Getting started

The following entities and names will help you with the steps listed overleaf.

1. PlentyFlora
   - Energy user: PlentyFlora
   - Energy supplier: PlentyFlora

2. Tenon Mill
   - Energy user: Tenon Mill
   - Energy supplier: Contact Energy

Tenon's demand was a good fit with the geothermal energy available. Discussions with Contact Energy on requirements were successful because of the proximity of industry to the supply point. Capital cost verses annual payments between the parties was critical.

GNS ran resistivity assessments over part of the property adjacent to the existing glasshouses to help determine the optimum spot for drilling to locate the second bore. They further advised that the hottest water would be at a depth of about 170m.

A resource consent was sought from Environment Waikato for the proposed second bore. There were some issues with possible impacts on surrounding properties and it took two years before Environment Waikato were satisfied to issue the new consent. The original consent for the first bore was also reissued.

PlentyFlora had two parties involved in the development. One was the well driller responsible for drilling, casing and setting up both the extraction and re-injection bores. The other was the technical consultant responsible for all the systems and commissioning the system.

There were various potential structures for a Geothermal Energy Supply Agreement, dependent on who was paying the capital and operational costs, who owned which piece of infrastructure, level of reliability required, counter party risks and term of agreement required.

PlentyFlora initially used diesel heating to supplement the original geothermal bore. This has now been discontinued with the introduction of the heat from the second bore. Costs to run both systems are electricity to drive some pumps, maintenance and an annual fee to Environment Waikato.

Contact Energy supplied the heat plant/exchanger and infrastructure such as the connecting pipeline to the Tenon site in order to supply energy. Tenon then had to build its own plant for their timber processing industry.

Do you own land with a geothermal resource?

This brochure gives a brief overview of the steps you will need to take, to develop your geothermal resource.
How do I develop my geothermal resource?

If you are a landowner with access to a geothermal heat resource, you must take the following steps before you can use or develop that resource. If you are unsure whether you have a geothermal resource on your land, you will still need to start this process to find out. The NZGSA website also contains potential resources.

What initial research should I do?

Find out what information is already available: Speak to the Taupō, Kawai, Tauranga or Rotorua Lakes Council and either the Waikato Regional Council or the Bay of Plenty Regional Council (depending on your area), to see what information they hold about your land.

Find out who legally owns your land: This is important because the Certificate of Title belonging to your land and the interests registered on it may affect how you can use your land. Depending on the outcome, you may need legal advice at this point.

Find out the physical limitations of your land: Locations, accessibility, vegetation, services and/ or cultural issues can impact how you might use your geothermal resource. Consultants, councils and government organisations can help you prepare a Concept Plan that will show any limitations and the best location for possible developments.

Find out what your regulatory requirements are: There are certain regulations rules around takes and discharges of geothermal resources. These can differ slightly from area to area. Your Regional Council manages the use and extraction of the resources and your District Council is concerned with the actual activity and its operations. You will need to speak to both and may need Resource Consents.

What technical assessment should I do?

Begin some initial testing: You will need to test and prove the sustainability of your resource and understand how big it is. You might have surface springs/hot water or you might have underground untapped geothermal heat. You will need to get a consultant to carry out this study and you may need consents for earthworks or test drilling.

Narrow down your options: Once all this data has been analysed, you will have a clearer idea of what you can use your geothermal resource for. Once you have decided, you may need further testing and drilling to determine the scope of the development.

Partnering with existing operators: You can sometimes be the best option, either using “spare” energy from an existing operation (ie; Prawn Farm or Ohaki Thermal Kilns) or providing energy from your land to an existing operator and avoiding expensive capital investment.

What resource consents do I need?

Regional Council consents: Regional Councils will assess your application and work out how others might be affected in the extraction of the fluid or energy from your resource and what the impact on the wider geothermal resource might be. You will need to apply for a resource consent for your take and discharge. Check your regional plan for what is required, or give your regional council a call. The BOI is working through a Geothermal Plan Change within its Regional Policy. Its staff can explain how this may impact your plans.

District Council consents: District Councils are concerned with the activity on the land where the geothermal resource is located, and any other associated land use. Again, if the activities you propose are permitted within the District Plan, you do not need a Resource Consent. However, there are also Development Controls which cover things like size of buildings, hours of operation and noise. If your activities do not comply with these, you may still need a consent.

What is involved in development?

This stage may involve many layers of advisors and suppliers. Timelines and costs will depend on what kind of project you are doing. See examples overleaf showing how local companies have developed their resource.

What commercial options do I have?

Decide on the best course of action: Now that you have identified a use for your geothermal resource, your advisors and consultants will be able to put together a Project Plan for you.

Make sure you understand all the costs involved: Your advisors will help you assess the costs for things like consents, contracts, production, monitoring and testing. They will also work out the commercial potential to make sure you get the desired results from your investment.

What kinds of activity can I develop?

There are a number of uses for geothermal heat. The chart below shows some of the activities available at different temperatures.