



- A message from Chair Kali Watson:





HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

DHHL GEOTHERMAL BENEFICIARY INFORMATIONAL BRIEFING



AGENDA

- Welina & Introductions (5 MINS)
- Presentations (50 MINS)
- **BREAK!** (10 MINS)
- Breakout Groups (45 MINS)
 - ✓ Culture
 - ✓ Environment
 - ✓ Technology
 - ✓ Benefits
- Closing (10 MINS)



INTRODUCTIONS



Kali Watson

Chairperson

Hawaiian Homes Commission

Russell Ka'upu

Property Dev Agent

DHHL

Mana Newton

Group CEO

Taura North No. 2 Trust

Andy Blair

Director Business &
Innovation
Upflow

Jena Kamalani Earle

Community & Urban
Planner
SSFM

Cedric Duarte

Facilitator

The Kalaimoku Group



BENEFICIARY MEETING

PURPOSE:

This **informational meeting** is meant to:

- **Share information** regarding DHHL's Geothermal resources
- Provide **beneficiaries an opportunity to ask questions**
- Gather **beneficiary mana'o** regarding DHHL's Geothermal related studies and efforts



GUIDELINES

- There is a lot of information to cover, please **hold questions until after the presentation.**
- **Agree to disagree** —others have different opinions.
- Be respectful of the person talking – **please do not interrupt.**
- Have an **open mind** — take home new information.
- Understand ultimately, **decision-making rests with the HHC.**
- **Some are here to listen, some are here to speak;** our agenda is meant to provide opportunities for both.



PRINCE JONAH KŪHIŌ KALANIANAʻOLE
KEALIʻI MAKĀAINANA - THE CITIZEN PRINCE
MARCH 26, 1871 - JANUARY 7, 1922

“After extensive investigation and survey on the part of various organizations organized to rehabilitate the Hawaiian race, it was found that the only method in which to rehabilitate the race was to place them back upon the soil.”

- Delegate Kalanianaʻole

PAST DHHL ACTIONS RELATED TO GEOTHERMAL

2009

JAN

**DHHL Ho‘omalūō
Energy Policy**
adopted by the
HHC; Objective #2

2014

MAR

AG opinion 14-1:
entitled to 100%
of royalties; sole
authority to
manage
resources

2016

DEC

“Magnetotelluric
and Audio
Magnetotelluric
Surveys” **study**
by **Donald
Thomas**

2022

DEC

LMD presents to
HHC on
potential sites
of **Geothermal**
resources on
HHLs

2023

AUG

**Geothermal
Permitted
Interaction
Group (PIG)**
findings &
recommendations

2025

JUN

NREL's
Hawai'i/Aotearoa
**Indigenous
Knowledge
Exchange**

2026

MAY

DHHL
Geothermal
**Beneficiary
Informational
Briefings begin**



DEPARTMENT OF HAWAIIAN HOME LANDS



HO'OMALUŌ

ENERGY POLICY

To enable native Hawaiians and the broader community working together to lead Hawai'i's effort to achieve energy self-sufficiency and sustainability.

January 2009

OBJECTIVE

2

Ko'o: Facilitate the use of diverse renewable energy resources.

ACTIVITIES:

Identify properties in DHHL's land inventory that have potential for renewable energy projects.

Evaluate DHHL's available authorities/powers that could expedite renewable energy projects for the state of Hawai'i.

Pursue the leasing of those lands that are identified as suitable for renewable energy projects. (First priority should be given to entities that would provide "firm" renewable energy power such as garbage-to-energy (mass-burn), geothermal, pump-storage hydropower, solar-thermal and second priority to "as-available" renewable energy power such as wind, solar-photovoltaic, and wave.)

Seek innovative processes to provide reliable electricity, by assisting electric utilities (in a world where energy is an essential but very limited resource) to reduce Hawai'i's dependency on fossil fuels.

Encourage existing and future general lessees and licensees of DHHL's properties to design and build their facilities so that they are energy and resource efficient.

Seek partnerships for the development of renewable energy resources. In this connection, build relationships that could assist DHHL on non-energy related issues.

PAST DHHL ACTIONS RELATED TO GEOTHERMAL

2009

JAN

DHHL Ho‘omalūō Energy Policy
adopted by the HHC; Objective #2

2014

MAR

AG opinion 14-1:
entitled to 100% of royalties; sole authority to manage resources

2016

DEC

“Magnetotelluric and Audio Magnetotelluric Surveys” study by Donald Thomas

2022

DEC

LMD presents to HHC on **potential sites of Geothermal resources on HHLs**

2023

AUG

Geothermal Permitted Interaction Group (PIG) findings & recommendations

2025

JUN

NREL's Hawai'i/Aotearoa **Indigenous Knowledge Exchange**

2026

MAY

DHHL **Geothermal Beneficiary Informational Briefings begin**

PAST DHHL ACTIONS RELATED TO GEOTHERMAL

2009

JAN

DHHL Ho‘omalūō Energy Policy
adopted by the HHC; Objective #2

2014

MAR

AG opinion 14-1:
entitled to 100% of royalties; sole authority to manage resources

2016

DEC

“Magnetotelluric and Audio Magnetotelluric Surveys” **study by Donald Thomas**

2022

DEC

LMD presents to HHC on **potential sites of Geothermal resources on HHLs**

2023

AUG

Geothermal Permitted Interaction Group (PIG)
findings & recommendations

2025

JUN

NREL's Hawai'i/Aotearoa **Indigenous Knowledge Exchange**

2026

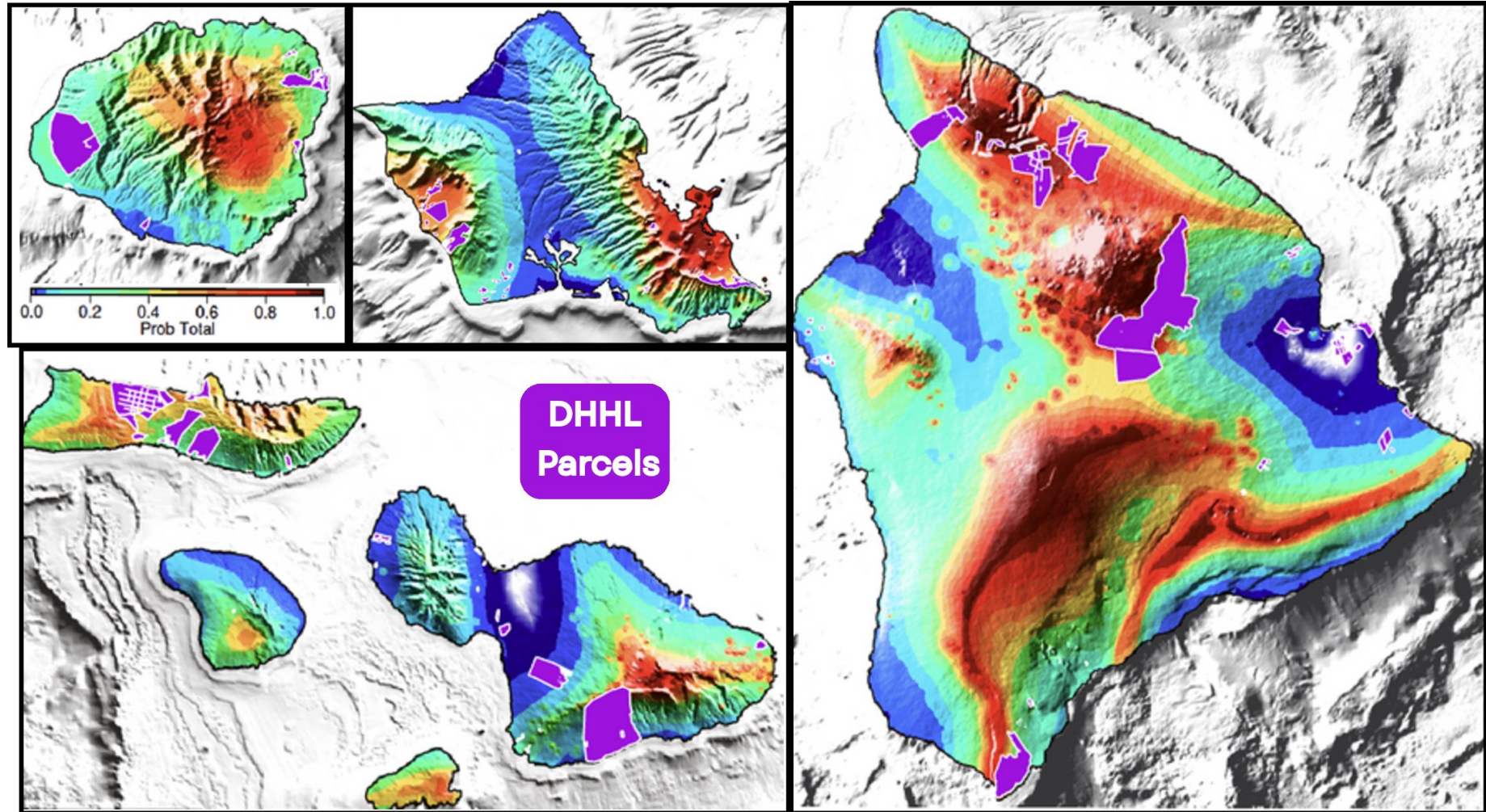
MAY

DHHL **Geothermal Beneficiary Informational Briefings begin**



GEOHERMAL RESOURCES ON HHL

- Kapa‘a, Kaua‘i
- Luualalei, O‘ahu
- Waimānalo, O‘ahu
- Ho‘olehua, Moloka‘i
- Kahikinui, Maui
- Hāna, Maui
- Kawaihae, Hawai‘i
- Pu‘ukapu, Hawai‘i
- Humu‘ula & Upper Pi‘ihonua, Hawai‘i
- Ka‘ū, Hawai‘i



