

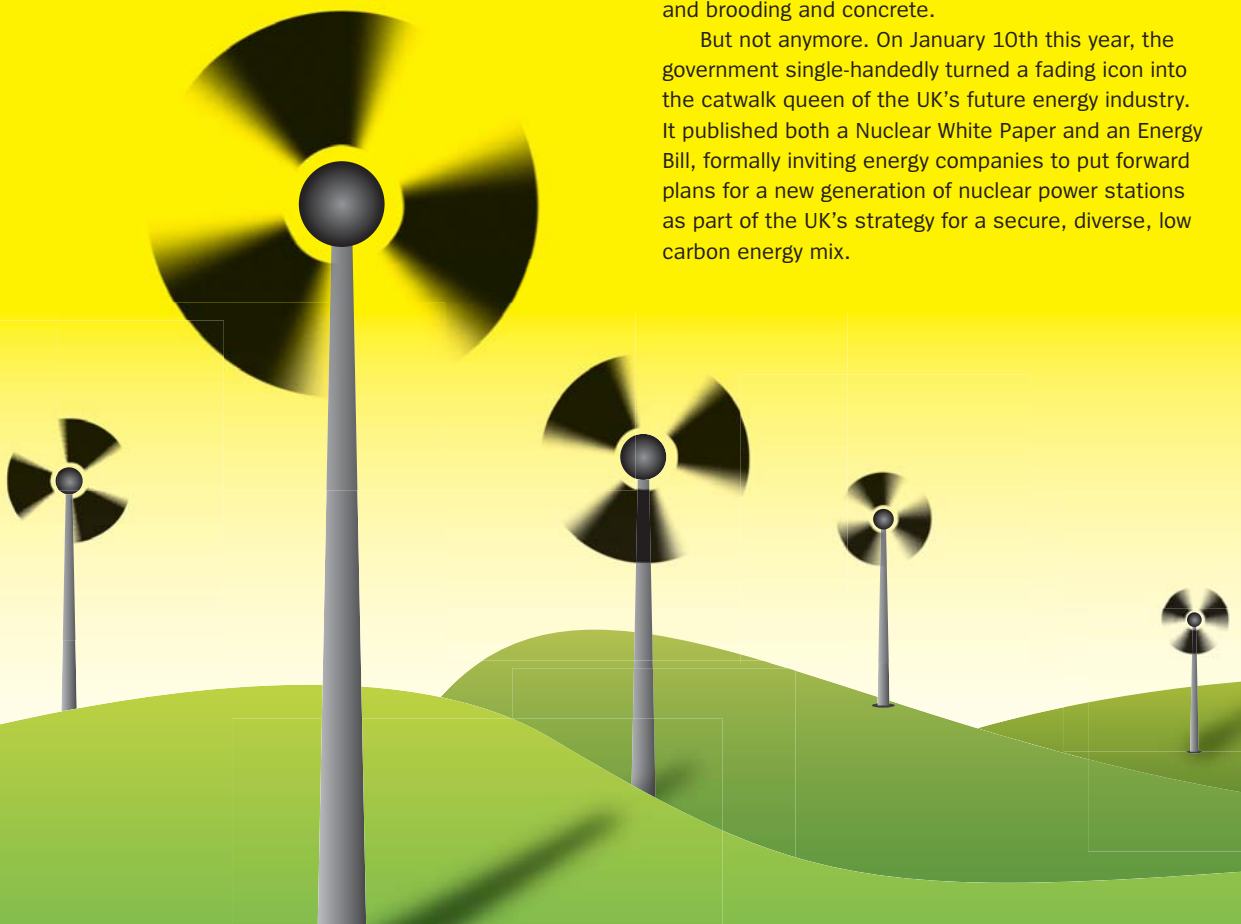
The government's backing for 'new nuclear' has stoked the fires of a difficult and contentious debate that has witnessed some very unexpected opinions. But with over a third of the UK's nuclear energy industry based in the Northwest, the region's experts are worth listening to.

SPLITTING

Words Gareth Chadwick

You used to know where you were with nuclear power. It was generally regarded – apart from within the industry itself – as a bit old hat. Huge, ominous nuclear reactors squatting around the remote edges of our coastline, legacies from the 1960s and 1970s that were quietly running themselves into history. The future was green and bright and modern and new, not grey and dull and brooding and concrete.

But not anymore. On January 10th this year, the government single-handedly turned a fading icon into the catwalk queen of the UK's future energy industry. It published both a Nuclear White Paper and an Energy Bill, formally inviting energy companies to put forward plans for a new generation of nuclear power stations as part of the UK's strategy for a secure, diverse, low carbon energy mix.



“The nuclear option is asking us to buy a second-hand solution that will not redefine how energy is produced. We need to be bolder.”

THE ATOM

On launching the policy, John Hutton, the energy secretary, said that “giving the go-ahead today that new nuclear power should play a role in providing the UK with clean, secure and affordable energy is in our country’s vital long term interest.”

