

Geophysical Campaign

GeoCogen La Broye

General FAQ

1. UNDERSTANDING GEOTHERMAL ENERGY

What is geothermal energy?

Geothermal energy involves using the heat naturally present in the ground to produce energy.

Depending on the depth and temperature targeted, different technologies can be used: shallow geothermal probes combined with heat pumps, up to deep geothermal systems that tap resources at higher temperatures.

Is geothermal energy a renewable source?

Yes. Heat from the earth is a naturally available energy resource that is continuously renewed. Unlike solar or wind power, geothermal energy can be used continuously, independent of weather conditions and the seasons.

It also has a low environmental impact during operation, with a limited surface footprint and very low greenhouse gas emissions. It therefore helps reduce reliance on fossil fuels while producing local energy.

What can geothermal energy be used for?

Geothermal energy can meet a range of energy needs. It can be used to heat or cool buildings, supply district heating networks, and, when the resource temperature is high enough, generate electricity.

Shallow systems are typically used with heat pumps for buildings. In deep geothermal systems, naturally hot water present underground can be brought to the surface to recover its heat, then reinjected once cooled.

2. THE GEOCOGEN LA BROYE PROJECT AND THE GEOPHYSICAL CAMPAIGN

What is GeoCogen La Broye?

GeoCogen La Broye is a deep geothermal project led by Swiss Geo Energy. It aims to harness underground heat to produce renewable heat and electricity.

The project is currently in the exploration phase. The 3D geophysical campaign will help determine whether the region's subsurface has the conditions being sought, and improve understanding of it before the next exploration steps are defined.

What type of geothermal resource is the project targeting?

GeoCogen La Broye is studying what is known as a hydrothermal concept: the aim is to tap hot water that occurs naturally and circulates through faults and permeable layers underground. The geophysical campaign is specifically intended to help locate these natural structures. The resource being sought is therefore a natural circulation of hot water already present underground. The project is currently targeting depths of around 3,500 metres.

Why carry out this campaign in the La Broye region?

Existing geological data show that the region has characteristics that merit closer study. The 3D campaign will provide a much more detailed picture of the deep subsurface structures at a regional scale, reducing uncertainty before considering the next steps of the project.

How do geophysical measurements produce an image of the subsurface?

This is a subsurface imaging method carried out from the surface. Vibrator trucks send controlled vibrations into the ground using a metal plate. The resulting acoustic waves travel through the different layers of the subsurface.

When they encounter a boundary between rocks with different properties, part of these waves is reflected back to the surface, where it is recorded by sensors.

By combining measurements recorded at a large number of points and processing them, geophysicists can reconstruct a three-dimensional image of the subsurface structures.

On lakes, the principle is similar: waves are emitted from a specially equipped boat and recorded by sensors temporarily placed on the lakebed.

This can be compared, in simplified terms, to an ultrasound scan of the subsurface. No drilling is carried out as part of this geophysical campaign.

What exactly do the sensors record?

The sensors record only the ground movements needed for the geophysical campaign. They do not record conversations, images, or personal data.

The technical data associated with the measurements include the sensor's position and timestamp.

Who oversees the campaign?

The campaign is carried out within a regulatory framework and under the supervision of the competent authorities.

Technical teams, relevant experts and cantonal services ensure compliance with applicable requirements regarding safety, the environment, noise and vibration.

Who is funding the campaign?

The campaign is funded by Swiss Geo Energy, with support from the Swiss Confederation covering 60% of the costs. No funding is requested from municipalities or residents.

3. PRACTICAL INFORMATION

What area will be covered?

The campaign will cover approximately 500 km², across the cantons of Vaud, Fribourg and Bern. Teams will work successively across the different sectors.

The campaign involves installing around 30,000 land-based sensors, plus a further 20,000 sensors for the lake acquisition.

When will the different operations take place?

The campaign comprises several phases that follow on from one another and partly overlap:

- November 2026 to March 2027: surveying, scouting and marking of locations;
- December 2026 to end of February 2027: progressive deployment of sensors;
- January to end of March 2027: land and lake geophysical acquisition;
- End of February to April 2027: sensor retrieval and site restoration.

The period during which teams may be visible on the ground is therefore longer than the acquisition period itself.

Why is the campaign taking place in winter?

Winter limits the impact of operations on crops and farm work. This period was also chosen to meet environmental requirements set by the competent authorities and other regional stakeholders, in particular to protect wildlife and take spawning periods into account, especially for fish in Lake Neuchâtel and Lake Morat.

What will I see on the ground?

Depending on the phase of the campaign, you may see:

- Teams carrying out topographic surveys, placing temporary markers or stakes to indicate certain locations;
- Teams installing or retrieving sensors;
- Sensors temporarily placed on the ground;
- Technical vehicles and, during acquisition, vibrator trucks travelling on the relevant roads and access routes.

This equipment is temporary and will be removed at the end of operations.

Why is there paint or stakes on the ground, and will they remain after the campaign?

These markings allow teams to precisely identify the locations planned for the various operations.

