

Geothermal development history of the Taupo Volcanic Zone

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ABSTRACT

This history starts from a Maori perspective, then after focussing on initial major steps, steadily moves into the modern era. It recognises the significance of geothermal tourism as an early development option.

There have been multiple investigation and development phases focused on the Taupo Volcanic Zone (TVZ), with frequent increments in generation over the last 25 years, especially following the establishment of a competitive electricity trading market and a resource management regime (Fig. 1). Growth in the last 10 years has been remarkable, though another development hiatus has arrived. The developments are briefly traced along with the changing roles for government and private developers and support companies through this period. Further details can be found in other papers in this issue.

Finally, a brief view is given on possible future development.

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1. Early history, exploration and developments

New Zealand Maori have a close relationship with geothermal resources, and this is particularly so for Te Arawa (people descended from the crew of this canoe from Hawaiki who form a group of tribes in the Rotorua-Maketū area; Fig. 2). Stories are told of Ngatoroirangi's exploration of the Central North Island. While on the snow-covered slopes of Tongariro, he was dying of cold so called to his sisters (Kuiwai and Haungaroa) in Hawaiki to bring him heat. They sent their tipua (demon, spiritual being), TeHoata, and Te Pupu which approached from the direction of Whakaari (White Island) in the Bay of Plenty, either surfacing or dropping coals from their kete (baskets) at intermediate places where they "lit a fire" and eventually revived Ngatoroirangi with warmth. Each of these intermediate places became a geothermal field.

1.1. Growing stability and the rise of geothermal tourism

Te Arawa settlement occurred within the Taupo Volcanic Zone. European settlement in New Zealand commenced around 1800, accelerating after the Crown–Maori Treaty of Waitangi 1840, and again after gold rushes elsewhere in New Zealand in the 1850's and 1860's. Land alienation by Maori led to war, then growing stability from the mid-1860's when the Government was keen to develop

the country. There was significant income from gold which needed a New Zealand outlet for spending. Tourism was one possible solution. In December 1870, Queen Victoria's son, Prince Alfred, Duke of Edinburgh visited New Zealand including the Pink and White Terraces at Rotomahana, accessed through the village of Wairoa, in his itinerary. In 1872, Yellowstone National Park was established in the United States of America, with its famed geothermal features. News of this soon reached New Zealand and was matched with calls for a New Zealand national park that included Rotomahana. Former Premier William Fox travelled through the area in 1874 emphasising its tourism value and considering the potential health benefits of the springs and pools. He stayed at the Spa Hotel in Taupo visiting a number of surrounding sites, including what would later become De Brett's Hotel and spa and the Wairakei/Tauhara area. Hotels had been established in and around Ohinemutu on the shore of Lake Rotorua and these were now the jumping-off point for exploration of the Lakes district. Frequent visits were made to the Rotomahana area to see the terraces, with canoe hire being at commercial regulated rates (Fig. 3).

As early as 1845 Robert Graham had established a hot spring sanatorium at Waiwera north of Auckland. Fluent in Maori, he arrived in the TVZ in 1878 to successfully help settle a Maori land dispute at Maketu. In gratitude, Te Arawa chiefs offered land to Graham (possibly an occupation right only), some at Te Koutu (just north of Ohinemutu). Reconciliation was slow so Chief Poihipi Tukairangi arrived from Taupo and offered to gift land at Wairakei if Rotorua Maori were too slow. While there is dispute about how he finally achieved his ends, the end result was that by 1882 Robert

