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What future for the nuclear industry?

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The tragic events at the Fukushima Daiichi nuclear plant constitute the worst nuclear disaster in more than two decades. Whilst the human cost is of paramount importance and rightly dominates the headlines there will also be significant implications for the future of the world wide nuclear industry, which suffered a 20 year decline after the partial core meltdown at Three Mile Island and the disaster at Chernobyl. Both events reinforced the negative public perception toward nuclear power that had emerged over the course of the 1970s.

The result was that the number of reactors coming online from the mid 1980s little more than matched retirements. During the period 1986–2005 there were only 71 new nuclear plants constructed. In the preceding 20 year period there had been 436 new nuclear plants.

Opinion polls throughout Europe captured the impact Chernobyl had on public attitudes toward nuclear power. Even in Finland, a country with relatively higher levels of public support for nuclear power, the amount of people who wanted to phase out nuclear power after Chernobyl increased from 21.3% in 1983 to 34.5% in 1986. In the UK a de facto moratorium on new nuclear build was declared in 1989, pending a five year review. This was primarily driven by the proposed privatisation of the electricity industry (a 1988 white paper expressed concerns about costs of nuclear), but perceptions of the industry's safety also played a significant role. Nuclear power became increasingly framed in terms of its risks rather than its benefits.

In the 21st century several factors have combined to revive the prospects for nuclear power. First is the realisation of the scale of projected increased in demand for electricity worldwide, but particularly in rapidly developing countries for which nuclear is increasingly seen as part of the solution. Secondly, there is a raised awareness of the importance of energy security and thirdly, the urgent need to encourage low carbon energy generation technologies to mitigate the threat of dangerous climate change. Over the last decade, the increasing arguments for nuclear and the pace of new orders for nuclear reactors has led to talk of a 'nuclear renaissance'.

Books such as Preparing the Ground for Renewal of Nuclear Power reflected the growing confidence of the nuclear industry. A raft of government-sponsored studies such as 'Options for a Low Carbon Future' reinforced the march of nuclear, one prominent report arguing that:
'The present study has confirmed the Royal Commission on Environmental Pollution (RCEP) conclusion that the replacement of the current nuclear power stations by new nuclear stations and an expansion of nuclear power could help the UK reduce its CO_2 emissions by 60% or more by 2050.'

As a result of these debates we have witnessed a change in the nature of the public discourse around nuclear power over the past decade. Those factors which previously led people to reject nuclear power (costs, waste disposal, accidents, proliferation concerns etc.) are being discounted because of the way in which nuclear power has been reframed and repackaged as a solution to climate change and energy security, and to meet the increasing demand for electricity in developing countries – all of which is reflected in the more positive public attitudes toward nuclear power reflected in opinion polls.
Surveys conducted in the UK in 2005 and 2006 (YouGov), found that 35% and 40% of the respondents, respectively, were in favour of new nuclear. This rose to 62% and 68% if nuclear new-build was coupled with a concerted policy of promoting renewables. The latest opinion poll in the UK shows the highest level of public support for nuclear power in over a decade, with 40% of people favourable to nuclear (up seven points from 2009), while 17% are unfavourable (down three points). In 2008, 43% of Finns supported new nuclear build, while 25% wanted to phase out nuclear. Public support, as monitored by the Eurobarometer polls, suggests that in 8 out of 25 countries of the EU there is a majority in favour of nuclear power.

Before the events in Japan the nuclear industry faced significant challenges including the cost of new reactor builds and the shortage of skilled workers. Now its greatest challenge may be one of public perception. However, nuclear is an industry that has been seriously affected in the past by negative public perceptions and has recovered. The question now is, will it recover again or does this mark the end of the nuclear renaissance?

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