

Net Zero Without Nuclear

AN ANALYSIS BY JONATHON PORRITT

The case against using nuclear power to achieve a net zero carbon economy

The case against nuclear power is stronger than ever. So is the pro-nuclear propaganda. Advocates for nuclear power insist it's an essential tool in the race to Net Zero. Nothing could be further from the truth. This is an industry dominated by its rear view mirror.

Promises, promises

- ▶ There is little in the realm of "new" nuclear plants that is genuinely new. Small modular reactors have been deployed in nuclear submarines for 65 years but, as a commercial reactor prospect, remain on the drawing board.
- ▶ Fusion is also back in the mix, but is a recycled nuclear illusion based on unsubstantiated claims first minted in the 1970s and would prejudice prospects of a Net Zero carbon economy.

Costs

- ▶ Cost estimates per megawatt hour of electricity produced show large-scale solar as the cheapest and falling, and nuclear power as the most expensive and rising. There is no legitimate economic argument for nuclear power.
- ▶ Nuclear power is ludicrously uncompetitive due to its high construction costs, and depends on subsidies, meaning higher electricity rates for consumers.

Carbon reductions

- ▶ Given their long construction times, the carbon payback period of new reactors (the time it will take to displace the CO₂ emissions from their construction) mean they would make only a marginal contribution to national targets of Net Zero.

Radiation damage

- ▶ A 2008 report from Germany revealed a 60% increase in childhood cancers and a 120% increase in leukemia amongst children living within five kilometers of the country's 16 nuclear power plants. Many other studies have since supported these findings.

Not carbon-free

- ▶ It is misleading to argue that renewables and nuclear are equivalently low-carbon, and even more misleading to describe nuclear energy as zero-carbon. Taking into account the full life cycle of nuclear, emissions from nuclear power are between 10-18 times greater than emissions from renewable energy technologies.

The energy efficiency pathway

- ▶ It is essential to put energy efficiency at the heart of a Net Zero goal. The lower the total amount of energy required, the easier it becomes to meet that demand. Energy efficiency is also a far bigger employer than nuclear.

Wind and solar energy

- ▶ Offshore wind could theoretically provide enough electricity to meet total global electricity demand while large-scale solar is predicted to become the cheapest generating technology by 2025.

Storage

- ▶ The impact of batteries on the environment is cause for deep concern and other alternatives can be explored including pumped storage from hydroelectric schemes and plug-in vehicles serving as a form of distributed energy storage.

Waste

- ▶ The costs of nuclear waste management must also be factored into the overall price of retaining nuclear power. Managing this waste will cost billions.

Decommissioning

- ▶ Decommissioning is another hidden cost of the nuclear fuel chain, a burden shouldered by taxpayers for a process that can take from 85 to 120 years.

'Always on' is not an advantage

- ▶ Large-scale nuclear power plants entrench more costly, inflexible distribution systems. The baseload system is largely redundant and power system flexibility the new priority. Nuclear belongs to the former and renewables to the latter.

Climate change risks

- ▶ Rising sea levels, storm surges, ever-worsening coastal erosion and flooding, extreme heat and droughts all put nuclear power plants at increasing risk. Far from nuclear power solving climate change, climate change could be its worst nightmare.

A just transition

- ▶ Every kilowatt-hour of new nuclear-generated electricity delivered to consumers will be a more expensive kilowatt-hour than a kilowatt-hour delivered from renewables plus storage. This will hurt those living in fuel poverty the most.

Tell the truth

- ▶ Many NGOs calling for the inclusion of nuclear energy in climate policy are a front for the industry. Some even deny the urgency and severity of climate change.

Jonathon Porritt is a member of the Green Party, former Chair of the UK Sustainable Development Commission, author and campaigner. His full report, 'Net Zero Without Nuclear: The case against nuclear power', can be found here : <http://www.jonathonporritt.com/net-zero-without-nuclear-the-case-against-nuclear-power/>



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