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Improving Relationships with Indigenous Peoples

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ABSTRACT

The success of geothermal projects in New Zealand is closely linked to building meaningful relationships with Indigenous Peoples. There are examples where geothermal resource use and development has occurred on indigenous ancestral lands, and these developments can have potential negative impacts and/or benefits for Indigenous Peoples. The Ohaaki geothermal power station development in the North Island of New Zealand occurred within Ngāti Tahu ancestral lands. This paper examines the evolution of the relationship between Contact Energy and the 338 Trust from 2012 to the present, framed by the context of the Ohaaki geothermal project in Aotearoa New Zealand.

In the 1960s, a lease over Ngāti Tahu Tribal land and Tahorakuri Papakainga Māori Reservation Trust (338 Trust) was established in favour of the New Zealand Government to facilitate geothermal development. The Ohaaki Power Plant was commissioned in 1988. Within 5-10 years of production, rates of subsidence at Ohaki reached up to 500 mm/year in response to the geothermal fluid extraction.

In 1996 the Government sold ~25% of its generation assets to Contact Energy (CE). Ngāti Tribal Lands Trust signed a Memorandum of Understanding with CE. This also marked the start of CE's relationship with 338 Trust who own the Ohaki Pa (maori village). A mitigation agreement was signed in 2013 acknowledging the adverse effects on 338 not being able to exercise Kaitiakitanga (guardianship) over their taonga (cultural treasures) e.g., acknowledge the subsidence to date and assess the social/cultural impacts, surface features, cultural pools etc and together agreed a way forward.

CE and 338 have developed a strong relationship over 28 years and are working closely together to address the impact of subsidence and supporting 338 Trust with their aspirations. This paper discusses the journey to date (the ups and the downs) alongside key learnings of how to improve better relationships with Indigenous Peoples.

1 INTRODUCTION

Geothermal resource development on indigenous ancestral lands can bring both challenges and benefits to Indigenous Peoples and the developer. One such example is the Ohaaki geothermal power station, located within the ancestral lands of Ngāti Tahu and adjacent to the Waikato Awa (river). In the 1960s, the government drilled several wells where known geothermal fields existed without the consent of land owners. A lease with Ngāti Tahu Tribal land Trust (NTTLT) that also impacted on Tahorakuri Papakainga Māori Reservation Trust (338 Trust), Ohaki Pa (the Māori village), was established for the New Zealand Government to enable geothermal development ten years after the commissioning of Wairākei station. This signing required NTTLT to make an application to the Maori Land Court (MLC) for a long-term lease to include the seven blocks of land under their management; unfortunately, the MLC also included sacred areas of cultural importance to Ngati Tahu. Namely, Ohaki Pa, the Ngawha (hot springs), Fertility rock, Paru pool, and Urupa (burial place). These locations hold deep spiritual and historical meaning for Ngati Tahu, with Ohaki Pa serving as a traditional meeting place and Urupa being a sacred burial ground. This inclusion raised concerns among Ngati Tahu, as leasing these sacred sites could threaten their spiritual significance and restrict traditional access or practices.

Based on the successful development of Wairākei power station and the need for national power security, the Government proceeded with further exploration, assuming the Ohaki geothermal resource would behave similarly to Wairākei. This led to subsidence issues that affected the local Māori landowners, with significant damage occurring even before the commissioning of the Ohaaki Power Plant in 1989. Within 5 to 10 years of

production, the area experienced further subsidence, meaning the gradual sinking of land at rates of up to 500 mm/year due to geothermal fluid extraction. This phenomenon has had significant maemae (hurt) to the ancestral lands and cultural sites of Ngāti Tahu.

Prior to the sale of approximately 25% of the Government's generation assets to Contact Energy (CE) in 1996, an offer of $50,000 was made to the Ngāti Tribal Lands Trust (NTTLT) to sign a Memorandum of Understanding (MOU). Although legal advice suggested this was a reasonable offer, the trustees countered a request for $1 million, which was ultimately accepted. The signing of this MOU marked the beginning of a relationship between Contact Energy and the 338 Trust, owners of Ohaki Pa.

