

Nuclear not the answer on climate

A Friends of the Earth Scotland briefing

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**Friends of
the Earth
Scotland**

Summary

Nuclear power has long been in decline in Scotland with only one site remaining operational. With growing awareness and urgency around the climate crisis the nuclear industry has tried to present itself as a low carbon alternative to fossil fuels. This position is misguided as nuclear energy is cost inefficient, too slow to build, dangerous and non-renewable.

- Nuclear power is not needed in Scotland as we have an abundance of renewable energy sources.
- Nuclear power is not cost efficient, being more expensive to build and with more expensive electricity generation costs than wind or solar.
- Nuclear power is not renewable as it needs nuclear fuel and produces harmful radioactive waste.
- Radioactive waste will be dangerous and a burden on future generations for thousands of years, presenting a gross intergenerational injustice.
- It's too late for nuclear, nuclear construction takes too long and we need to take radical action to tackle the climate crisis with safe, energy efficient technology now, and plan for a just transition for the nuclear industry with the workforce.

Overview

Since 2007 the Scottish Government has opposed new nuclear power stations being built in Scotland. As a result, there remains only one operational nuclear power site in Scotland, the two ageing reactors at Torness in East Lothian, which are due to close in 2028 because of cracking in their cores.

With the ongoing climate crisis there have been some calls from different parts of the political spectrum for a reinvestment in nuclear energy. Some view nuclear energy as a means to meet our energy goals without relying on fossil fuels.

Friends of the Earth Scotland strongly opposes any new nuclear developments for a variety of reasons which will be explained throughout this briefing.

Nuclear power is not renewable

The production of nuclear energy does not directly produce greenhouse gases, which leads many to champion it as a 'low-carbon' energy source.

However, while nuclear may not produce greenhouse gases directly, there are

significant greenhouse gas emissions in the construction of nuclear plants and the mining and refining of nuclear fuel. It is not a renewable energy source, like wind, solar or tidal power. Nuclear power **produces harmful and dangerous radioactive waste.**

The harmful effects of radioactive waste are well known and documented. However what is often overlooked is the vast amount of time human society would need to guard radioactive waste. Depending on the type, **radioactive waste can be harmful from 25,000 - 200,000 years.**¹

If early humans in 40,000 BC had been able to build nuclear reactors we would still be guarding their waste to this day. **Creating ever more nuclear waste is a gross injustice to future generations.**

Nuclear power is not needed

At the heart of this argument is the fact that nuclear power is not needed.

Scotland has an abundance of renewable energy available to it. With wind and tidal

¹<https://www.oneearth.org/the-7-reasons-why-nuclear-energy-is-not-the-answer-to-solve-climate-change/>

power. **Renewables produced the equivalent of 98.6% of Scotland's electricity consumption in 2020, mostly from wind.**²

While Scotland does need to quickly shift away from fossil fuels and take radical action to meet its climate goals, pressing the Scottish Government to invest in more wind and tidal power would be a more effective means of producing energy that is truly low carbon and renewable.

Nuclear power is not cost efficient

Nuclear power stations are incredibly expensive to build, Hinkley Point C has been delayed numerous times and its projected costs continue to rise. In January the project was pushed back a further six months and its estimated costs **increased by another £500m.**

Furthermore, once the plants are finally up and running the production of electricity is far from cost effective.

According to the World Nuclear Industry Status Report the cost of generating solar power ranges from \$36 to \$44 per megawatt hour (MWh), while onshore wind power comes in at \$29–\$56 per MWh. Meanwhile, **nuclear energy costs between \$112 and \$189.**³

Over the past decade, the WNISR estimates levelised costs - which compare the total lifetime cost of building and running a plant to lifetime output - for utility-scale solar have dropped by 88% and for wind by 69%. For nuclear energy however they have **increased by 23%.**³

It's too late for new nuclear

The climate crisis is with us already. We need to take urgent and radical action to address this. Nuclear energy sites take far too long to get up and running to adequately address the climate crisis.

²<https://www.bbc.co.uk/news/uk-scotland-59837782>

³<https://www.reuters.com/article/us-energy-nuclearpower-idUSKBN1W909J>

Since 2009 the average construction time for reactors worldwide was just under **10 years, well above the estimate given by industry body the World Nuclear Association (WNA) of between 5 and 8.5 years.**³

Wind, solar and tidal energy are proven means of creating low carbon, truly renewable energy that Scotland already has the capacity and infrastructure to handle. **To adequately address this ongoing and immediate crisis we cannot afford to wait around.**

Nuclear power is dangerous

To date, **1.5 percent of all nuclear power plants ever built have melted down to some degree.** Meltdowns have been either catastrophic (Chernobyl, Russia in 1986; three reactors at Fukushima Dai-ichi, Japan in 2011) or damaging (Three-Mile Island, Pennsylvania in 1979; Saint-Laurent, France in 1980).

While the chances of disaster are low the potential impact is much higher than with other forms of energy production. When something goes wrong with nuclear energy it goes very wrong. Building new nuclear capacity burdens future generations and future governments with the costs of maintaining and safeguarding costly and dangerous nuclear energy sites.

Conclusion

Nuclear power is too expensive and too late to help with the climate crisis. Scotland has an abundance of renewable energy potential and should invest time and money in the development of this sector, and plan for a just transition away from the nuclear industry with the workforce.

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