PAST DHHL ACTIONS RELATED TO GEOTHERMAL

2009

JAN

DHHL Ho‘omalūō Energy Policy
adopted by the HHC; Objective #2

2014

MAR

AG opinion 14-1:
entitled to 100% of royalties; sole authority to manage resources

2016

DEC

“Magnetotelluric and Audio Magnetotelluric Surveys” **study by Donald Thomas**

2022

DEC

LMD presents to HHC on **potential sites of Geothermal resources on HHLs**

2023

AUG

Geothermal Permitted Interaction Group (PIG)
findings & recommendations

2025

JUN

NREL's Hawai'i/Aotearoa **Indigenous Knowledge Exchange**

2026

MAY

DHHL **Geothermal Beneficiary Informational Briefings begin**

"DHHL should not try to develop its geothermal resources on its own, but should, instead, work with a private party with both industry knowledge/experience and the ability to finance the venture." `Geothermal PIG

PAST DHHL ACTIONS RELATED TO GEOTHERMAL

2009

JAN

DHHL Ho‘omalūō Energy Policy
adopted by the HHC; Objective #2

2014

MAR

AG opinion 14-1:
entitled to 100% of royalties; sole authority to manage resources

2016

DEC

“Magnetotelluric and Audio Magnetotelluric Surveys” **study by Donald Thomas**

2022

DEC

LMD presents to HHC on **potential sites of Geothermal resources on HHLs**

2023

AUG

Geothermal Permitted Interaction Group (PIG) findings & recommendations

2025

JUN

NREL's Hawai'i/Aotearoa **Indigenous Knowledge Exchange ('IKE)**

2026

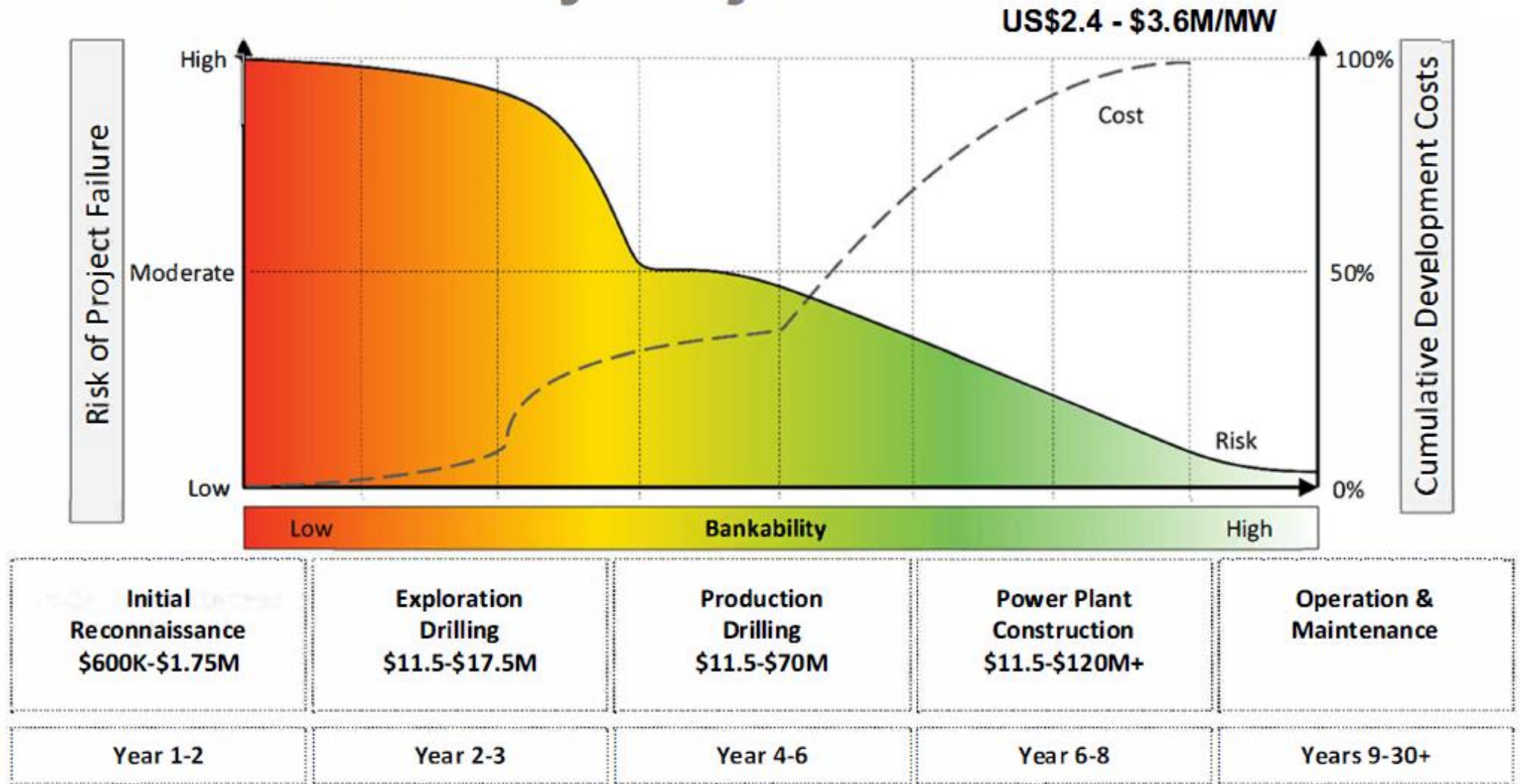
MAY

DHHL **Geothermal Beneficiary Informational Briefings** begin



'IKE FROM AOTEAROA

Geothermal Electricity Project



PAST DHHL ACTIONS RELATED TO GEOTHERMAL

2009

JAN

DHHL Ho‘omalūō Energy Policy
adopted by the HHC; Objective #2

2014

MAR

AG opinion 14-1:
entitled to 100% of royalties; sole authority to manage resources

