

New Zealand's new web-based tool to assist greenhouse growers switch to geothermal heating

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A new web-based tool currently under development will help New Zealand's greenhouse growers switch to geothermal-sourced heating and reduce their use of fossil fuels.

The tool under development will help kiwi greenhouse growers make the switch to geothermal, by translating complex geothermal subsurface data into a user-friendly web-based tool tailored for the covered cropping industry. The tool is expected to be ready by March 2026.

The benefit of low temperature geothermal is that it is more widely available and does not need to be cooled for use. In addition, by switching to geothermal heating, New Zealand's greenhouse food growing industry can not only significantly reduce emissions, but also reduce its vulnerability to volatile and rising energy costs.

GNS Geothermal Scientist, Dr Anya Seward says the new tool will draw together existing data and knowledge about geothermal heat resource availability in the greater Auckland, Northern Waikato, and Bay of Plenty regions.

“The use of geothermal heat in greenhouses is common overseas but not in New Zealand, which is ironic given how obvious this form of energy is in parts of the country like Rotorua,” says Vegetables NZ Chief Executive, Antony Heywood.

“What's more, geothermal heat is available across New Zealand, not just in our volcanic zones. Most greenhouse operations only require temperatures below 70°C, which by using the right technology, can be harnessed from the naturally

occurring geothermal energy resources below themâ??.

â??The project will also incorporate information from heating engineers on how to use geothermal energy resources in greenhouses, and model the economics compared to other energy sources. This information will be invaluable when growers are considering options for decarbonisation.â??

TomatoesNZ Business Manager, Dinah Cohen, says that while geothermal is currently being used by some businesses and at least one greenhouse grower, they are generally extracting high temperature geothermal which is then cooled down to the required temperature for use.

Dr Seward says there is no more efficient way to produce heat than by starting with pre-existing heat. â??Geothermal heat offers a 24/7, low-emissions heating alternative that is more energy efficient than fossil-fuel burners and electric heating.â??

Development of the new web-based tool is being supported by the Sustainable Food and Fibre Futures fund through the Ministry for Primary Industries and Vegetable NZ. The development is being done through a collaboration involving GNS Science, GeoExchange NZ, Vegetables NZ and TomatoesNZ.