



2023 TOP 100 GOOD PRACTICE STORY

Title: Geothermal Power Plant to be Built by All 30 Households ~Toward the Realization of a Recycling-Oriented Economy~

Destination, Country: Oguni Town, Japan

Submitted by: Yoshiori Anai / Oguni-Town Sustainability Coordinator

In the category: Destination Management Environment & Climate Thriving Communities
 Nature & Scenery Culture & Tradition Business & Marketing

The Story in a picture:
Effective use of geothermal energy in the Waita area



Summary:

(1) In the depopulated Waita area, it is becoming increasingly difficult to hold local events (open burning, cleanups, Bon dances, festivals, etc.). Therefore, a limited liability company, Waitakai LLC, was established to potentially revitalize the community by conducting a geothermal power





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plant to generate geothermal energy as a local resource. However, some local residents were reluctant to engage in geothermal power generation, fearing that it would deplete their hot spring resources.

(2) The LLC, however, was determined to balance the revitalization of the local community and conservation of the hot spring resources by conducting geothermal power generation. Waitakai carefully explained that regular monitoring would be conducted to ensure that the resources would not be depleted and that the control of the geothermal power plant would be determined by the LLC, with parts of the profits would be earmarked for the benefit of the local community.

(3) The company was able to start the geothermal power generation business. All 30 households in the Waita area became officers of the Waitakai LLC, with a portion of the profits used to improve the community center and tourist attractions. Local volunteer females began making okowa and steamed buns using local ingredients at the community center. This has created a circular economy in the Waita area.



Good Practice Story:

Destination description

Brief background of the destination.

The Waita area is a hot spring resort located at the foot of Mount Waita, the symbol of Oguni Town, Kumamoto Prefecture.

Oguni Town, located in the northern part of Aso, is home to Nabegataki Falls, one of the most popular geo-sites in the Aso Geopark. The Waita area is a popular tourist destination, with geothermal steam rising from all parts of the village, with five hot-spring inns and three day-spa facilities. Residents of the Waita area use geothermal energy on a daily basis for cooking, drying facilities, bathing and heating.

The Waita area's day-trip hot springs are popular for their private baths, and the system is unique in that new hot water is added when money is inserted. Visitors can also enjoy steaming vegetables and other foods in a steaming area called "jigoku-mushi" (steaming in hell). The area with lots of steam is a popular photogenic spot.

The Waita area, rich in geothermal resources, is an attractive and popular tourist destination.

Issues faced

Problems/issues solved with the Good Practice Story.

The following issues were cited:

- Depopulation had made it difficult to carry out local activities.
- Population decline due to aging population and young people going away to work.
- Steam is everywhere, making it dangerous for tourists.
- Geothermal energy is not being used effectively for purposes other than daily life.
- A business partner is needed who can operate geothermal power generation provide support to Waitakai LLC.

Methods, steps, and tools applied

Solutions implemented to address the sustainability problems or issues.

The following details were agreed upon by the Waitakai, a limited liability company, and the project was approved by all 30 households.

- The power output will be reduced to 1/10 of 1,995kw, based on the premise of "protecting the hot springs and the surrounding environment.

- Monitoring of pressure, temperature, flow rate, composition, etc., will be conducted at the spring source near the power plant.
- Furusato Netsu-den Co., Ltd., the contractor of the project, will take measures such as diversion of hot spring water if there is any impact on the hot springs.
- The LLC will be able to control the operation of the geothermal power plant.

2011

Establishment of Waitakai (26 households)

Furusato Netsu-den Co., Ltd. was selected as a partner company.

2015

Waita geothermal power plant starts operation

All 30 households joined

Monitoring

2020

Signing of agreement on Geothermal Resource Utilization Council (Oguni Town)

- Monitoring

Monitoring of temperature, pressure, flow rate, EC, and component analysis is conducted at 13 locations, including production and reduction wells. The results of monitoring are reported monthly at regular meetings, and can also be accessed via smartphone at any time.

- Conclusion of Agreement on Geothermal Resource Utilization Council

Oguni Town and five geothermal companies concluded an agreement on the Oguni Town Geothermal Resource Utilization Council.

The purpose of this agreement is to create a prosperous future by promoting the appropriate use of geothermal resources with the understanding and cooperation of geothermal developers, existing hot spring operators, and local residents.

The specifics of the agreement include: implementation of common monitoring and reporting requirements for independent monitoring; establishment of a geothermal blessing fund system for regional development measures and accident compensation; insurance coverage for damages caused by geothermal development projects; and alternative measures in the event that insurance coverage is not available.

Key success factors

Critical elements that led to successfully solving the issues.

This project was realized in collaboration with the following stakeholders:

- Waitakai LLC (local residents, 30 households in total)

The residents' commitment to the community led to the establishment of Waitakai LLC.

- Furusato Netsu-den Co., Ltd.

Furusato Netsu-den Co., Ltd. operates the Waita geothermal power plant as a partner in line with the management policy of Waitakai.

The company also grows basil and mint in thermal greenhouses (taken over from Waitakai).

Lessons learned

Challenges faced while implementing the Good Practice and their solutions.

The challenges faced were as follow:

- It was difficult for Waitakai LLC to obtain the agreement of all 30 households due to concerns about the depletion of underground resources.

→However, the group was able to obtain the agreement of all households and implement the geothermal power generation project by regularly monitoring underground resources and sharing information on monitoring results at monthly meetings and via smartphones, and by agreeing to control the operation of the geothermal power plant according to changes in the underground resources.

Achievements and Results

Direct and indirect results of the Good Practice.

The main benefits of the project are as follow:

- Monitoring of underground resources has protected hot spring resources and tourist attractions.
- The project has improved the area where the geothermal steam was generated with a portion of the proceeds.

→The hazardous area where geothermal steam is generated has been improved.

→A steaming area was developed and a system was created to charge a fee for the use of the steaming area.

→In the development of the community center, women in the community started a new business using the kitchen.

(Contributing to the local traditional food culture --wild vegetable okowa, steamed buns)

- New stores opened and events were held that had not been held in the past, which revitalized the community.

- There were U-turns or former residents returning (2 people).
- The salaries of the association have been added to the residents' income.
- Employment opportunities were created. (geothermal power plant, thermal greenhouses, etc.)
- Hot water generated from geothermal power generation is distributed to all households.

Tips for other destinations

Your suggestions or recommendations for other destinations facing the same issues or implementing similar solutions

- It is important to establish a system that allows control of power generation according to the status of geothermal resources by establishing a company with all households in the region and outsourcing the operation of geothermal power generation. (Includes a mechanism that allows local residents to voice their opinions)
- It is important to hold regular meetings (once a month for general meetings and once a week for executive board meetings in the Waitakai) to share information on the status of power generation and monitoring of geothermal resources, and to make all households aware of the importance of their own participation in the project.
- The company will return a portion of the profits from geothermal power generation to the community and the town to help revitalize the community.

Recognitions and Additional references

Recognitions and awards the Good Practice received and supporting evidence.

1. Waitakai LLC homepage
2. Furusato Netsu-den Co., Ltd. homepage
3. Oguni Town Hall homepage