In response to the subsidence challenges documented within the Resource Management Act (RMA) processes, Contact Energy has worked collaboratively with the 338 Trust to address the impacts of subsidence, soggy ground and inundation of the Waikato Awa (river). The relationship has evolved, with Contact Energy acknowledging the maemae (hurt) to a robust framework of engagement, including the signing of a formal Mitigation Agreement in 2013. This agreement acknowledges the adverse effects of subsidence, commits both parties to joint assessment of social and cultural impacts, and establishes a collaborative path forward for mitigation and remediation. Through ongoing consultation, shared decision-making, and integration of Māori values into operational management, Contact Energy and the 338 Trust have developed a model for industry–Indigenous collaboration in geothermal resource development.

The success of geothermal projects in New Zealand is closely linked to building meaningful relationships with Indigenous Peoples. The Ohaaki geothermal station, operated by Contact Energy, is situated on land of immense cultural and spiritual value to Ngāti Tahu, represented by the 338 Trust. Over the past decade, Contact Energy's engagement with the Trust has evolved, reflecting a growing appreciation for collaborative and mutually beneficial relationships. This paper highlights the transition from early tensions to constructive collaboration, sharing initiatives, challenges, and lessons relevant across the geothermal sector.

2 HISTORICAL CONTEXT

The Ohaaki geothermal station is located on land of deep cultural and spiritual significance to Ngāti Tahu, who have occupied the rohe (tribal lands) for over 750 years. The Tahu Matua wharenui (meeting house) was relocated from their ancestral land at Orakei Korako to Ohaki in 1961, as a result of the Ōhakuri hydroelectric dam development by the crown. Being displaced from your birthplace was a defining and stressful moment for Ngāti Tahu peoples.



Figure 1. Left: Members of the Wharekawa whānau who were Kaitiaki (guardians) at Ōrakei Korako Papakāinga, outside their home in 1961. Right: Same view after two thirds of the land had been flooded)

Tahu Matua is the eponymous ancestor for Ngāti Tahu, and he was moved to the banks of the Waikato Awa (river) at Ohaki. The geothermal features surrounding the station, including the Ohaki Ngāwhā (hot springs) and sinter terraces (mineral-rich natural structures), are considered taonga (treasures). Traditionally used for bathing, cooking, and healing, the Ohaki Ngāwhā is now artificially maintained, due to the loss of surface geothermal fluid discharge caused by a decrease in reservoir pressure due to geothermal fluid extraction.



Figure 2. Ohaki Ngāwhā and surrounding sinter terrace (1910)

The commissioning of the Ohaaki geothermal power station in 1989 sparked important discussions about land use, environmental stewardship, and cultural preservation. Early interactions between Contact Energy (and its predecessor entities) and the Trust were marked by concerns over environmental impacts, especially the lowering of ground levels, which led to rising water tables and visible effects on the marae's urupā (cemetery). Initial engagement was limited and lacked shared decision-making, resulting in mistrust and periodic disputes.

Ohaki Pa is managed by elected Ngāti Tahu members; Mark Reihana, Leo Rika, Valerie Moengaroa, Henderika Nepia, Felicity Nepia, and Aroha Campbell. They oversee the preservation of taonga including Ohaki Ngāwhā (hot springs), Fertility Rock, Urupa (burial ground), and Ohaki Pa itself.

3 SUBSIDENCE AND ITS IMPACTS

Subsidence—the gradual sinking of land—has been a defining challenge at the Ohaaki geothermal power station, located within the ancestral lands of Ngāti Tahu. Following the commissioning of the power plant in 1989, the area experienced subsidence rates of up to 500 mm per year due to geothermal fluid extraction. This process reduces reservoir and groundwater pressures, leading to compaction of highly compressible geologic formations, particularly the Huka Falls Formation. As a result, the ground surface at Ohaki Pa has lowered by more than 3.4 meters since 1968, with rates peaking after the plant began operation and declining gradually over time.

The impacts of subsidence have been profound for Ngāti Tahu. Ancestral lands and cultural sites—including the Ohaki Pa, urupā (cemetery), and significant geothermal features such as the Ohaki Ngāwhā (hot springs) and sinter terraces—have been threatened by environmental degradation and changes in land elevation. These taonga (treasures) hold deep cultural and spiritual significance, and their alteration has raised serious concerns over the years about environmental stewardship and the preservation of Māori identity and heritage.

