# Safest, cleanest option for energy security is nuclear

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Eleven years after the Fukushima disaster, nuclear energy is making a comeback in Japan. To mitigate possible electricity shortages in Japan's winter, Prime Minister Fumio Kishida has pledged to have nine nuclear reactors up and running by the end of the year. It's an ambitious target and may not be reached. But it is not as ambitious as that of Japan's closest neighbour. China is planning on building 150 nuclear reactors over the next 15 years. That's 10 new reactors a year, on average, at a projected cost of $636bn.

Changing geopolitical realities have forced nations to make tough decisions about their energy security. Energy security has always been paramount to national security, but since Russia's invasion of Ukraine this relationship has become more stark.

During the past four decades, countries have taken a range of approaches to energy security.

Some countries' decisions, made decades ago, are paying off in prosperity and security dividends, while other countries are suffering losses from their bad investments.

The German strategy of going all-in on renewables, shutting down coal and nuclear plants, then relying on Russian gas for backup has been shown to be a catastrophic failure.

Not only has Germany's policy sent electricity prices sky high – contributing to inflation and declining standards of living – it has made the country vulnerable to Russia's manipulation. Its policy of relying on Russian gas has funded Russia's war machine, which is targeting women and children in Ukraine. Yet the ultimate salt in the wound is the fact, despite Germany's dogmatic focus on scaling up renewables, its greenhouse gas emissions still remain more than double that of their closest neighbour, France.

In 1974, following the 1973 oil crisis, French prime minister Pierre Messmer decided all France's electricity should come from nuclear. This was a stroke of genius. Since the 1980s, France has flattened its

greenhouse gas emissions while becoming the largest net exporter of power due to its low cost of generation. While other nations are telling their citizens to ration energy in winter, France exports electricity to the tune of $4.4bn a year.

One of the most perplexing aspects of Australia's climate policy debate is the dismissive attitude towards nuclear energy of those who are most alarmed about climate change. Nuclear energy has the potential to slash emissions, but also power an advanced economy that is strategically secure.

There are, of course, legitimate risk management concerns that need to be dealt with carefully and intelligently. Nobody who advocates for nuclear energy denies this. And nuclear reactors are not cheap. They come at a significant cost and require public investment.

Nevertheless, the reflexive dismissal of nuclear energy in a country that is home to 33 per cent of the world's uranium (the world's largest repository) reflects an ignorant parochialism that will need to be rectified if we are going to thrive in the 21st century.

Opposition to nuclear energy in Australia is based on three key arguments. The first is that nu- clear plants are too expensive and take too long to build; second, that nuclear waste is radioactive and therefore bad for the environment and citizens' health; and third, that nuclear energy is not truly renewable.

Each of these claims rests on flimsy reasoning.

While it is true building nuclear plants can be extremely expensive, a 2015 study by two French economists that examined past nuclear construction in France and the US found costs can be controlled by building the same design with the same team repeatedly. This method of scaling up using the same designs and the same teams is what the US and France have done in the past, and is what China and Japan plan on doing in the future. The argument that Australia cannot do what our neighbours are doing becomes an implicit argument for our technical and managerial inferiority.

The second reason – that nuclear plants pose a risk to health and the environment – also does not stand up to scrutiny. Since the 1950s, the US has received about 20 per cent of its electricity from nuclear. The entire volume of waste this has produced could fit in a single football field to a depth of less than 10m, according to a US government website. Only a tiny percentage of that spent fuel is actually toxic, and it is stored in steel-lined concrete pools of water or in steel and concrete containers.

Of course accidents can happen, and contingency plans must be made for worst-case scenarios.

Yet keep in mind that France has not yet had a serious accident that has caused significant environmental or health damage. The burning of fossil fuels is estimated to kill a million people a year from air pollution, whereas the combined loss of life from Chernobyl, Fukushima and Three Mile Island is 32 people. This has led environmental researchers to conclude nuclear power is the safest way to make reliable electricity.

The third argument, that nuclear power is not renewable, is simply false. France has been recycling spent nuclear fuel for decades.

Seventeen per cent of France's electricity comes from recycled nuclear fuel.

Tanya Plibersek this week told the National Press Club in relation to climate change: "If we continue on the trajectory we are on, the precious places, landscapes, animals and plants that we think of when we think of home, may not be here for our kids and grandkids."

In light of this, a smart country would invest in the safest and most reliable clean energy known to man. The models already exist.

We just have to look to our allies of France, Japan, and the US for guidance. While some will argue that it is too late, we should keep in mind the wisdom of an ancient Chinese proverb: "The best time to plant a tree was 20 years ago.

The second best time is now."