

# Power Generation: Nuclear power is making a resurgence, new technology is coming

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## Abstracts

Power Generation: Nuclear power is making a resurgence, new technology is coming

### SUMMARY

The nuclear power market has had a difficult decade, accidents, massive costs and environmental damage have all contributed to multiple countries losing their interest in the technology and deciding to moth ball their old plants. Nuclear power perhaps more than any other energy source has to combat public perceptions of its technology and despite what are generally, excellent power industry safety records, the accidents that have happened have been nothing less than catastrophic. The nature of nuclear technology, zero emissions and its potential to be further developed through new types of reactors will always make it an attractive prospect for countries and despite calamities such as that in Fukushima, the power source is rebounding.

### KEY HIGHLIGHTS

Nuclear energy has always been a controversial topic, because of its connections to the weaponized version of the technology and the potential for disasters. The world has seen a number of close calls since the technology began to spread, ranging from the Three Mile Island meltdown to the fire at Windscale, but of the significant disasters two stand out above the rest which are Chernobyl and Fukushima. Critics of the technology point to the fact that these two sites will continue to cost billions of dollars for potentially hundreds of years as they are made safe.

The key driver here for nuclear technology is undoubtedly emissions targets,

countries want to reduce their reliance on fossil fuel technologies, keep their commitments to emissions targets, but also maintain the same on demand electricity supply that they had previously. There is an argument that renewable energy is bridging that gap in 2018 with energy storage technology, but many countries see nuclear as essential regardless.

Most of the main concerns about nuclear technology stem from the current form which is being deployed, that which is uranium based. The primary concerns are the risk of a nuclear disaster as has been seen at Fukushima, the dilemma of what to do with radioactive material from the reactors and the staggering long-term cost of decommissioning nuclear power plants. However, one of the key positives that nuclear generation has on its side is the wide range of potential new types of nuclear energy production that are possible.

For instance, wind power has limited further development potential in future bar the supersizing of turbines and blades, nuclear has multiple ways it can develop and it is only the cost and time that development requires which is holding these new variants back. Two key options stand out, Thorium reactors and Nuclear Fusion plants, both of which reduce the potential risk of disaster, in the case of Fusion to non-existent, and also reduce the potency of radioactive material.

## **SCOPE**

Examine what's happening in the power generation industry at present.

See how different technologies are adapting to a new business environment.

Learn which energy generation technologies are the strongest at present and the best option for countries.

Analyse the big trends in the industry and the players capitalising on them.

## **REASONS TO BUY**

What is happening in the power generation industry?

What are the most important new technologies?

Which countries are pushing new developments?

What power sources are most attractive at present?

How can countries meet their carbon emissions targets?

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Current nuclear technology will always carry some risk

The fallout from Fukushima was significant for the industry

Japan is tentatively trying to bring reactors back online with new safety standards

Germany has struggled to reduce carbon emissions because of nuclear going offline

The nuclear energy market is recovering because of the need to hit emissions targets

Nuclear energy in its current form is getting more expensive

Subsidies, guaranteed prices, and a poor deal for the consumer

The real answer and future for nuclear is in new technology

Thorium power plants could improve nuclear technology

Nuclear fusion is coming and may be the long term future of nuclear tech

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