There is a broad consensus that some sort of radical new strategy is required to develop the UK’s energy supply mix. Three powerful issues are converging. Firstly, around 20 per cent of our electricity currently comes from nuclear power plants, but most are nearing the end of their operational life. As they are decommissioned, the resulting ‘energy gap’ needs to be plugged. Another growing factor is energy security, particularly in light of recent gas supply problems in Eastern Europe and the UK’s rapidly cooling diplomatic relations with Russia, home to the world’s largest gas reserves. All this at a time when the UK has switched massively to gas fired power stations. Thirdly, there is the need to cut carbon emissions to combat climate change and meet our national and international commitments.

But there the consensus ends. To some, the government’s decision – not altogether unexpected, but certainly controversial – is a bold step towards this safe, secure, carbon-free future. To others, it is a misguided step backwards and a stab-in-the-back for the country’s renewable energy sector.

According to supporters of the nuclear option, the main benefits of nuclear power are that it is:

Low-carbon
minimising damaging climate change

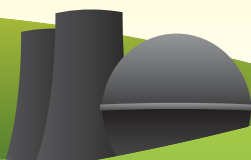
Affordable
currently one of the cheapest forms of low-carbon electricity generation

Dependable
a proven technology, currently supplying a fifth of our electricity

Safe
backed up by a highly effective regulatory framework

Secure
increases the diversity of our energy mix, reducing our dependence on any one technology or country for our energy.

Continued over



Undoubtedly, building a new nuclear plant on an existing nuclear site seems a relatively straightforward solution. It's a tried and tested technology, and at least while the plant is actually running, it is relatively cheap and more carbon friendly than traditional coal or gas fired power stations. It also means we aren't relying on precarious fossil fuel supply chains. And this time round the government won't be paying for nuclear power stations – instead, it is inviting private sector power companies to build them.

These arguments have some influential supporters, including, rather incongruously, Dr James Lovelock, one of the country's foremost environmentalists and the internationally renowned creator of the 'Gaia hypotheses', which views the earth as one single organism. In a speech to the International Conference in Paris in 2005, Lovelock declared: "Now that we've made the earth sick it won't be cured by alternative green remedies like wind turbines or biofuels, and this is why I recommend the appropriate medicine of nuclear energy

as a part of a sensible portfolio of energy sources."

But those against nuclear power are equally forceful in their reasons for opposition. And in putting its weight behind a new generation of nuclear power stations, the government effectively ignored the widespread uneasiness towards nuclear power among many independent energy experts, not to mention environmental organisations.

In its 2006 paper, *The Role of Nuclear Power in a Low Carbon Economy*, the Sustainable Development Commission (SDC), the government-funded independent watchdog on sustainable development, concluded that there was "no justification for bringing forward plans for a new nuclear power programme at this time, and that any such proposal would be incompatible with the government's own sustainable development strategy." It's a

conclusion which Professor Tim Jackson, the SDC's economics commissioner, vehemently reiterated following the government's announcement of its nuclear strategy in January.

Those against nuclear power argue that the inherent risks, costs and time needed to actually build just one new nuclear power station make it a disastrous solution to our energy problem.

Central to the risks is the question of what actually happens to the nuclear waste that is created. The government's only answer so far seems to be to rely on interim storage until it can come up with something better, whenever that may be.

The climate change expert...

Dr Kevin Anderson, research director at the Tyndall Centre for Climate Change in Manchester:

"Personally, I'm ambivalent about whether nuclear power remains a major source of electricity generation within the UK. However, despite my ambivalence over nuclear power per se, I'm disturbed by the abysmal level of much of the debate – informed as it so often is by prejudice and ignorance.

The arguments commonly voiced by many of the antagonists are dangerously simplistic and highly misleading in terms of policy. For example, given that nuclear power provides only 3.6 per cent of our final energy consumption, the argument that the UK cannot meet its carbon dioxide targets without building a new generation of nuclear stations to replace the existing and aging generation is evidently wrong.

Similarly, the argument that nuclear power is too costly, does not take into account the security costs associated with attempting to maintain fossil fuel supplies from what are often perceived to be unstable regions of the world. How much, for example, have the UK's forays into Afghanistan and Iraq cost the taxpayer? Until such costs are factored into the analysis, economic comparisons between fossil fuels and nuclear are essentially meaningless."

The nuclear scientist...

Dr Paul Howarth, director of research at the Dalton Nuclear Institute, Manchester University:

"The Northwest is the spiritual home of the nuclear industry in the UK. The 'suits and boots' are all here: the regulators, the fuel fabricators, the enrichers, the waste management companies, most of the engineering support companies. The main sites are Heysham for generating; Sellafield for fuel reprocessing, waste management and, formerly, generation; enrichment at Capenhurst in Chester; and academia, not least ourselves at Manchester University.

For that reason, I don't think it necessarily matters if the Northwest gets a reactor. When Sizewell B was built, the engineering procurement team was based at Knutsford in Cheshire. It's very possible that we might see a repeat of that, that the engineering procurement, the design team, other high value jobs, are based here in the Northwest, even though construction is elsewhere.