The paint used is biodegradable and disappears naturally. Stakes and other temporary equipment are removed after operations. No permanent installation is left in place once the campaign is complete.

How many vibrator trucks will be used?

The land campaign involves three fleets, each made up of two vibrator trucks – six trucks in total.

They will not all operate simultaneously at the same location. The different fleets will progress across several sectors of the acquisition area.

What time will the trucks be operating?

Land acquisition will take place at night, between 10pm and 6am.

Night-time offers better measurement conditions, thanks to a quieter environment and less traffic. It also helps limit the impact on daily activities. In winter, with windows generally closed, the perceived noise inside homes is also reduced.

How long will operations last near my home?

The campaign covers a large area, but operations progress sector by sector. A given neighbourhood will therefore not be affected for the entire duration of the campaign.

As a rule, truck passes in a given neighbourhood will be concentrated on a single night. However, if a team stops operations at the end of the night, it may need to resume at the same point from 10pm the following night. In these transition zones, two passes at different times may therefore be needed.

Updated information will let residents know the expected schedule of truck passes in their sector.

How long does a truck stay at one point?

The truck stops for about 40 seconds at each measurement point, then moves forward about 40 metres to the next point. A full cycle – including setup, vibration and moving on – therefore takes around two minutes.

For a resident, trucks passing near their home represent around ten minutes in total.

Will roads remain open during operations?

Yes. Traffic will be maintained and no road closures are planned.

Brief slowdowns may occur while trucks are taking a measurement. Traffic control staff will accompany operations to ensure road user safety and keep traffic flowing.

4. IMPACTS AND SAFETY

Will I hear noise at night?

Yes. Near a passing vibrator truck, noise from the vehicle's operation and the vibration phase will be noticeable for a few minutes.

When the truck is moving, the noise is comparable to a piece of farm machinery passing by. During the vibration phase, it is comparable to road construction equipment, such as a vibrating plate or a roller compactor.

The sensors themselves are passive and generate no noise or vibration.

Will I feel vibrations in my home?

In the immediate vicinity of a measurement point, when the truck emits its vibration, it is possible to temporarily feel vibrations.

The sensation can be compared to that caused by vibrating equipment commonly used in roadworks, such as a roller compactor or a vibrating plate operating nearby. It is localised in time and follows the trucks' movement.

Is there a risk to buildings or infrastructure?

The vibration levels used during operations are controlled and must meet applicable requirements, in particular Swiss standard VSS 40 312.

Instruments are used to measure and monitor the vibration levels generated, particularly near sensitive buildings and infrastructure.

Specialists monitor operations in real time, and parameters can be adjusted if local conditions require it.

Can operations disturb animals?

Some animals may be sensitive to noise or vibration and react briefly when trucks pass, in the same way they might react to a piece of farm machinery or vibrating roadworks equipment.

This may affect both livestock and pets. If you keep particularly sensitive animals, or if your livestock operation is close to the works, you can contact the project team for details of the planned schedule in your sector.

What should I do if I notice damage?

Report any damage promptly to the field team or the project hotline. The situation will be documented and assessed by an independent expert to determine its cause and take appropriate action.

5. PRIVATE LAND, AGRICULTURE AND EQUIPMENT

Will teams enter private land?

Some private plots need to be accessible for the installation and later retrieval of sensors.

Vibrator trucks do not travel through the middle of private plots. Owners and/or operators concerned are contacted in advance to explain the operations and organise access. Site constraints – including crops, access routes and sensitive periods – are taken into account when preparing operations.

What should I do if a sensor is in my way?

Please do not move or handle a sensor yourself.

Even moving it by a few metres can affect data quality or usability.

Contact the field team or the project hotline. The situation will be assessed and, if necessary, the equipment will be moved or removed.

What happens if operations damage a crop, an access route or land?

Report any damage potentially linked to operations via the hotline or the project's contact address.

The situation will be documented and may be assessed by an independent expert. Any necessary measures will then be determined on a case-by-case basis.

6. INFORMATION, REAL-TIME TRACKING AND DATA COLLECTED

How will I be notified when operations begin in my sector?

Several channels will be used to inform the municipalities, owners, operators and residents concerned:

- Open house day;
- Letters;
- Flyers distributed in mailboxes;
- Information relayed by municipalities;
- Contact from our field teams, typically around two weeks before their passage where relevant;
- Information available on the Swiss Geo Energy website;
- Media communication.

A map of operations, updated daily, will also allow the route and progress of operations to be tracked, with visibility on planned activities 24 hours and 72 hours ahead, as well as truck movements during acquisition.

Will the data collected be made public?

A summary of the results will be made public, and the geophysical data collected will enter the public domain after a maximum of two years.

Who should I contact if I have a question or notice a problem?

You can reach the GTGI team in charge of operations via the hotline, available 24/7. An email address is also available throughout the operations. The GTGI team will answer your practical questions and assist you if needed.

More information

Project owner:



www.swissgeoenergy.com

Geophysical operator:



Hotline: **079 536 43 21**

Email: permit-broye@gtgi.ch