2016

DEC

“Magnetotelluric and Audio Magnetotelluric Surveys” **study by Donald Thomas**

2022

DEC

LMD presents to HHC on **potential sites of Geothermal resources on HHLs**

2023

AUG

Geothermal Permitted Interaction Group (PIG) findings & recommendations

2025

JUN

NREL's Hawai'i/Aotearoa **Indigenous Knowledge Exchange**

2026

MAY

DHHL **Geothermal Beneficiary Informational Briefings begin**



GEO THERMAL 101



HONORING THE RESOURCE: PELE AND THE KĀNĀWAI

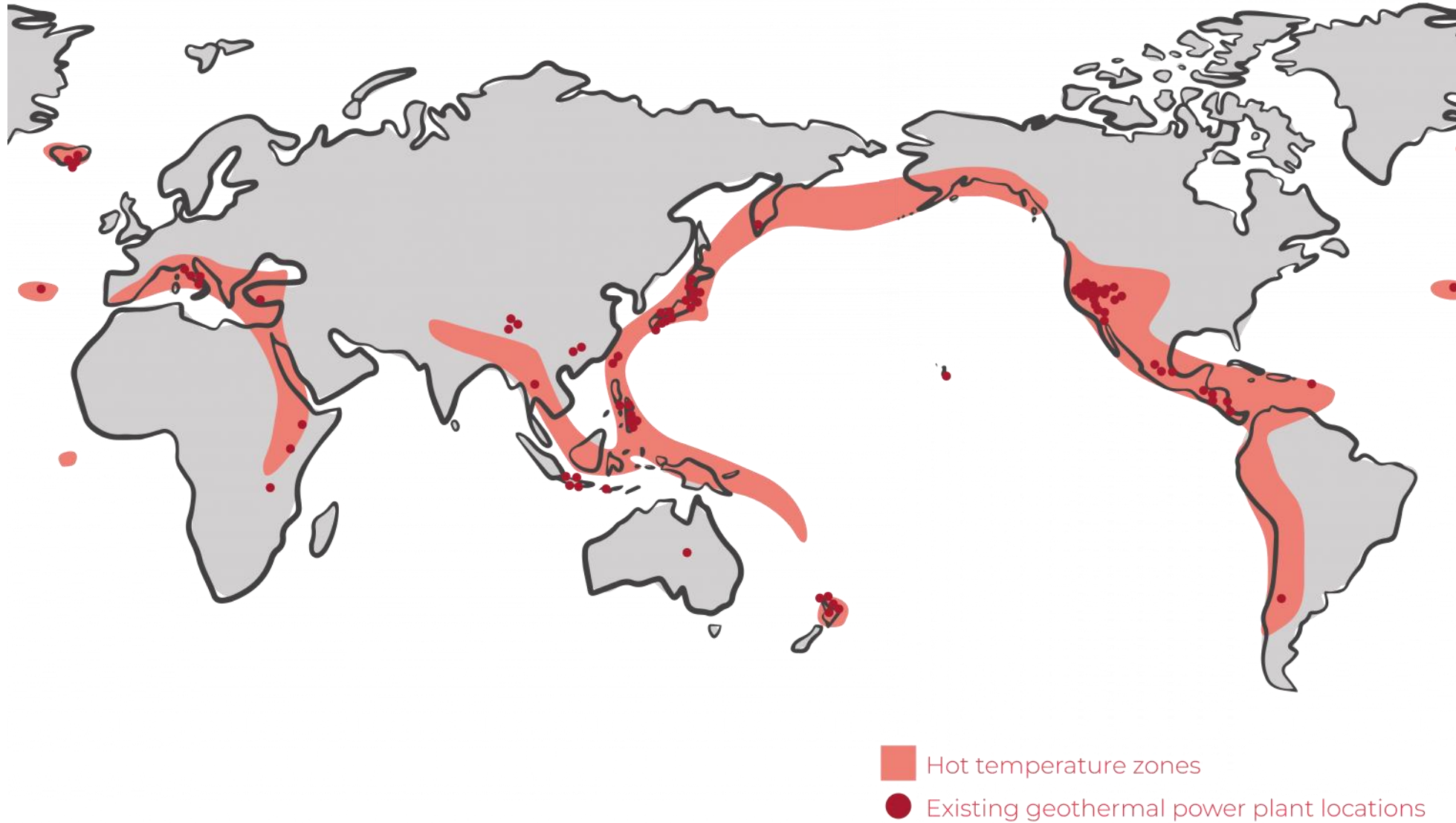
The Weight of Geothermal: DHHL acknowledges that geothermal energy is not merely a utility or a commodity. It is a manifestation of Pele and deeply connected to the living history of our pae ‘āina.

Ancestral Directives: We are currently seeking to better understand the Kānāwai (natural laws and edicts) that govern the balance between extraction and regeneration.

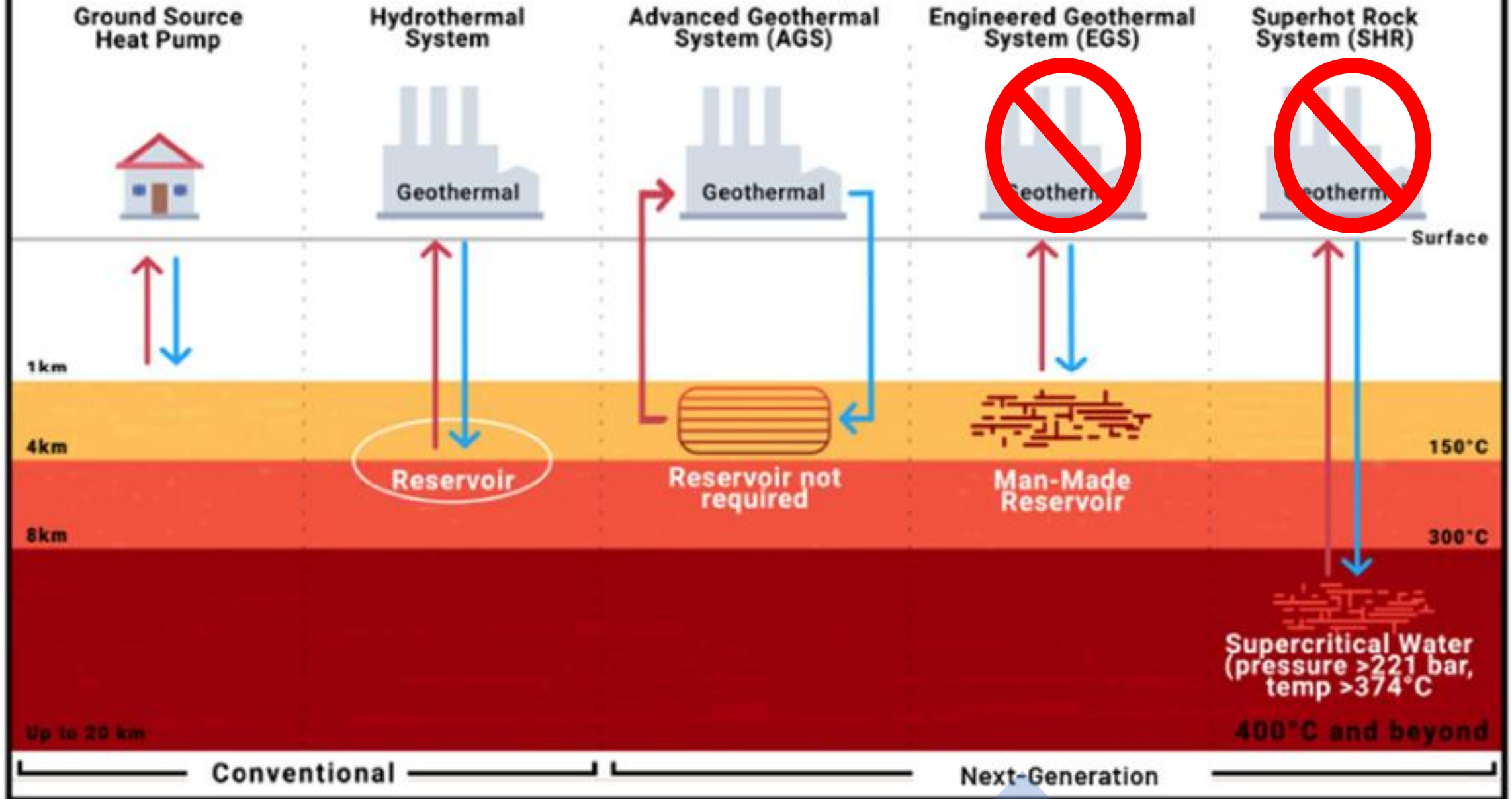
A Posture of Listening: As an agency, we are committed to learning from the cultural practitioners and community authorities who hold the genealogical ties to these resources.