Subsidence has also affected hydrology in the region. Ohaki Pa is situated beside the Waikato Awa (River), between two hydroelectric dams that control water levels and flow. Fluctuations in river levels, combined with land sinking, have increased the risk of flooding and persistent wet ground, further impacted the marae and surrounded areas. Hydrological studies now factor in climate change, river management, and the interplay between river levels, groundwater, subsidence and soggy ground, leading to recommendations for improved flood and earthquake protections.

The understanding of subsidence at Ohaki has evolved over time. Early models underestimated the rate and persistence of ground sinking, and recent data confirm that subsidence is ongoing and irreversible, with delayed compaction effects due to slow drainage in low-permeability layers. A holistic approach to monitoring now combines precise levelling surveys, continuous real-time data collection, groundwater and flood monitoring, LIDAR and aerial surveys, thermal and soil temperature assessments, geotechnical investigations, hydrological modelling, and ecological monitoring. These efforts aim to track environmental changes, inform safe development, and protect significant natural and cultural areas.

In summary, subsidence at Ohaki has presented complex technical, environmental, and cultural challenges. Its impacts have shaped the relationship between Contact Energy and the 338 Trust, driving the need for collaborative management, ongoing monitoring, and innovative solutions to safeguard both the land and Ngāti Tahu cultural heritage.

4 CONTACT ENERGY'S RESPONSE

Contact Energy's response to the subsidence challenges at Ohaki has evolved significantly over time, reflecting a commitment to, the relationship, transparency, and respect for Ngāti Tahu's cultural values. Initially, engagement between Contact Energy (and its predecessor entities) and the Trust was largely non-existent, with no shared decision-making and periodic disputes arising from environmental impacts, particularly the lowering of ground levels and its effects on culturally significant sites.

Recognizing the need for a more collaborative approach, Contact Energy and the Trust signed a formal Mitigation Agreement on 25 September 2013. This agreement was developed in response to the adverse effects of geothermal development—specifically subsidence, which impacted the Trust's ability to exercise kaitiakitanga (guardianship) over their taonga (cultural treasures). The Mitigation Agreement formally acknowledged the negative impacts of subsidence, committed both parties to joint assessment of social and cultural impacts, and established a collaborative path forward for mitigation and remediation.

Key provisions of the agreement included:

- Joint assessments of environmental, social, and cultural impacts.
- Development and implementation of mitigation and remediation strategies.
- Ongoing consultation and shared decision-making via regular hui (meetings).
- Incorporating Māori values and goals into both operational and environmental management.
- Initial one-time compensation payments were made according to specific clauses, with annual payments being provided since 2013.
- An 8.9-hectare parcel of land was purchased and held in reserve, available should the 338 Trust choose to relocate.

Provision of free utilities, such as electricity and LPG gas for heating water, along with potable water.

As a result of these commitments, the relationship between Contact Energy and the Trust has strengthened. The co-management approach has led to improved environmental monitoring, restoration projects, and support for marae infrastructure and community initiatives. This relationship model has become a leading example for other geothermal projects in New Zealand, demonstrating the value of industry–Indigenous collaboration.

From 2012 onwards, Contact Energy shifted towards more proactive and inclusive engagement, establishing formal consultation frameworks, regular hui (meetings), and appointing dedicated relationship managers. The evolution from compliance-driven communication to genuine dialogue included the involvement of kaumātua (elders), trustees and rangatahi (youth). These changes have fostered respectful engagement, shared stewardship of geothermal resources, and recognition of Indigenous rights and values in resource development.

In summary, Contact Energy's response to subsidence at Ohaki has been characterized by a transition from limited engagement to a robust, relationship-based approach. Through formal agreements, shared decision-making, and integration of Māori values, Contact Energy and the 338 Trust have developed a collaborative model that addresses technical, environmental, and cultural challenges while supporting the aspirations of the 338 Trust.

From 2012, Contact Energy shifted towards more proactive and inclusive engagement with the 338 Trust. Key milestones included establishing formal consultation frameworks, regular hui (meetings), and appointing dedicated relationship managers. The Mitigation Agreement stands as a cornerstone of this relationship, reflecting a commitment to respectful engagement, shared stewardship of geothermal resources, and recognition of Indigenous rights and values in resource stewardship. Changes in engagement strategies were driven by organisational learning within Contact Energy and increased advocacy from the Trust. The period saw a shift from compliance-driven communication to genuine dialogue, with both parties agreeing on protocols for information sharing, dispute resolution, and collaborative decision-making.