As far as potential sites in the region, Heysham is a possibility and, in the longer term, Sellafield, too. There are certainly some attractions to Sellafield. For example, you could utilise the plutonium stockpile that is already there in the MOX burning reactors, avoiding the need to transport plutonium fuel around the country. The main issue to resolve, however, would be actually connecting Sellafield to the main super grid, because there isn't a connection currently."



The sheer length of time needed to get new nuclear power on-stream is also problematic. According to the government's own estimates, it will be around 2020 before the first nuclear power plant comes on line, making it largely irrelevant as a short term solution to the energy gap – which is expected to peak around 2017. Opponents also point out the massive costs of construction and, especially, decommissioning – the bill for safely retiring the current fleet of nuclear power plants has already risen to £73 billion.

The carbon efficiency of nuclear power has been questioned by several leading environmental organisations, which argue that if you factor in the emissions that result from actually procuring and building a nuclear power station, it is barely more carbon-friendly than gas. Finally, and perhaps most vociferously, opponents fear that a renewed focus on nuclear power will divert money and attention from the real priorities – reducing demand and switching to renewable energy.

The sustainable development expert...

Becky Willis, Cumbria-based independent researcher and vice-chair of the Sustainable Development Commission:

"There are two ways to reduce the energy gap, one is by increasing supply, the other is by reducing demand; by using energy more efficiently. Reducing demand would be tough, requiring the kind of effort and investment that we haven't yet seen, but it is possible.

You need an element of educating and persuading people and businesses at a personal level to be more energy efficient. A good example is the policy that stipulates that by 2016 all new-build houses have to be carbon-neutral. Policies like that can make a significant difference. But it's not just a question of exhortation. The kind of thing that would have a huge impact is if there was a real overhaul of the tax system and the energy effects of the tax system. If you introduced a policy that stipulated that the more energy efficient you are, the less tax you pay, not only would it encourage people to get their loft insulated, but it would also stimulate the market as a whole. It would require a Herculean effort, but its going to require a Herculean effort to get new nuclear power stations up and running. So it's not a choice between the easy option and the hard option. There are only hard options."

The economic development agency...

Simon Sjenitzer, strategy director, Cumbria Vision:

"Cumbria has a huge stake in the nuclear issue. Around 36 per cent of the country's nuclear industry is based here. It's something that our communities, particularly in the west of the region, are reliant on and have built up strong links with over the past fifty years. To them, the nuclear industry means jobs, and well paid ones at that.

But nuclear is a global industry, and if there isn't the industry in this country to support those jobs, then they will go elsewhere – the United States, France, the Far East. That's one of the problems we face. We've done well in broadening our expertise away from just generation, with things like the Nuclear Academy bringing skills and training and the Nuclear Decommissioning Authority, but it's still a worry. If there's not going to be a new build nuclear power plant in this area – and Cumbria isn't currently on the list of potential first round locations – then people start looking elsewhere.

We're definitely signed up to nuclear though, as long as certain caveats are addressed. Perhaps the main one is what do we do with the waste? The government has got to make a proper, long term decision on that before we start firing these things up again."



These arguments obviously have a huge impact on the whole country, but they have a particular pertinence to the Northwest, which is the main centre of the country's nuclear industry. In West Cumbria, in particular, the nuclear industry is the lynchpin of the local economy, the source of thousands of jobs. In Lancashire, too, it plays a hugely significant economic role. More broadly speaking, the Northwest prides itself on being the only region with expertise in the whole nuclear lifecycle, from uranium enrichment, through power generation, to decommissioning, including internationally renowned academic expertise in the region's universities.

One of the only certainties in the whole nuclear debate is that there is no definitive right or wrong answer. The issues, perhaps, are too complex to produce clear black or white solutions. *Source* spoke to some of the leading stakeholders from both sides of the nuclear debate here in the Northwest to ask what new nuclear will mean for the UK's energy sector, and for the region.

Gareth Chadwick is a Manchester-based freelance journalist with a special interest in environmental and ethical issues.

The concerned activist...

Steve Connor, chief executive of Manchester based 'green' marketing and communications agency Creative Concern:

"I don't think nuclear power is the answer to the energy gap, not least because it won't come on line until it is too late. Instead, we should be making a genuine, sustained and radical investment in renewable energy. Let's really go for it, let's invest in marine, tidal and wind power and get the energy mix of our renewables up from the slightly embarrassing single digit percentage points that we have got at the moment, to the kind of thing you can see in Scandinavia. In Denmark, for example, they are up to 25 to 30 per cent of the energy mix.

It's perfectly possible to plug the energy gap with renewables. If you look at wind power alone, there are enough wind energy projects either in planning, at proposal stage or held up by the crazy planning system that we have got, to plug that gap, and that's without even looking at some of the other renewable technologies. It is perfectly achievable; we just have to take that step. When we led the world into the industrial revolution, largely through the use of steam, we were an energy innovator. The nuclear option is asking us to buy a second-hand solution that will not redefine how energy is produced. We need to be bolder."

MORE INFORMATION

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<http://nuclearpower2007.direct.gov.uk/docs/WhitePaper.pdf>
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