GEO THERMAL RESOURCES - GLOBAL



Types of Geothermal Energy Systems





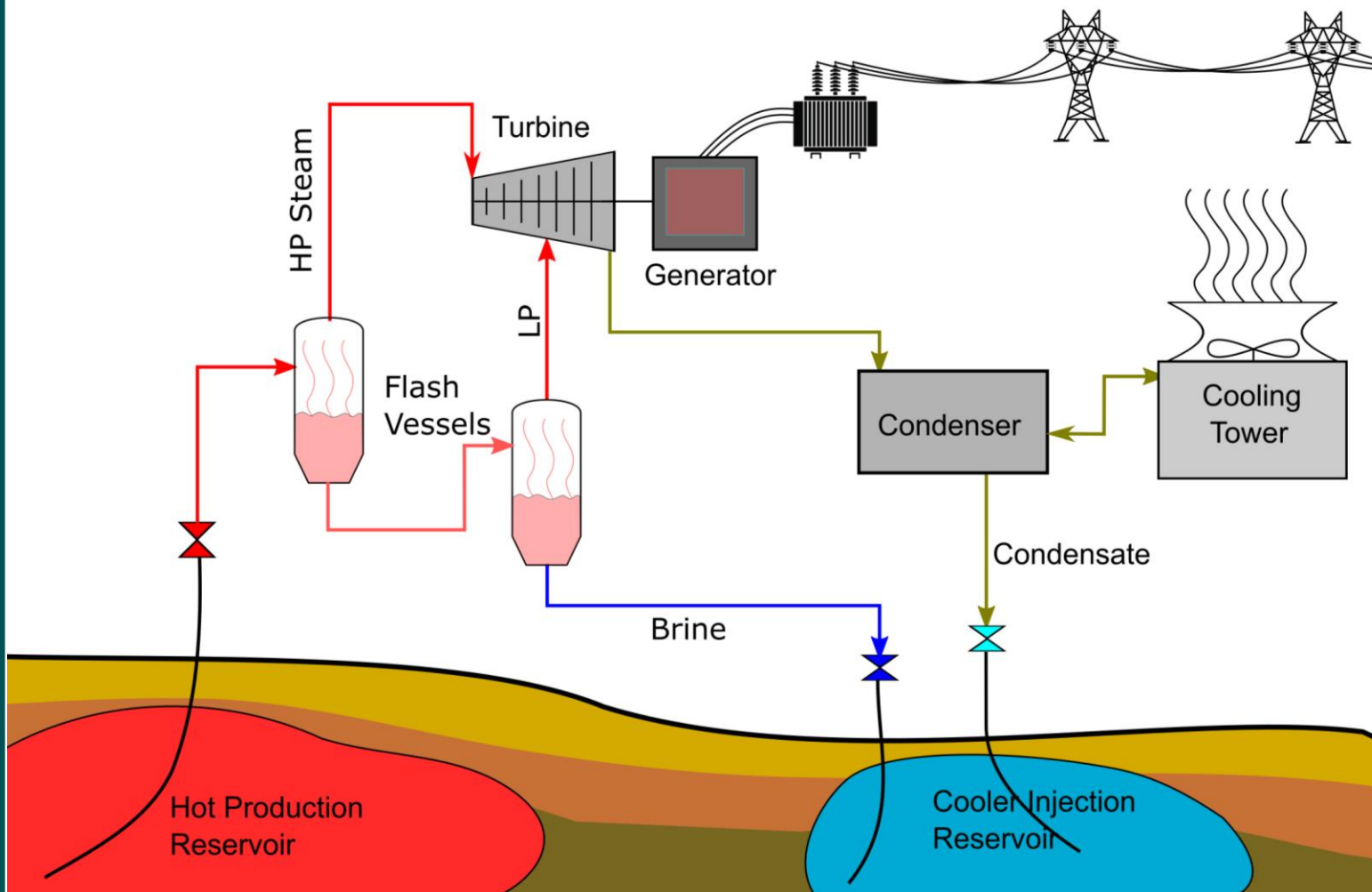
POWER PRODUCTION

- Electricity is generated by **geothermal steam or secondary fluids driving turbines**, which drive generators.
- Two of the most common methods of geothermal electricity generation are **Flash Steam and Binary Cycles**.



