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News

Record temperatures of 122°C recorded 1.7km under Sembawang

Sembawang so hot.

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Sembawang is apparently even hotter than we realised.



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global average — even though Singapore is not located in a volcanic region.

The discovery also surpassed previous findings, where a temperature of 70°C was detected in Admiralty at a depth of 1.12km in 2022.



Drill site near Sembawang hot springs. Photo from NTU

What does this mean?

This suggests strong potential for the harnessing of geothermal energy in Singapore, scientists said at a Jun. 3 symposium.

The findings were based on two holes drilled into the ground at Sembawang.



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Revamped Sembawang Hot Spring Park has 4-tier cascading pool, egg-cooking station & new eatery

A new, yet not so new, park to visit over the weekends.



Based on the data, temperatures could reach 230°C at depths of 5km.

This could mean that Singapore could generate its own geothermal energy — a weather-independent clean energy source.

This could in turn be used for generating electricity, district cooling, industrial heating, and desalination.



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Granite rock core samples from the Sembawang drilling site. Photo from NTU

More studies

The data will contribute to ongoing studies that aim to determine the feasibility of [geothermal energy](#) in Singapore.



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S'pore to conduct islandwide study on potential of geothermal energy for power generation

An area under Admiralty was previously found to have geothermal potential.



Factors to be examined include how far the geothermal reservoir extends, and how long it can remain viable.

The researchers, who hail from the Nanyang Technological University (NTU), TUMCREATE, and Surbana Jurong, also suggested that geothermal energy could support Singapore's goal of achieving net-zero emissions by 2050.

In two simulations, using different geothermal-harnessing technologies, geothermal energy was shown to demonstrate significant cost-saving potential.

One simulation saw chilled water costs lowered by at least 28 per cent, while the other saw electricity generation costs reduced by at least 28 per cent, and chilled water costs by 39 per cent.

Both systems also showed reduced greenhouse gas emissions of at least 90 per cent.

Top image from NTU