



Parties

SCAN is a national programme made possible by the Ministry of Climate Policy and Green Growth. SCAN is executed by EBN in collaboration with TNO.

EBN is a facilitator in the energy transition and implements part of the climate and energy policy of the Ministry of Climate Policy and Green Growth. EBN possesses a lot of knowledge of the Dutch subsurface.

TNO is the Dutch organization for applied scientific research and has the ambition to accelerate the energy transition together with knowledge institutions, companies and the government.

SCAN is carried out in collaboration with Dutch provinces and municipalities, among others.

For more information about SCAN, visit: scanaardwarmte.nl/english

Do you have questions? You can email info@scanaardwarmte.nl



1 Explore

Before drilling, the subsurface must be thoroughly examined. To this end, SCAN has already carried out seismic surveys. Some additional local seismic surveys may be necessary.

2 Building location

To conduct a drilling operation, a site roughly the size of a football field is required. Space is also reserved for parking and receiving visitors. A hard surface will be installed on the site, and a temporary drilling rig, approximately 41 meters high, will be erected. The transport to and from the site is planned to minimize the impact on the surrounding area, avoiding times with heavy (bicycle) traffic. Around 20 people work at the drilling site.

3 Drilling and measurements

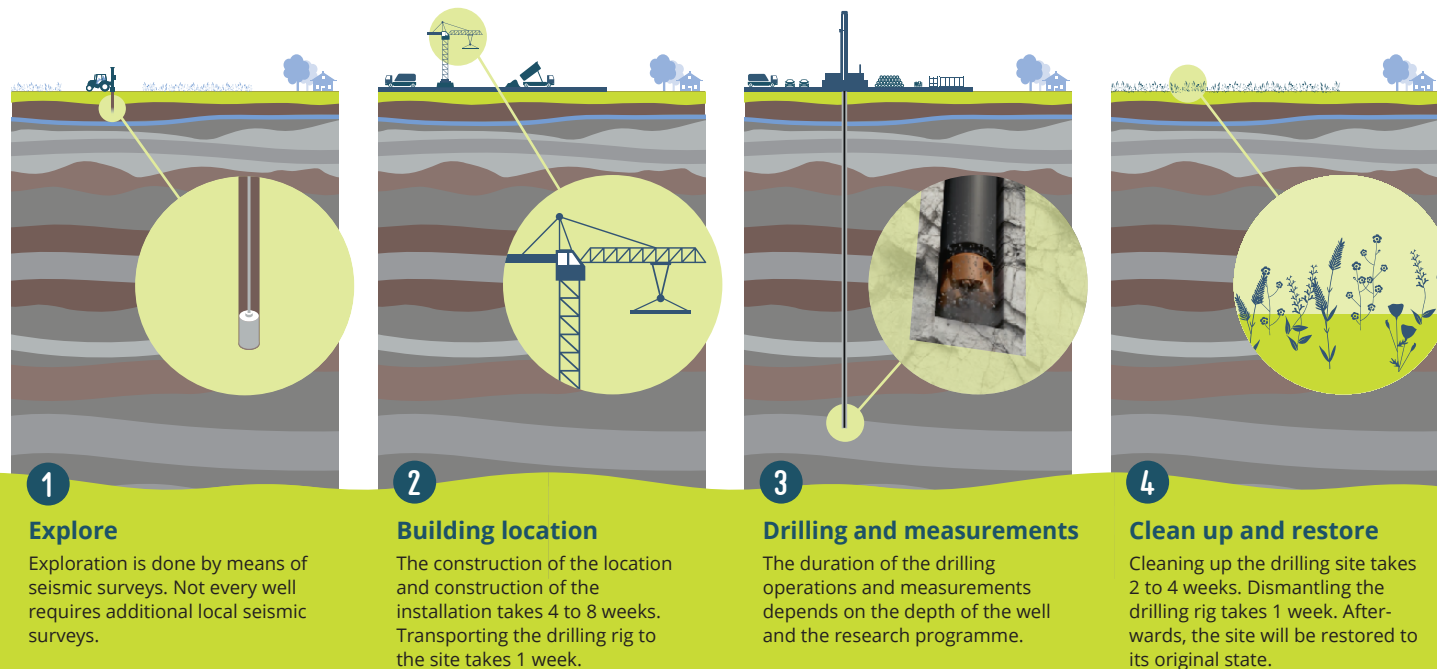
The SCAN drilling is carried out to depths of between 500 meters and 3 kilometers, depending on the local

structure of the subsurface. The hole is about 60 centimeters wide at the top and about 15 centimeters at the bottom. The well is drilled from a so-called well cellar. This may require piling if necessary for the cellar foundation to support the drilling rig. Due to technical and safety requirements, drilling must continue uninterrupted, including at night. Adhering to legal noise standards is a top priority during this process. When the desired depth is reached, the research phase begins. In this phase measurements are performed that can be used to determine the properties of the different earth layers in the subsurface.

4 Clean up and restore

The borehole will be permanently decommissioned after the research. Cement seals are placed on several levels, after which the well cellar is removed to 3 meters below ground level. After that, the site will be returned to its original state. The work on the site will take approximately 6 months in total.