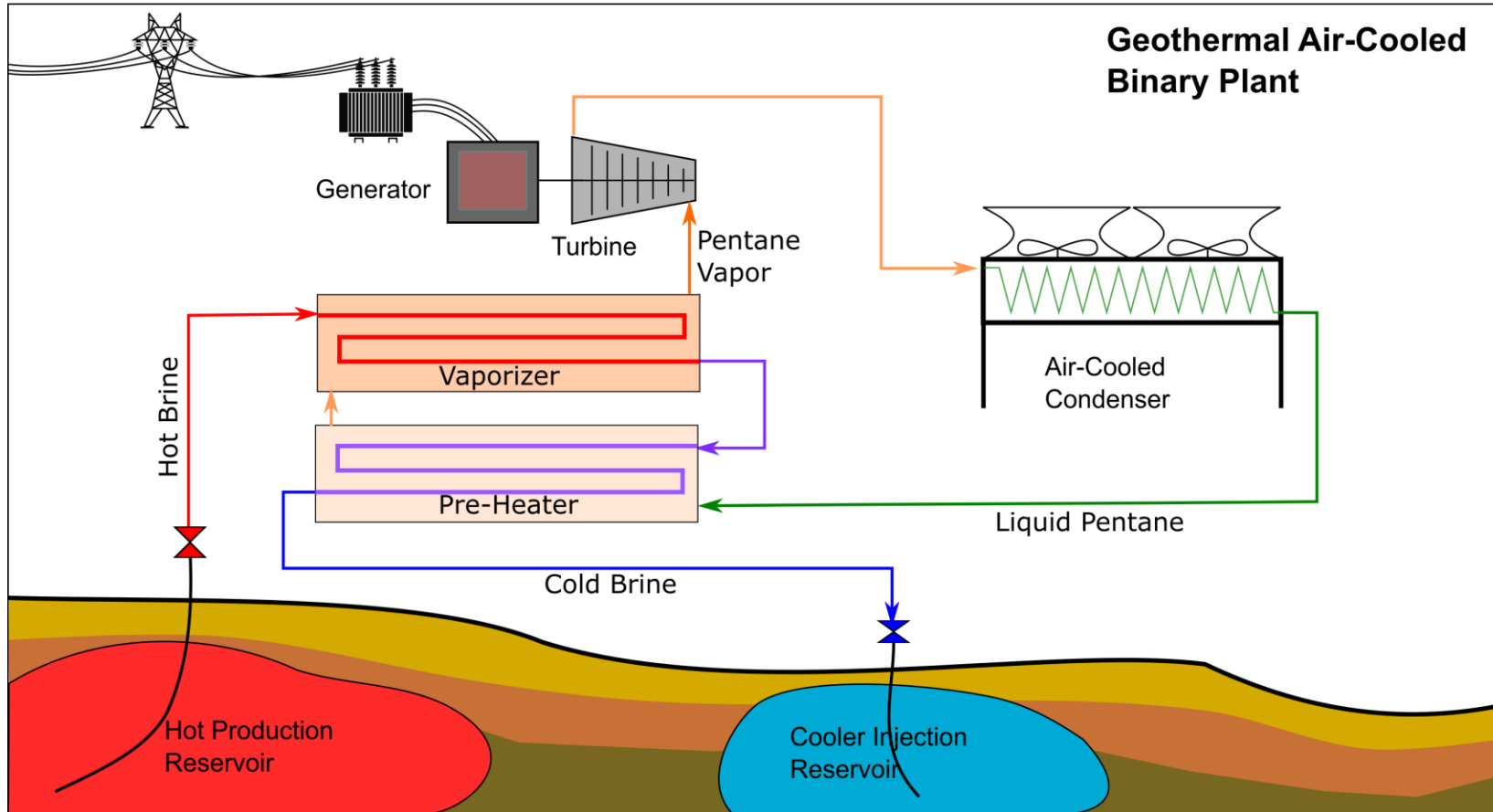


FLASH STEAM



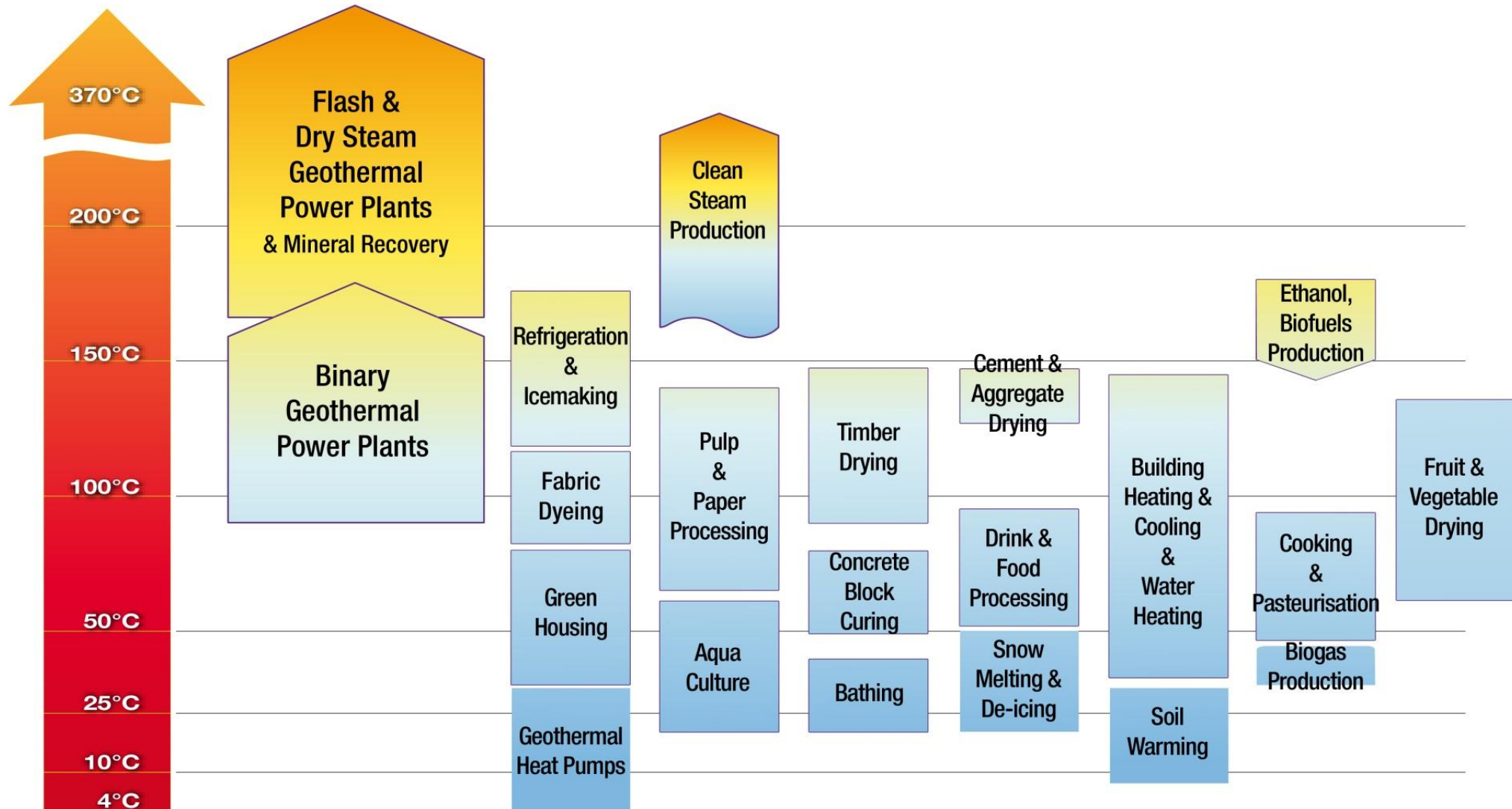


BINARY CYCLE



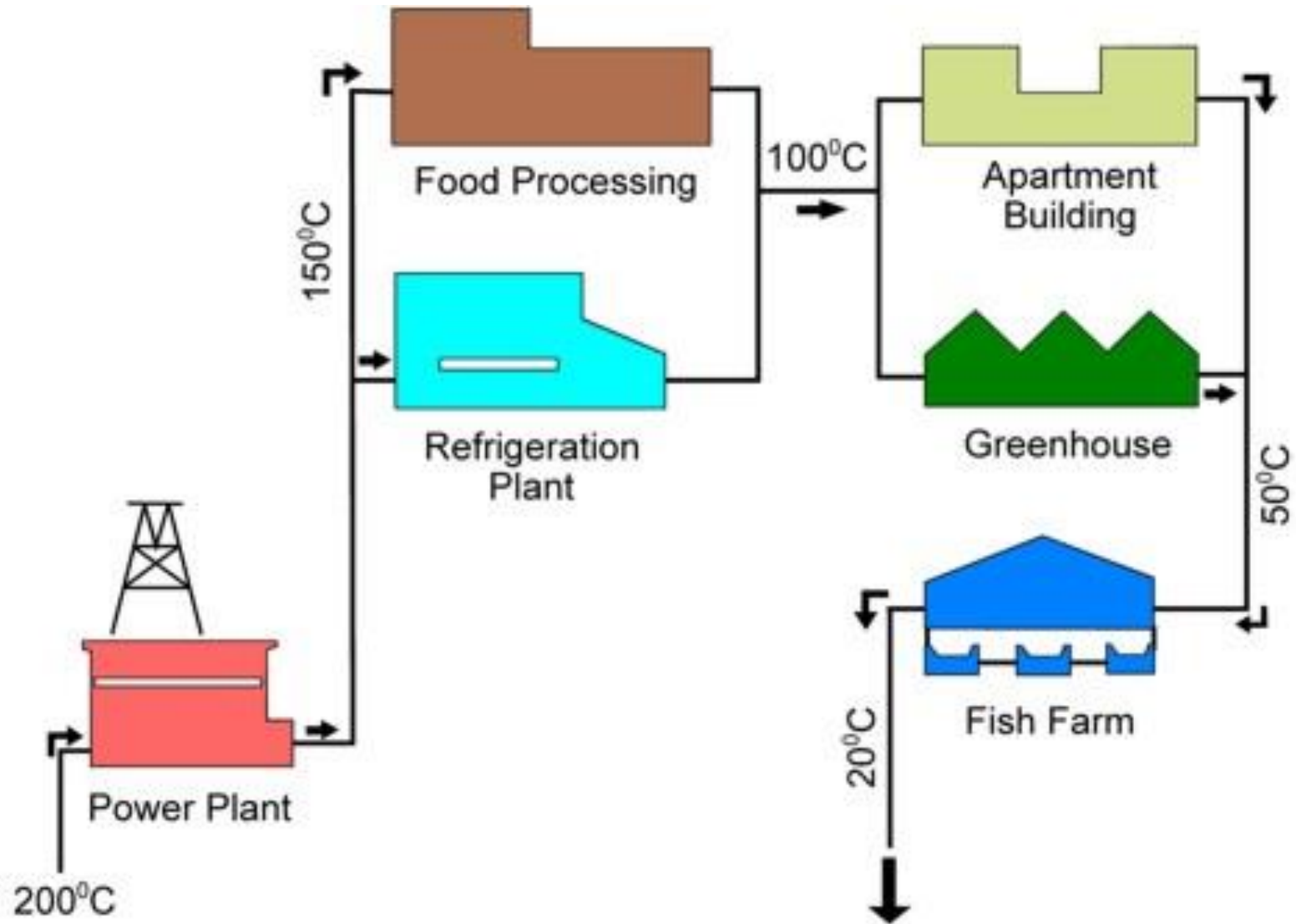


DIRECT USES





CASCADE USES





GEOSCIENCE 101



GEOSCIENCE – SITE VISIT

- **Ground truthing** - walk the site
- Assess **geology and topography**
- Transmission lines and **proximity to grid**
- General **site access**
- Identify potential **power station locations**
- Assess **suitability for heavy machinery**
- Seek out potential **direct use opportunities**
- Talk to locals, what have they noticed?



A geothermal system in New Zealand (Photo: Greg Bignall)



GEOSCIENCE - GEOCHEMISTRY

Fluids (water, steam & gasses) discharged from the geothermal system tell us a lot about what is happening deeper in the earth.

Typical **field team will take samples** (1-2 people) from hot springs, water wells and other water sources.



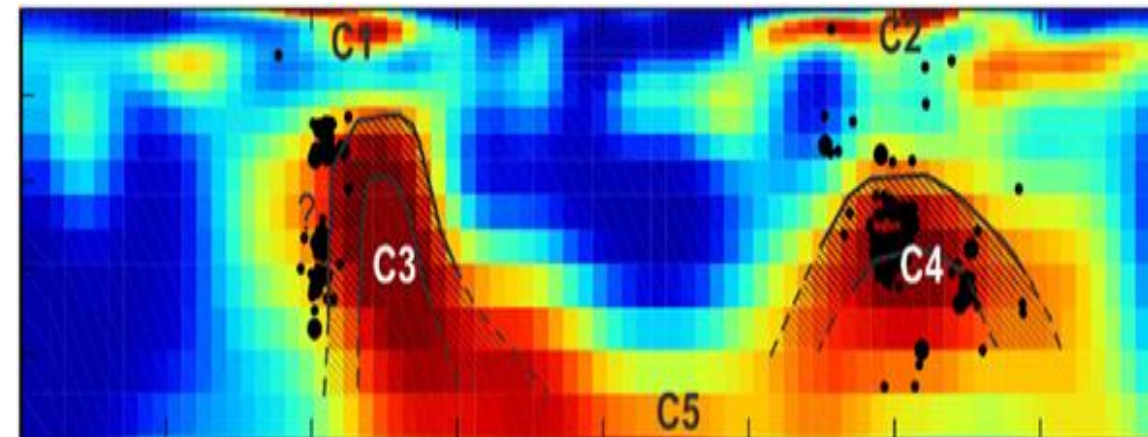
Image from: <https://www.usgs.gov/media/images/sampling-fumarole>

GEOSCIENCE – GEOPHYSICS: MT SURVEYS

- Field team of 2-4 people carrying equipment
- Data logger set on the ground and sensors connected by wires laid out on the ground surface.
- Coils and pots are buried 4-6” below the ground
- Left for 2-4 days to record and collect the data

