Nuclear Power: Dying asset or future ESG star?

Nuclear energy has an image problem. For many, any mention of nuclear conjures images of mushroom clouds, or perhaps the wrecked remnants of the infamous Chernobyl reactor number 4. Such preconceptions have led many fund managers to exclude nuclear energy from their ESG portfolios. However, as intermittent renewables provide an increasingly large share of the global energy supply, so the need for low carbon, base-load power increases. So, is now the time for climate conscious investors to take another look at nuclear?

Misguided preconceptions?

Opponents of nuclear power are quick to point out major incidents such as Chernobyl and the 2011 Fukushima disaster. Both led to mass evacuations and billions spent on cleanup operations that continue to this day. But hidden behind these hard-hitting headlines is a somewhat surprising fact – nuclear power remains one of the safest forms of energy production. Fossil fuels have been the mainstay of global power generation since the Industrial Revolution, but they are also responsible for millions of deaths as a result of air pollution, accidents during extraction and transportation, and climate change. Even assuming an upper estimate of 4,000 deaths attributed to Chernobyl – and that's not to say that a single death is acceptable - nuclear results in a 99.7% reduction in deaths per terawatt hour (TWh) relative to gas, the 'cleanest' fossil fuel. Consider other, more conservative estimates of the death toll from Chernobyl (including a more recent estimate from the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)), and the death rate per TWh is comparable to that of solar and wind.

Low carbon, high cost

Fission – the process by which heat is generated in a nuclear reactor – is inherently carbon free. That's not to say the entire process is carbon neutral. The construction of nuclear facilities, extraction and refinement of uranium fuel and disposal of waste all demand energy. Even so, the carbon intensity of nuclear is roughly equivalent to that of solar and wind, and far below that of natural gas.

So far so good, but nuclear power comes with significant expense. Take Hinkley Point C, the UK's flagship next generation nuclear reactor, which is being built by French energy giant, EDF. Initially priced at €20 billion, costs have since risen to at least €25 billion, and the project is almost a decade behind schedule. Then there is the cost of electricity produced. The UK government has promised EDF a fixed price of £92.50 per megawatt hour (MWh) for electricity produced at Hinkley Point C. Compare that with an estimated cost of £40-50 per MWh for new offshore wind installations, and nuclear looks like an expensive bet.

Cost aside, the other prominent issue is that of waste disposal. In this context, waste refers to radioactive decay products formed during the fission process that cannot be recycled. Some of these high level (most radioactive) products will continue to emit lethal quantities of radiation for 1,000's to 10,000's of years and therefore require safe, long-term storage. The problem is: what defines 'safe'? The majority of the UK's radioactive waste is currently stored at Sellafield. This remote stretch of Cumbrian coastline currently holds over 6,000 metal containers of vitrified (set in glass) high level waste, but these will eventually degrade. Add to that the limited capacity – the existing

facility can only hold 8,000 containers in total – and the need for a new long-term strategy is obvious. Geological disposal, the process of burying radioactive waste deep underground, is the current frontrunner, but has been met by intense political and social opposition. As the debate continues, so the total mass of waste continues to grow.

Mixed messages for investors

Nuclear power remains a controversial topic, both in public opinion and the world of responsible investment. If nuclear is to feature more heavily in the ESG 'investable universe', the UK government must provide more robust backing for the industry as a low-carbon alternative to fossil fuels. The current message is far from clear. Despite stating that 'nuclear power is, and will continue to be, a key part of the UK's low-carbon energy mix', nuclear infrastructure has been excluded as a beneficiary of the upcoming inaugural tranche of green gilts. While the safety concerns associated with nuclear tend to be overplayed, high costs are very real. Government assured fixed price commitments significantly higher than those available from renewable sources risk an avoidable increase in energy bills for UK families. Finally, the issue of radioactive waste storage needs to be addressed. One of the central pillars of the ESG philosophy is to invest in companies that promote a sustainable future. In the absence of a safe, long-term storage solution, nuclear power is unlikely to qualify. With this is mind, Whitechurch does not currently see nuclear as a viable asset for its ethical portfolios – despite the low-carbon credentials.

For information on Whitechurch Securities Ltd Sustainable Investments, please visit our website www.whitechurch.co.uk or contact a member of our Business Development Team on:
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