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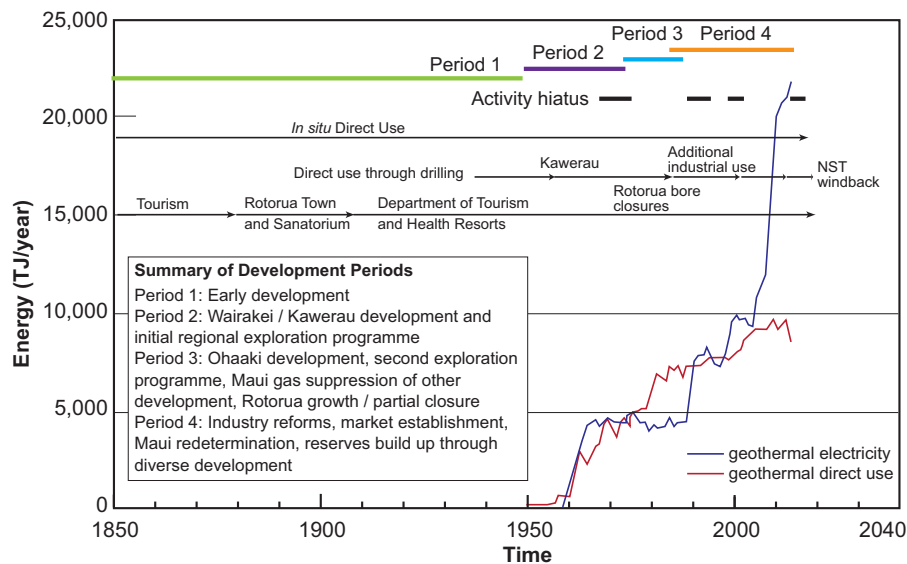


Fig. 1. A history of Taupo Volcanic Zone geothermal development.

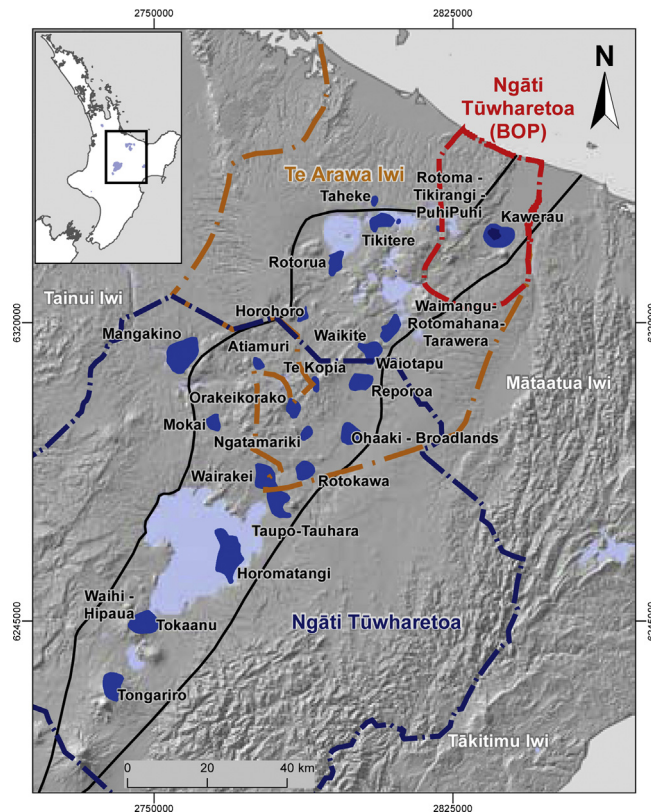


Fig. 2. The Taupo Volcanic Zone, showing an overlay of traditional Te Arawa land boundaries (rohe).

Graham owned outright the Ohinemutu (later Lake House) Hotel, the Terrace Hotel at Wairoa and about 1700 ha of land between Huka Falls and the Wairakei Geyser Valley for the Wairakei Hotel, all for very little outlay (Stokes, 1991). Graham quickly advertised his own 'Sanatorium' at Ohinemutu and espoused the superior geothermal features at Wairakei on which he developed another hotel (later bought by government).

Te Arawa had generally resisted any land sale, but this was shortly to be undone by growing calls through the 1870's for a 'Sanatorium of the Southern Hemisphere' to be based around the

healing and relaxing properties of hot pools in the Rotorua area. Te Arawa had established a Great Committee, partly with Robert Graham's help, to deal with land issues. It was this committee that proposed a survey of a 10 square mile block of land almost the size of Auckland city, for the establishment of a thermal township to be known as Rotorua in 1881. To facilitate the establishment of this town, Te Arawa effectively gifted land to Government for the establishment of a hospital/sanatorium and for related government buildings (Fig. 4).

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