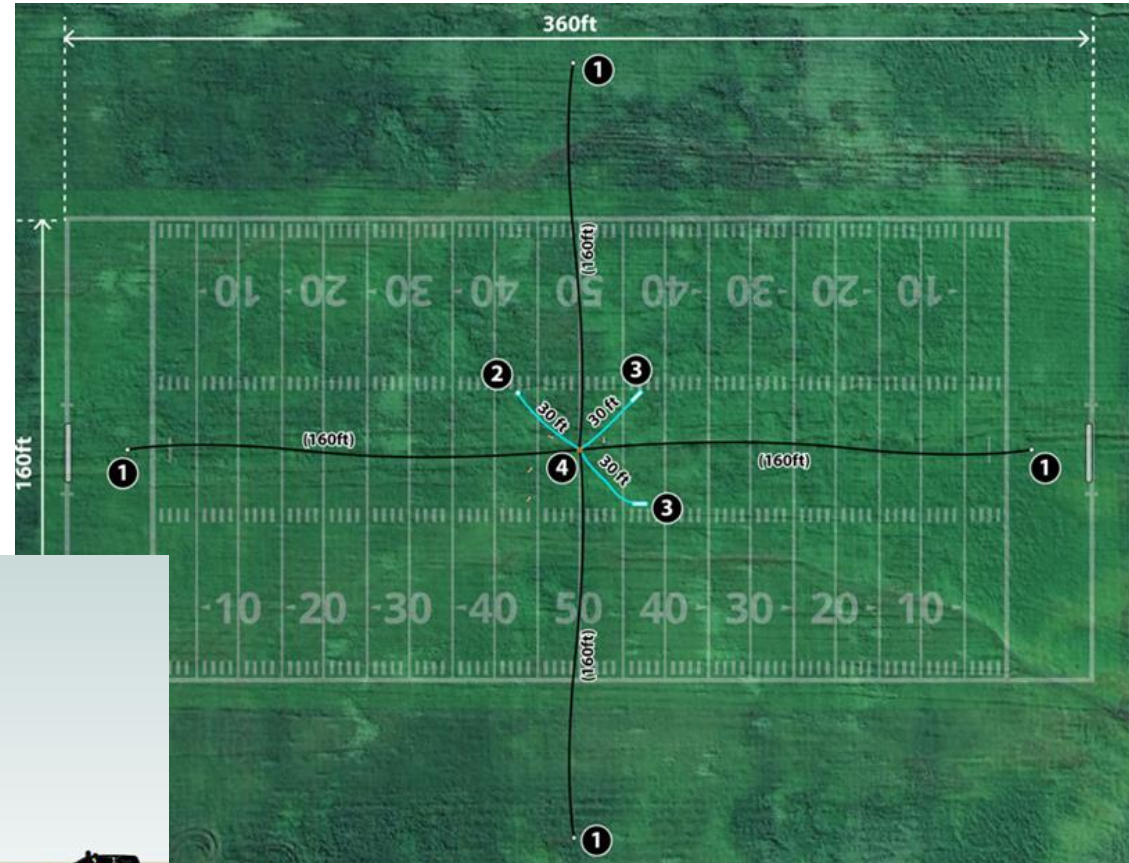


Induction coils (red tubes), Telluric sensors 'pots' (white cylinders), Data logger & GPS (grey case). Cables, battery, water and shovels.





MT SURVEYS LAYOUT



1 Telluric Sensor (pot)



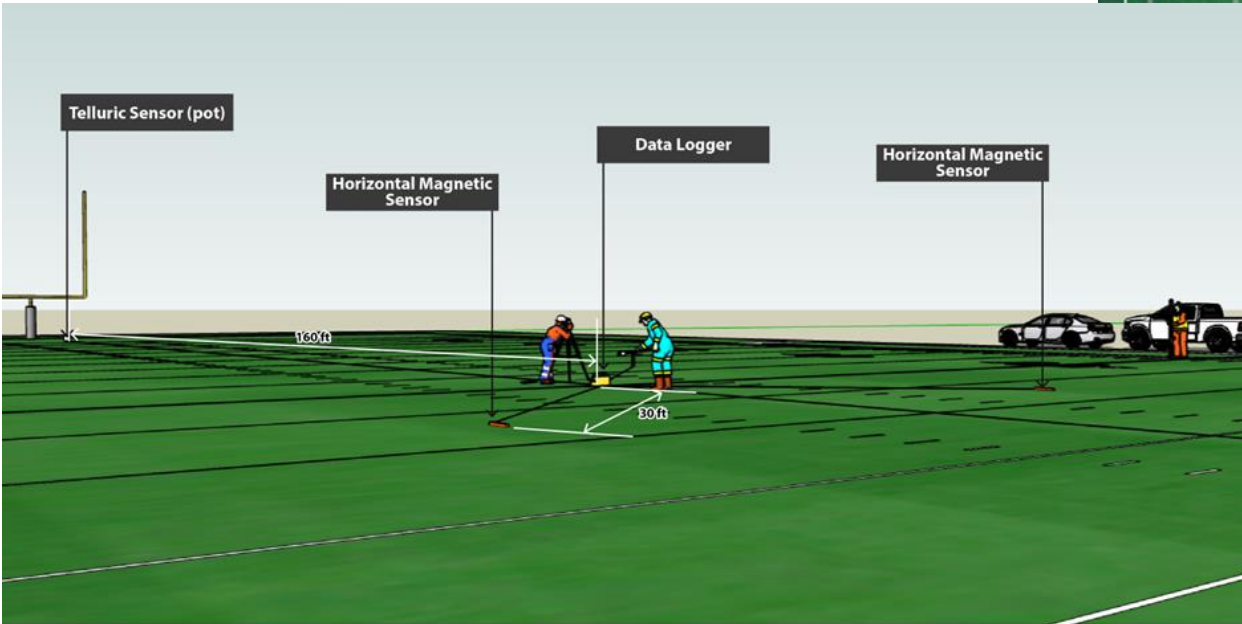
2 Vertical Magnetic Sensor (optional)



3 Horizontal Magnetic Sensor



4 Data Logger





GEOSCIENCE – GEOPHYSICS: GRAVITY

- Variation in Earth's gravity caused by difference in rock density
- Field person carries a gravimeter, places it on the ground and levels it to take a reading (few minutes)
- Lots of calculations to create map of underground density variations

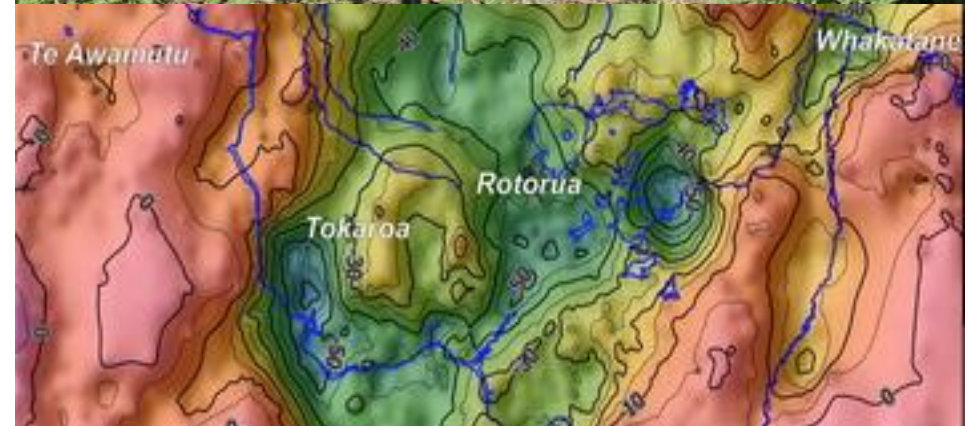


IMAGE Tagomori, K., Muraoka, H. (2026). General Exploration Methods Applied for Geothermal Development. In: Kasahara, J., Sato, K., Muraoka, H., Tagomori, K., Ito, N. (eds) Challenges in Geothermal Development. Advances in Geological Science. Springer, Singapore. https://doi.org/10.1007/978-981-95-0553-1_5



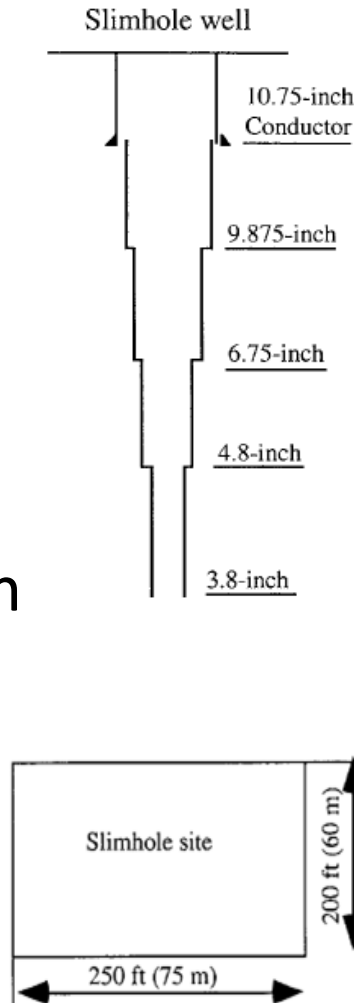
SLIM HOLE DRILLING (BORING) 101



SLIM HOLE DRILLING (BORING)