5 COLLABORATIVE INITIATIVES

Contact Energy and the Trust have collaborated on initiatives to balance energy generation with cultural and environmental values. These include:

Cultural Engagement: Regular cultural safety training for Contact Energy staff, marae-hosted workshops, and integrating tikanga Māori (customs and protocols) into operational procedures.

Environmental Stewardship: Joint monitoring of impacts to groundwater, reservoir, subsidence, surface features and native flora and fauna.

Community Benefits: Support for infrastructure, summer internship for Ngāti Tahu rangatahi, and sponsorship of community events.

Economic Opportunities: Pathways for local employment, procurement policies favouring Māori businesses.

All initiatives have emphasised transparency, the inclusion of mātauranga Māori (Māori knowledge), and the involvement of tāngata whenua in geothermal resource management and kaitiakitanga (guardianship) over the geothermal resource.

6 SCIENTIFIC UNDERSTANDING

Subsidence at Ohaki is caused by geothermal fluid extraction, which reduces reservoir and groundwater pressures, leading to compaction of highly compressible geologic formations, especially the Huka Falls Formation. Monitoring includes precise levelling surveys, continuous real-time data collection, groundwater and flood monitoring, LIDAR and aerial surveys, thermal and soil temperature assessments, geotechnical investigations, hydrological modeling, and ecological monitoring. Hydrological studies now factor in climate change, river management, and the interplay between river levels, groundwater, and land subsidence. These studies have led to recommendations for new flood and earthquake protections, such as improved infrastructure to address both flooding and liquefaction risks. Ongoing monitoring now takes a holistic view, combining different scientific approaches to better understand environmental changes.

7 CHALLENGES AND LESSONS LEARNED

The journey has not been without difficulties. Key challenges included overcoming historical mistrust, reconciling differing priorities around resource use, and navigating regulatory complexities. A delay in project delivery led to frustration within the Trust, prompting a series of facilitated hui and resulting in a new protocol for joint decision-making and clearer communication channels. Another instance involved a dispute over environmental monitoring results, which was resolved by inviting a collaborative review process. These experiences led to important changes, such as establishing joint governance forums and ensuring both parties had equal say in project planning and dispute resolution. Lessons learned include the importance of early and ongoing engagement, co-designing solutions, and maintaining flexibility to adapt to evolving circumstances. Recognising and respecting both the spiritual significance of the land and reservoir has been critical to building trust and resilience in the relationship.

8 OUTCOMES AND IMPACT

The partnership has brought tangible benefits to both Contact Energy and the 338 Trust. For Contact Energy, improved social licence to operate, better project outcomes, and increased organisational learning have resulted. For the Trust, the relationship has led to gains in environmental protection, cultural revitalisation and the Trust is able maintain the Pa to a high standard. The wider community has benefited through increased employment, educational opportunities, and stronger social cohesion. The co-management approach developed at Ohaki is a demonstration on how collaboration between industry and Indigenous communities can deliver shared value.

9 RECOMMENDATIONS

Drawing from the experience of Contact Energy and the 338 Trust, geothermal professionals seeking improved relationships with Indigenous Peoples should:

1. Engage early, openly, and respectfully, recognising Indigenous communities as relationship / partners rather than just stakeholders.
2. Co-develop frameworks for decision-making, environmental stewardship, and benefit-sharing.
3. Invest in cultural competency and ongoing education for staff drawing on the Indigenous knowledge.
4. Ensure transparency in communication, reporting, and dispute resolution.

5. Tailor approaches to reflect the unique cultural, historical, and environmental context of each community.

6. Celebrate successes and learn from challenges in a spirit of continuous improvement.

10 CONCLUSION

The evolving relationship between Contact Energy and the Ohaki Pa Trust offers valuable insights for the geothermal sector. By prioritising respectful engagement, shared decision-making, and cultural understanding, energy providers can foster long-term relationships that benefit both Indigenous communities and the industry. As geothermal development grows, these lessons will be key to shaping a more collaborative, inclusive, and sustainable future in Aotearoa and beyond.