SCAN work process



Subsurface research for geothermal heat

SCAN drilling

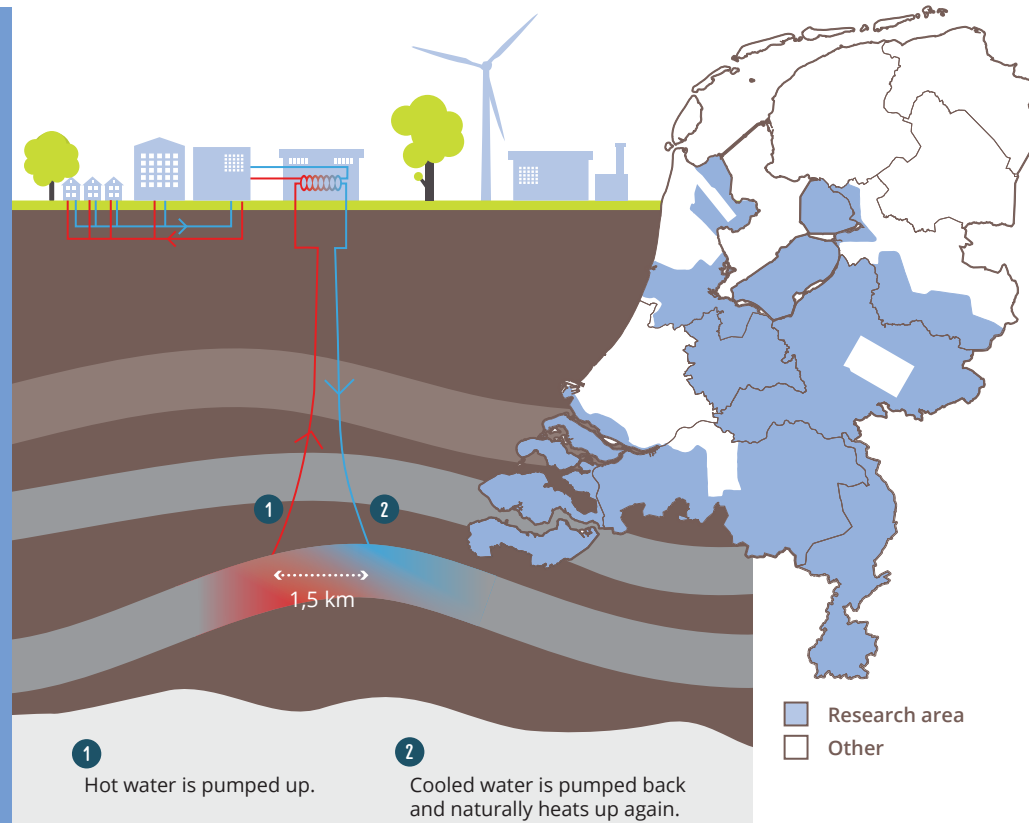


scanaardwarmte.nl/english



SCAN investigates where the Dutch subsurface may be suitable for the extraction of geothermal energy. With the data that SCAN collects, a more complete and accurate picture of the Dutch subsurface can be formed. Geothermal projects can be accelerated with this new information. All information from the programme will be made publicly available.

scanaardwarmte.nl/english



What is geothermal heat?

Deep inside the earth it is warm. The deeper you go the warmer it gets. At a depth of 2 to 3 kilometers warm water is present that has a temperature between 70 and 100 °C. If the water is in a permeable rock layer, it can be pumped up. The heat from the water can be used above ground to heat homes, offices or greenhouses. The cooled water is returned to the subsurface where it naturally heats up again over time. Geothermal energy is a sustainable source of energy. The Netherlands already has decades of experience with geothermal energy in the horticulture sector heating greenhouses. SCAN will not be extracting geothermal energy but will drill research wells that are temporary and only intended to collect data.

Where will SCAN conduct research?

Within the SCAN programme research wells will be drilled. SCAN focuses specifically on the areas where little is known about the subsurface.

To decide on drilling locations we take both the subsurface as well as the above ground heat demand into account. In consultation with provinces and municipalities, land users, land owners and with respect to the environment, the most suitable locations for a possible drill site are determined. You will find the most recent updates on scanaardwarmte.nl.

Environmental impact

The basic principle is that the drilling will have the smallest possible effect on the environment. In addition measures are taken to limit any potential disturbances.

The process

Preparing a well is a complex process. In short it looks like this:

Phase 1

Phase 2

Phase 3

Phase 4

Determining what areas could be interesting to retrieve data by drilling.

Conducting an environmental analysis to identify what needs to be taken into account.

Consultation with involved parties (such as authorities, land owners and local residents).

The permitting process is being initiated for one or more locations within the search area.

Why drill?

Since 2019, SCAN has been conducting seismic surveys and reprocessing existing seismic data. This provides insight in the earth's subsurface to a depth of about 6 kilometres. The SCAN research drilling will retrieve important additional information.

- The properties of the different earth layers are examined to determine whether they are sufficiently permeable to allow for the extraction of hot water.
- It will confirm that layers are present at the depth that we expected them to be at. Drilling also makes it clear what the thickness, composition and structure of the layer is.
- The temperature and composition of the water can be determined by drilling.