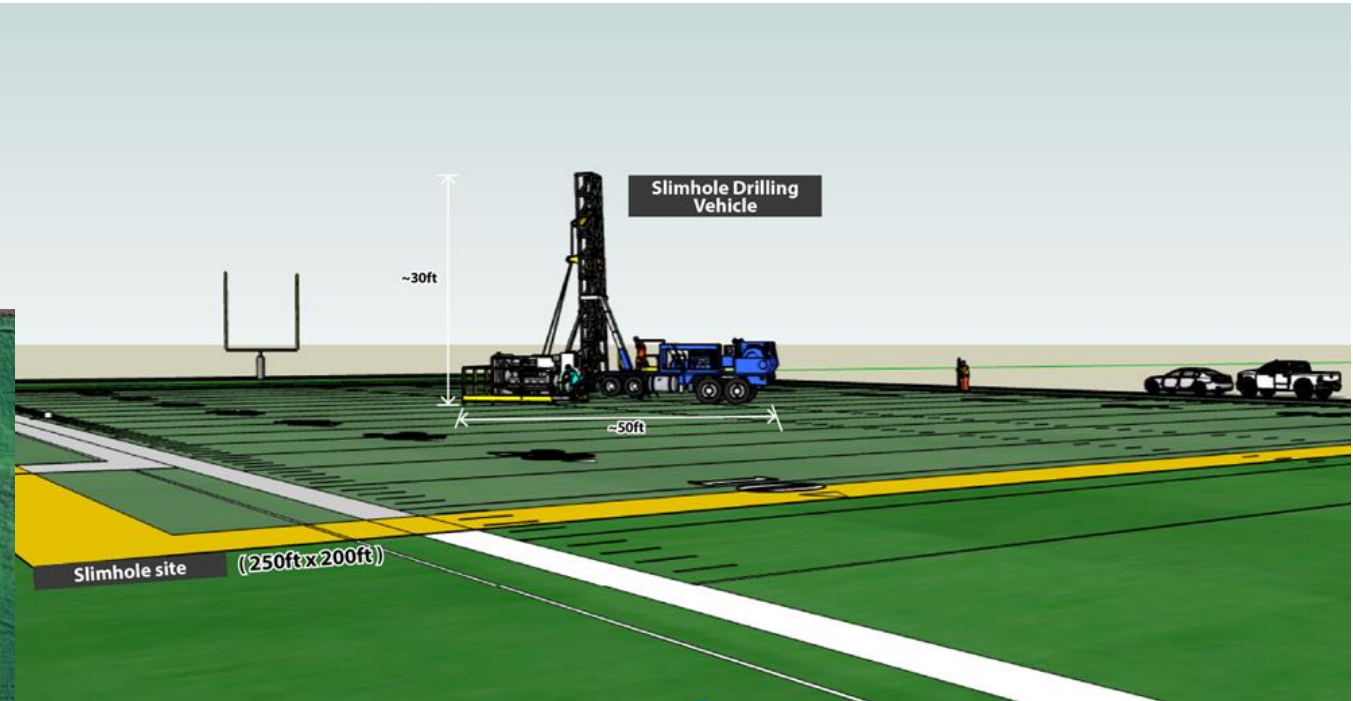
Used to explore the subsurface and validate geophysics and conceptual model. Tells us about the rocks, temperature and pressures.

- Water well sized rig transported on truck
- Small diameter wells (< 6")
- To depths 500-2000m
- Drill add cement to case the well
- Takes between 20 to 40 days





SLIM HOLE DRILLING LAYOUT

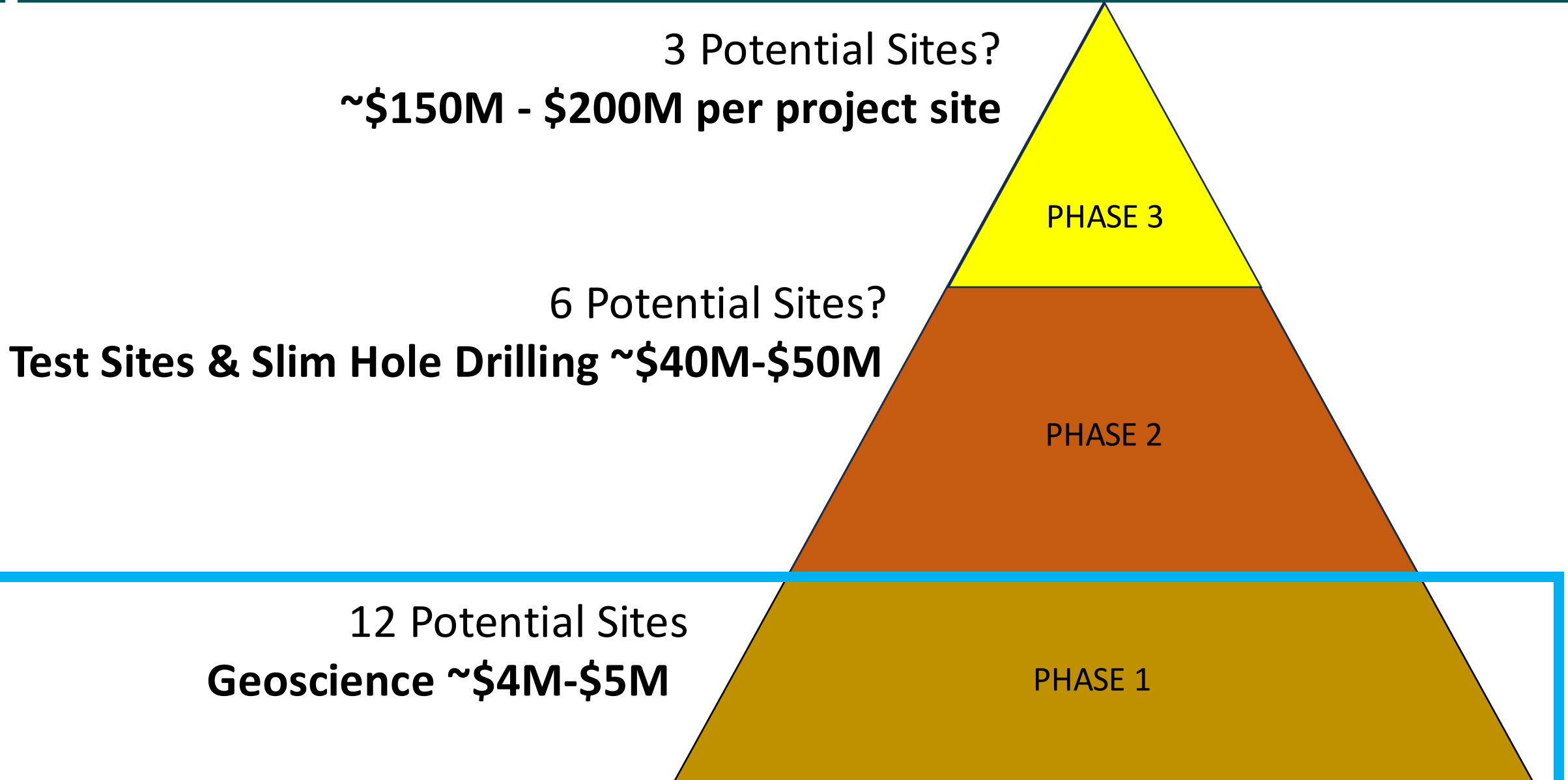





PHASED GEOTHERMAL PRODUCTION



PHASED GEOTHERMAL PRODUCTION





WHY STUDY GEO THERMAL RESOURCES ON HAWAIIAN HOME LANDS?



WHY STUDY GEOTHERMAL RESOURCES ON HHL?

- Fiduciary responsibility to **understand the resource**
- Potential **benefits to HHL Trust and beneficiaries**
- Hawai'i has extremely **high energy costs**
- Hawai'i **mandate for renewable energy**
- Geothermal is a type of **“firm” renewable energy**
- Ability to seek **guidance from indigenous** cousins in Aotearoa



EVOLVING OUR ENGAGEMENT

Learning from the Past: We recognize that standard town-hall formats can sometimes create division and defensiveness. We are actively exploring new ways to engage, focusing on smaller, more intimate discussions to ensure we are truly hearing the community's concerns.

Sincere Dialogue: We want to move beyond information sessions to genuine conversation. We hope to create space where community voice shapes our direction, not just our record.

Valuing Expertise: We want to ensure that the brilliance and knowledge held by our cultural practitioners inform our planning from the very beginning, and not just at the end.



A GENERATIONAL HORIZON: LOOKING TOWARD THE NEXT 150 YEARS

Beyond the Utility Bill: While reducing energy costs for beneficiaries is critical, we understand that true sustainability requires looking further ahead, across generations, not just budget cycles.

The Goal of Regeneration: We are evaluating how any potential development can result in the ultimate enhancement and resilience of both ‘āina and kānaka.

A Deliberate Pace: We are committed to moving at a pace that balances the fragility of our ‘āina with the real and present needs of our beneficiaries, because both deserve our full commitment.



The Māori experience

Mana Newton

Group CEO

Tauhara North No.2 Trust



- Tahu Matua was the first tupuna who landed in 1250 AD (pre-migration) – Manunuiarangi.
- Settled in Reporoa – Orakei Korako.
- Never left the land and have had continued AHIKAROA since the time he arrived in Aotearoa.