11 SUMMARY OF INSIGHTS AND FUTURE DIRECTION

- **Insights:** The Ohaki experience demonstrates that technical challenges like subsidence can be addressed most effectively through genuine relationship / partnership, shared stewardship, and integration of Indigenous values. Collaborative governance, transparent communication, and co-designed solutions are essential for building trust and resilience.

- **Future Directions:** Continued investment in cultural competency, adaptive management, and joint innovation is vital to successful engagement. The Ohaki model provides a blueprint for other geothermal projects, highlighting the importance of ongoing dialogue, mutual respect, and shared benefit in industry–Indigenous relationships.

12 GEOTHERMAL INDIGENOUS PEOPLE'S DECLARATION – OCTORBER 2024

We had international representation of Indigenous Geothermal Peoples attending the inaugural Indigenous Geothermal Symposium 2024 held in Waikōloa, Hawai`i, shared and discussed our respective experiences, learnings and issues regarding geothermal resource use and development occurring within our respective areas of ancestral land including its impacts on, and potential benefits for, Indigenous Geothermal Peoples' communities. Representing Indigenous Geothermal Peoples from 4 countries, we gathered with a common purpose to advocate for the protection of indigenous rights, lands, social equity, cultural integrity, inclusivity, full and effective participation and shared prosperity of Indigenous Geothermal Peoples, while fully acknowledging that sustainable geothermal resource use and development will play a critical role in achieving the energy transition and in addressing the climate crisis. We collaboratively identified 6 priorities that underscore what we are collectively concerned about. We also agreed what we are "calling for" from the wider geothermal community to help address these concerns. In this context, the wider geothermal community includes, as relevant, government at all levels, geothermal investors, geothermal developers, energy utilities and energy and environmental regulators. Our 6 priorities and respective requests of the wider geothermal community are set out below

Indigenous Geothermal Peoples Priorities	Content
1. Indigenous peoples' rights and sovereignty over their lands and natural resources	To recognize, respect, guarantee and protect Indigenous Peoples' rights as enshrined in the UN Declaration on the Rights of Indigenous Peoples and other internationally recognized rights, including in the context of renewable energy. To recognize Indigenous Peoples as rights holders, owners and decision-makers rather than mere stakeholders in the development of geothermal projects.
2. Communication and Engagement	To make the commitment to undertake meaningful and transparent consultation as early as possible, well before the commencement of any project development phase, to gain, from the outset, a deeper understanding of what is important to Indigenous Peoples' and why. This is critical for developing mutual trust and relationship building. To recognize and respect Indigenous Peoples' right to say "no" and to accept any non-negotiables they may have.

	To strive to find consensus, establish integrated partnerships or other solutions that benefit both parties, and secure the free, prior and informed consent from Indigenous Peoples. To provide adequate funding for all of the above.
3. Community Benefits	To reciprocate the benefits of geothermal development by implementing equitable benefit-sharing mechanisms, such as co-ownership, co-management and co-equity models, that respect Indigenous Peoples' rights and contributions and result in early and ongoing internal capacity building, employment opportunities and the promotion of Indigenous Peoples' right to self-determination.
4. Cultural Knowledge	To acknowledge and respect Indigenous Peoples' as stewards and guardians of their land and geothermal resources and provide tangible ways to enable them to carry out their duties in this respect. To protect the cultural knowledge of Indigenous Peoples' and look for opportunities to incorporate it into developments so it can be celebrated and enhanced.
5. Law and Policy	To ensure that the development or review of any geothermal related laws, policies, procedures or decision-making criteria prioritises Indigenous Peoples' rights, social equity, cultural integrity, and environmental protection and, as far as possible, is agreed across the political spectrum to minimise future amendments and, in turn, maximise certainty for Indigenous Peoples. To provide for, and fund, decision-making roles for Indigenous Peoples in respect of the development of geothermal related laws, policies or procedures and in respect of geothermal development project proposals.
7. Communication	To support, promote and facilitate the development of a set of guiding values and principles on Indigenous Rights for businesses, developers and multinational enterprises in line with the UN Guiding Principles on Business and Human Rights (UNGPs).

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