

DEVELOPING A STRATEGY TO ACCELERATE UTILISATION OF NEW ZEALAND'S SUPERCRITICAL GEOTHERMAL RESOURCES

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Keywords

Supercritical, geothermal, strategy, action group, renewable energy, 2050 zero carbon, decarbonization, sustainable development, Geothermal: the Next Generation, New Zealand

ABSTRACT

Renewable energy resources will be an increasing component of New Zealand's 2050 "zero carbon" energy portfolio, but the nation has quite some distance to go to achieve this target, with all the carbon-friendly energy sources needing to significantly increase their contribution. The challenge for the geothermal sector is to sustainably use conventional geothermal systems to the fullest possible extent, *and* to go beyond conventional resources, tapping into deeper supercritical heat resources - expected to offer substantial additional energy potential.

A Government-funded research programme established in 2019, Geothermal: The Next Generation (GNG), is the start of this move toward supercritical resource utilisation. The programme includes development of a supercritical heat strategy (2020-2050), targeting technology deployment by 2040 with sector-wide rollout through the 2040s. The strategy will build on the current scientific understanding of New Zealand's supercritical resources; account for international experiences; and address technological, legal, regulatory, economic and other barriers relevant to the nation's utilisation of supercritical resources. Action Plans will assist in implementation of the supercritical heat strategy, and an Action Group will drive implementation.

This paper introduces the GNG programme, particularly outlining the intended strategy development process and the intended engagement with potential players across the geothermal industry, academia, researchers, business, Māori, development banks and government entities.