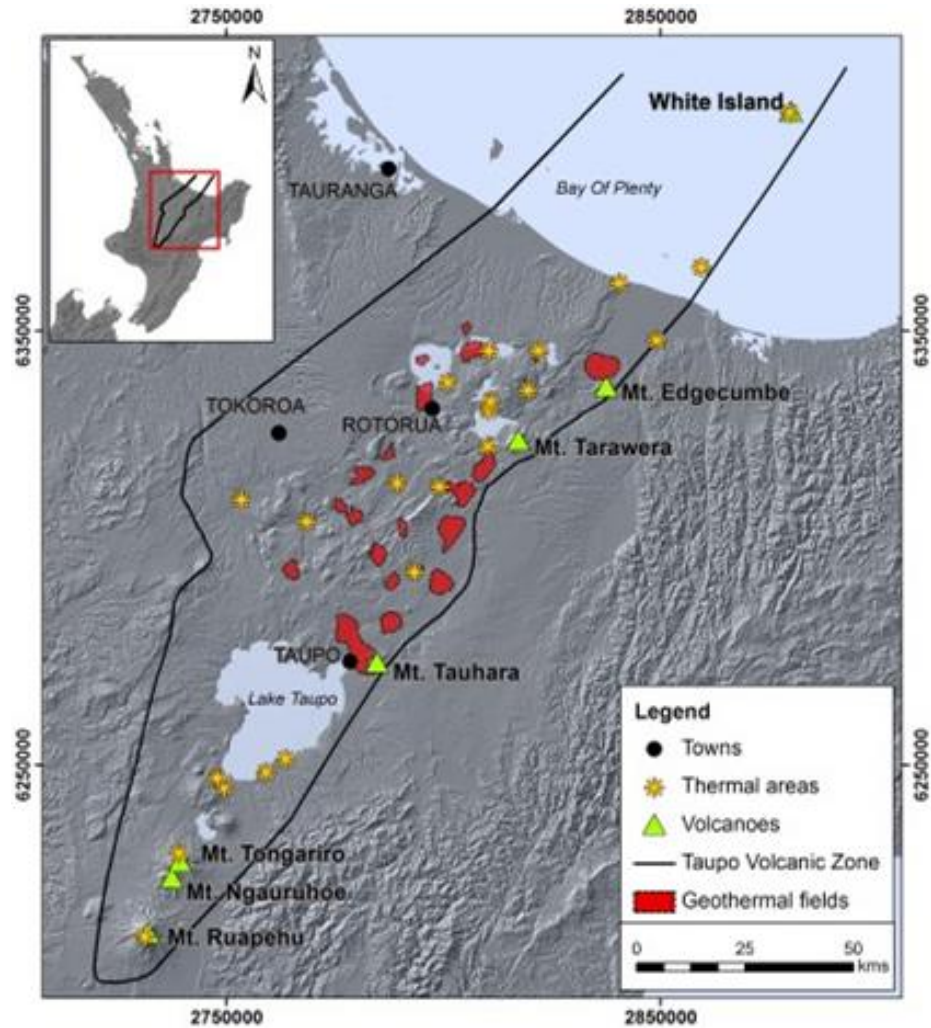
Ngati Tahu Ngati Whaoa History





Mana Newton - Our Rohe (Tribal Area)

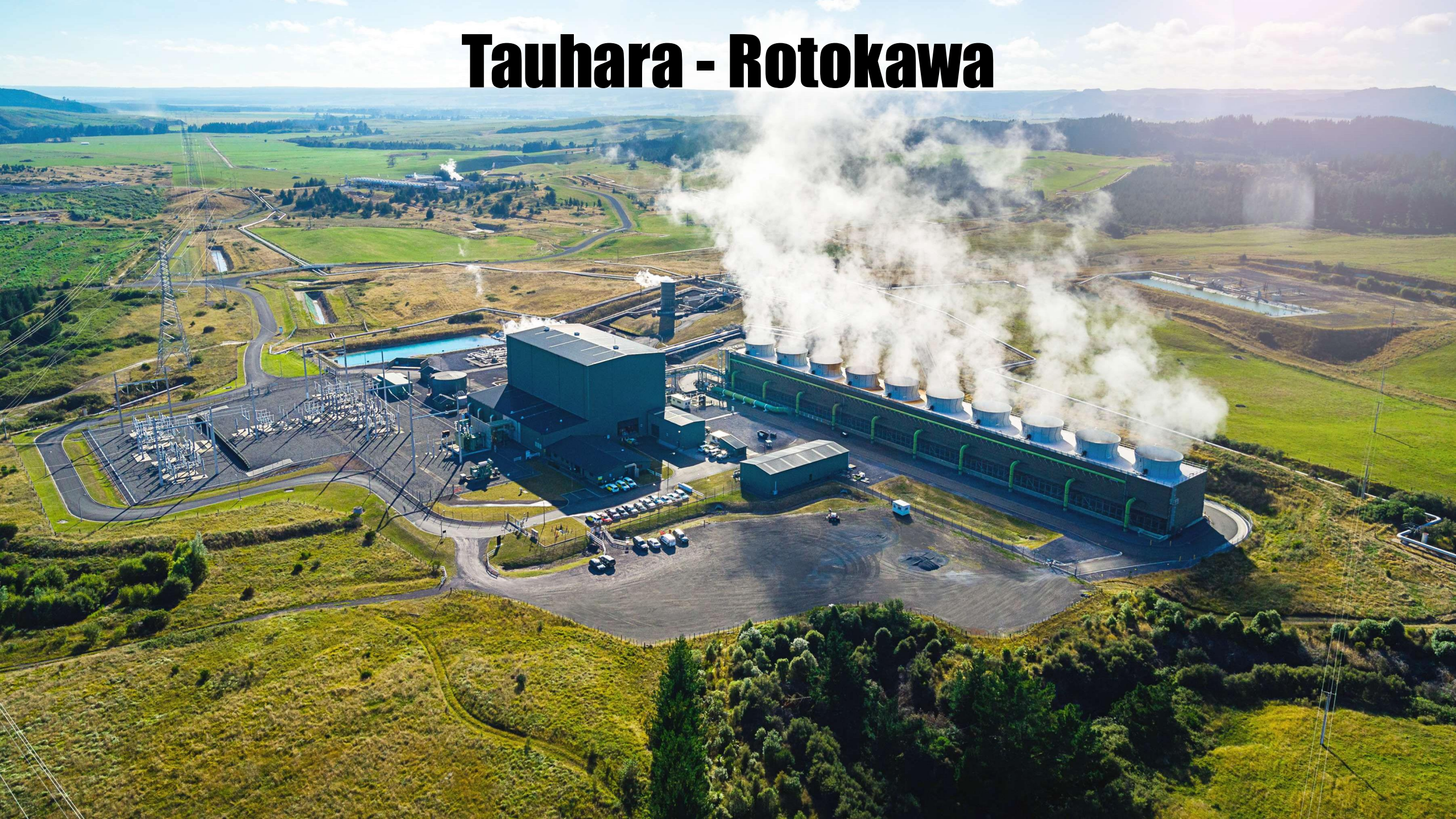
OUR IWI BOUNDRIES



Ohaki



Tauhara - Rotokawa





How we invest...



BENEFICIARY ENGAGEMENT

Initial Reconnaissance \$600K-\$1.75M	Exploration Drilling \$11.5-\$17.5M	Production Drilling \$11.5-\$70M	Power Plant Construction \$11.5-\$120M+	Operation & Maintenance
Year 1-2	Year 2-3	Year 4-6	Year 6-8	Years 9-30+

Info Briefing	*Possible Beneficiary Consultaion	Beneficiary Consultation and additional Consultation
DHHL staff conducts informational sessions with beneficiaries statewide	Any long-term land disposition triggers the DHHL Beneficiary Consultation Policy (2009)	Any long-term land disposition triggers the DHHL Beneficiary Consultation Policy (2009); additional consultation is also needed for compliance with Ch. 343, HRS; Ka Pa'akai Framework Analysis; use of Federal funds triggers compliance with federal regulations like NEPA and NHPA Section 106



NEXT STEPS

- Comment Period: **OPEN UNTIL JULY 31, 2026**

*****Google form & email comments accepted**

Website: www.dhhl.hawaii.gov/dhhl-geothermal-resources/

Email comments to: dhhl.planning@hawaii.gov

Questions on Geothermal Resources:

Russell K. Kaupu

*Property Development Agent
Office of the Chair*

91-5420 Kapolei Parkway, Kapolei, HI 96707

Office: (808) 730-0168 [voice]

Mobile: (808) 829-2630 [text]

russell.k.kaupu@hawaii.gov | www://dhhl.hawaii.gov

Scan & share mana'o:

