

Reference: <https://www.mbie.govt.nz/have-your-say/consultation-on-a-draft-geothermal-strategy-for-new-zealand>

### NZGov Draft Geothermal Strategy

Tēnā koutou katoa

Thank you for the opportunity to comment on the draft Geothermal Strategy for New Zealand.

My name is Fraser Watson, and I am a first-year student studying a Bachelor of Environmental Science at the University of Canterbury. I am writing my view on the draft Geothermal Strategy because I believe that it will have multiple positive impacts on people, the climate and industry.

### I support the draft Geothermal Strategy for New Zealand

After years of activity at sites across the country, new developments and years of research, all signs show that Geothermal energy is the path of the future. With the growing climate crisis, increasing prices for finite fossil fuels worldwide and global warming continuing to occur, immediate action must occur, Geothermal energy is a better resource than ever to start developing.

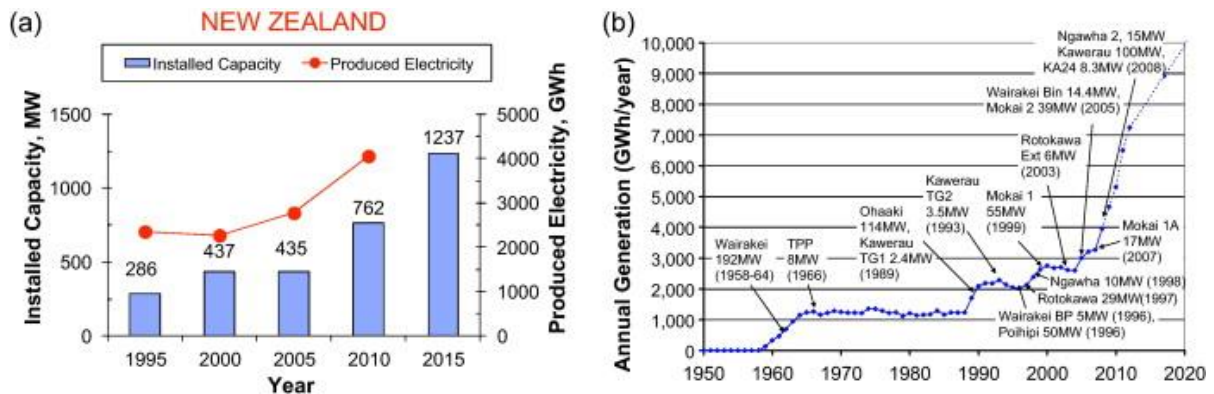


Fig (1&2) Harvey et al. (2010)



Fig (3&4) Carey. (2021)

## Advantages of Geothermal Energy

- *“It’s a proven reliable and resilient low-carbon renewable energy source viable for any industry that uses heat from chilled temperatures up to 220 degrees Celsius”* (Carey, (2022), 1<sup>st</sup> quote).
- Becoming more efficient over time; see ‘Fig (1&2)’.
- Available across New Zealand, especially in the North Island; see ‘Fig (5)’.
- Economically Viable.
- Small land footprint.
- Provides both Electrical and Heat energy.
- Encourages more businesses to use renewable sources of energy.  
An example of which is the tissue factory at Kawerau; see ‘Fig (3)’.
- Positively impacts our growing industry by providing more cost-efficient methods of heating; see ‘Fig (4)’

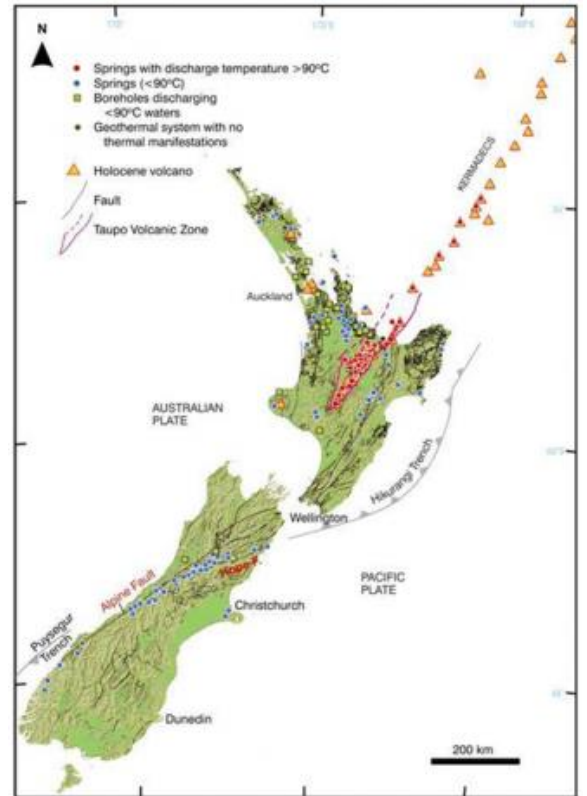


Fig (5) Thain et al. (2006/09)

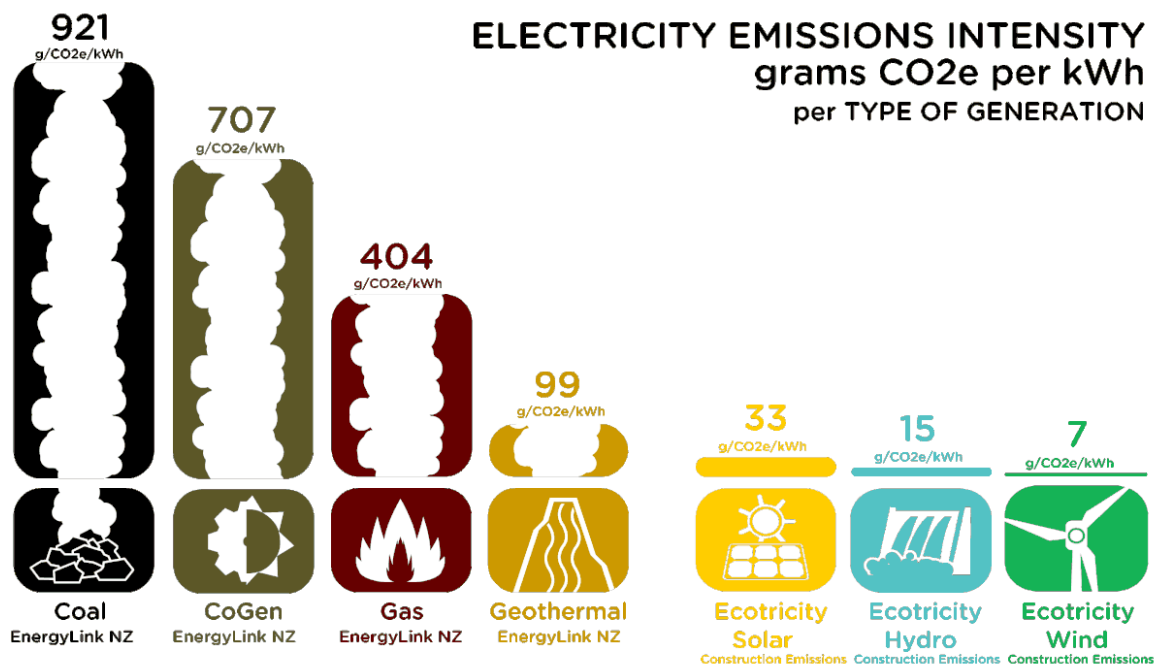


Fig (6) Ecotricity. (2023)

## Drawbacks of Geothermal Energy

- “Developing a geothermal power station is an expensive and risky proposition” (Eeca, (n.d.), Limitations on Geothermal Energy), often requiring multiple test wells and several kilometres of steel piping to connect them.
- Geothermal energy emits carbon emissions totalling nearly a 1/3 of what gas does; see ‘Fig (6)’
- Geothermal vents can cause water and air pollution.

## Feedback on the Draft Strategy

Developing on the action plans across the 3 horizons, a holistic approach is covered involves many different parties and interest. However, some subjects are left unclear or underdeveloped.

### 1. Clearer Targets and Milestones

There are many different targets and goals to consider within the short timeframe of 2025-29. I would recommend that interim goals be implemented to track the total progress of the strategy. This could also potentially be implemented for after the strategy has been completed to track its effectiveness and gauge if any change is needed.

Clear interim targets would provide certainty overall for different investors and the industry, demonstrate the steady progress over time, and help strengthen both public and private confidence in the strategy.

### 2. More detail on Environmental monitors

While the draft strategy emphasises the importance of sustainability, it provides limited detail on how environmental impacts will be monitored and managed. Without a clear framework set in place, there is a risk that issues could arise that negatively impact local ecosystems and biodiversity.

I recommend that the strategy include specific environmental monitoring requirements, such as reporting groundwater quality, carbon emissions, surface water impacts, and land stability.

These changes will help to ensure the sustainability of the plants and help to prevent any contamination or pollution that may occur because of geothermal or energy generation techniques. This will overall help better the environment, local iwi, communities and our growing industry.

### 3. Impact on Māori

Māori have a unique relationship with geothermal resources as taonga and are guided by principles of kaitiakitanga. While the draft strategy recognises Māori in the conversation phase, they are relegated to only Horizon 1 (2025-26) on the action plan.

I recommend that Māori partnership be extended across all horizons with roles like decision-making, monitoring and governance. The strategy should also utilise aspects of Mātauranga Māori science alongside Western science to uphold the cultural values of such taonga sites.

Strengthening Te Tiriti-based partnerships would not only help protect the geothermal taonga but also provide benefits for iwi and hapū for generations through capacity-building, education and iwi-led geothermal ventures.

### Conclusion

Overall, I think that the 'Draft Geothermal Strategy' is a step in the right direction. Despite the flaws it has, it is a great move toward more sustainable and positive ventures that will benefit people, iwi and growing industry for generations to come.

I wholeheartedly support this movement into more geothermal energy and think it will lead to a cleaner and better New Zealand sooner, rather than later.

## Links:

Thain, I., Reyes, A.G. and Hunt, T., 2006. A practical guide to exploiting low temperature geothermal resources, GNS Science Report 2006/09. 76pp.

[https://www.researchgate.net/publication/260944600\\_A\\_practical\\_guide\\_to\\_exploiting\\_low\\_temperature\\_geothermal\\_resources](https://www.researchgate.net/publication/260944600_A_practical_guide_to_exploiting_low_temperature_geothermal_resources)

Carey B., 2022. Untapped Geoheat 'low-hanging fruit' for reducing manufacturing emissions, GNS Science Report. <https://www.gns.cri.nz/news/untapped-geoheat-low-hanging-fruit-for-reducing-manufacturing-emissions/>

Colin C. Harvey, Brian R. White, James V. Lawless and Michael G. Dunstall., 2010. 2005-2010 New Zealand Country Update, Proceedings World Geothermal Congress 2010. 10pp. <https://www.eastharbour.co.nz/assets/pdfs/2005-2010-New-Zealand-Country-Update0168.pdf>

Eeca. (n.d.). Geothermal energy in New Zealand | EECA.

<https://www.eeca.govt.nz/insights/energy-in-new-zealand/renewable-energy/geothermal/>

Ecotricity. (2023). GEOTHERMAL emissions are now higher than COAL in the electricity sector. Ecotricity NZ. <https://ecotricity.co.nz/news/is-geothermal-really-renewable-geothermal-emissions-are-now-higher-than-coal-in-the-electricity-sector>