however, a high carbon price will make nuclear power more economically appealing and the political mood is likely to soften. Charles Forsberg, Executive Director of MIT’s Nuclear Fuel Cycle Study, reckons that Fukushima Daiichi, which was designed for an earthquake ten times less powerful and for a two-storey rather than a three-storey tsunami, stood up well to what nature threw at it. “I think we’re going to see a switch towards ‘dry cask’ storage [as opposed to underwater storage of spent fuel rods], where you don’t have to worry about earthquakes — and tsunami water would just wash over them,” he says.

Others argue that Japan has shifted the nuclear risk analysis to include thousand-year events. That would alter the power generation map dramatically. In Britain, there is evidence of a tsunami that was funnelled down the Bristol Channel in 1607, reaching a height of five to six metres at a nuclear power station called Hinkley

Point, points out Simon Haslett⁴ of the University of Wales in Cardiff. He thinks that other big tsunamis have hit Scotland and even Cumbria, where the Sellafield nuclear plant is located. “Any nuclear power station on a coastline is vulnerable to a tsunami,” argues Haslett. “It just depends on the frequency and magnitude when it arrives.” □

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blogosphere

Noise about nuclear

The aftermath of Fukushima.

Following last month’s disaster at the Fukushima Daiichi nuclear power plant in northern Japan, the blogosphere is brimming with opinion on whether nuclear energy should be considered a safe and sustainable alternative to fossil fuels.

The incident has largely cooled political support for nuclear power. In early April, Germany became the first country to shut seven of its oldest nuclear plants, and Europe committed to testing all 143 reactors in its 27 member states. China, a nation that accounts for 40% of planned new reactors globally, has decided to halt new projects in a move that could last until 2012.

Over on Carbon Commentary (<http://go.nature.com/bSEUb2>), Chris Goodall and Mark Lynas offer a reasoned, and rather detailed, perspective on why the whip-lash response to the Fukushima disaster may be short-sighted in the long run. They argue that in addition to being the only non-carbon source of reliable baseload power, nuclear has a pretty good track record, relative to coal, especially when deaths from mining and air pollution are taken into account. These arguments aren’t new, but they are perhaps worth reiterating in the current climate. More interesting, however, is the historical perspective provided by Goodall and Lynas, who give a breakdown of the available evidence on the risks of exposure to different types and levels of radiation.

On Climate Progress (<http://go.nature.com/9MxZkr>), Joe Romm takes Lynas to task over a piece he has penned, in the same vein, for the *Los Angeles Times* (<http://go.nature.com/aU7gcN>). The majority of the post is devoted to picking out errors in Lynas’s piece, but the top line from Romm is that you can’t consider nuclear power without the bottom line. That’s the reason why, says Romm, the US nuclear renaissance died before the Japan disaster.

Now that Japan has upgraded the severity of the accident to a ‘level 7’ on the International Atomic Energy Agency’s scale — equal to the 1986 accident at Chernobyl — the debate about the future of nuclear power is only likely to continue.

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