

NZ may need to go nuclear in electricity – Genesis

Without power nations can only look forward to a third-world future.

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New Zealand needs to seriously look at using a nuclear power plant to generate electricity with low greenhouse gas emissions, one of the nation's leading electricity companies says.

"If the country at large does not get on board with nuclear technology, then when fusion reactors are available we will be so far behind the pace we won't have the research department ready to understand it," Genesis chief executive Murray Jackson, said.

Man-made nuclear fusion has been touted overseas as the cheap, safe, clean and almost limitless energy source of the future.

In fusion, atomic nuclei are fused together to release energy, as opposed to fission – the technique used in existing nuclear power plants and atomic bombs – where nuclei are split.

Mr Jackson told a climate change forum in Wellington yesterday that nuclear energy was the only new sustainable energy resource so far available for after 2025, and the technology was likely to improve by the time a plant would have to be built in 20 years' time.

"Don't give up on nuclear," Mr Jackson told the Wellington Chamber of Commerce forum.

He said 2025 was the first year in which it would be economic to close the Huntly coal-fired station – which generates about 4400 gigawatt hours (GWh) in a normal year, and 7000 GWh in a dry year – and that would be about the time that extraction of Waikato coal became less economic.

Mr Jackson outlined 3000MW of increased generation, which could be acquired over the next 20 years. This included 1000MW from a nuclear power plant.

He said that making Huntly's generators a reserve plant in 2025 would take away 1000MW of capacity.

Other options included 600MW from wind turbine capacity of 1500MW, another 250MW of hydroelectricity, 150MW of geothermal generation, and 1000MW from each of gas turbine and high-efficiency coal.

But solar and wind energy really required a subsidy of 3c/kWh – effectively a price increase of 20 per cent – to be competitive.

He said solar energy would be more attractive when photovoltaic cells were sold as roof tiles or windows that looked normal but generated electricity.

Mr Jackson said wind blew only 35 per cent of the time and it was necessary for New Zealand to have the right mix of technologies in its generation sector to have both minimum greenhouse gas emissions and security of electricity supplies.

And the nation at least needed to be maintaining a skill base in terms of nuclear technology.

Mr Jackson said nuclear technology was now greatly improved in terms of safety and reliability: "Nearly every developed country is now doing nuclear".

The solution to disposal of nuclear waste lay in requiring countries supplying uranium to take back the spent fuel rods and safely store them. Australia could store waste, but New Zealand's geology was too unstable.

He said one driver for New Zealand to eventually invest in a nuclear power plant could be if affluent nations in the Northern Hemisphere started requiring food labels to show the amount of greenhouse gas released in producing, processing and transporting commodities.

European concerns over "food miles" were highlighted recently with a UK dairy manufacturer's advertising campaign knocking Fonterra products over the distance they travelled to market.

Solid Energy chief executive Don Elder said the nuclear option was potentially good for any country with far lower risks than benefits, but there were some specific issues that would need to be addressed in New Zealand.

"It will take a long time changing thinking," he said.

Nuclear was probably less necessary in New Zealand than in many other countries, but the nation needed to be positioned for when improvements in nuclear technology became available.

Chief executive of the Business Council for Sustainable Development, former Labour minister, Peter Neilson told the forum he believed nuclear energy would be a "hotly contested" idea.

"Some New Zealanders instinctively believe that being a New Zealander means you must be anti-nuclear," he said. "That's going to take some time to change".