

GEL Geothermal Development Environment FAQs

This fact sheet covers some of the most common environmental questions raised during the planning and early stages of a new geothermal power project.

Will a geothermal development destroy the existing natural environment?

As a green energy company, it's important to GEL that our impact on the environment is kept to a minimum throughout the duration of a project. GEL will do this in a number of ways:

1. Undertaking a full suite of ecological surveys before a planning application has been submitted. This involves initial Extended Phase 1 habitat surveys, to establish what species are likely to be present, followed by a comprehensive monitoring campaign to identify and record evidence of individual protected species, in line with best practice guidance.
2. Use existing access routes into a site, retaining hedgerows and trees as much as possible. If anything has to be removed it will be reinstated after drilling.
3. The biodiversity will be increased by at least 10% after the power plant has been installed and is operational. Ecological & Environmental consultants will guide GEL in finding the best possible way to enhance the natural biodiversity at each site.

Why does GEL need so much space if the power plant has a small footprint?

During drilling and testing, an area of approximately 2Ha is needed to accommodate equipment and welfare units for the crew, but once the power plant is operational, this will reduce to approximately 1Ha. GEL can therefore utilise the additional space to provide green screening around the site as well as re-wilding the remaining area with native species.

What will be the impact on the roads with the additional traffic for your project?

To manage traffic associated with the development, GEL is required to have a detailed traffic management plan, which may include temporary road closures and parking restrictions whilst larger vehicles are entering and exiting the site. However, these must be planned in advance to minimise disruption. A traffic management plan for each site will be drawn up in discussion with Highways England and the emergency services; it is something GEL will

have little control over, and GEL will be responsible for the distribution of this information to all hauliers and site visitors.

Traffic increase around site will be highest at the start and end of the drilling phase when the drilling equipment is moved into/out of the site. During this time, the number of loads will be managed to ensure it is not significantly above the average traffic for the access road, and movements will only occur between 7am-7pm. There will be no queueing outside of the site. At all other times, including when the power plant is operational, there will be just a few cars visiting the site.

How much noise will there be from the geothermal site?

GEL must keep any noise on site below a certain decibel level mandated in the conditions of planning permission. Noise levels will be monitored both on site and at nearby receptors (often in the gardens of the nearest local houses) and if the nearby receptors show levels reaching close to the maximum noise levels for the time of day/night, GEL are alerted, the noise logs are assessed, and site management are contacted to ensure that work on site does not breach these levels. Work on site will be stopped if required.

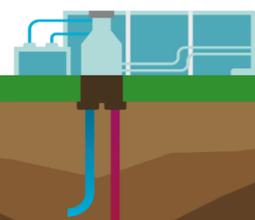
For more information on GEL's noise management, please see the separate Noise FAQ.

Are GEL allowed to drill under my house?

Yes, GEL can drill under people's property at depths greater than 300m without permission, as stated in the [Infrastructure Act 2015](#). GEL will drill vertically for approximately 3km before deviating under adjacent land, therefore drilling will not cause any damage to properties surrounding the development sites.

Will there be any ground vibration during drilling?

Drilling itself creates no discernible ground movement as the drill bit is formed of three cones that turn and grind away at the rock so slowly that you can't feel the movement.



When drilling reaches the fault zone, drilling mud will be lost in the fractures and can cause some micro-seismicity. After drilling has been completed a 'testing phase' is carried out. It is common for small micro-seismic events to be felt during this period. At United Downs seismicity was felt at a maximum ground velocity of 0.8mm/s. This is ten times less than the Cornwall Council regulations for daytime blasting at quarries and could never cause any damage to nearby buildings or infrastructure.

For more information on induced seismicity and how GEL manages the risk, please see the separate Seismicity FAQ and the animation on [YouTube](#).

Will there be light pollution during development and power plant operation?

While there is a drilling rig on site (estimated 6 - 9 months), it is required to be lit at all times for the safety of the rig crew and potential low-flying aircraft from RNAS Culdrose, Search & Rescue operations or local airports. A lighting management plan will be developed for each site in conjunction with key stakeholders and will follow [UK government guidance on reducing light pollution](#).

Do GEL have the mineral rights for new sites?

No, GEL does not hold the mineral rights for new sites because geothermal fluid is not regulated in the same way as minerals and metals in the UK. Once a site has confirmed planning permission for geothermal power development, GEL will open discussions with the appropriate mineral rights holders to ensure any relevant activity has been agreed.

How will the geothermal project impact my private water borehole?

Shallow water boreholes will not be impacted by deep geothermal developments. Geothermal wells are targeting reservoirs hosted in natural fracture zones at more than 4km below the Earth's surface, unlike water boreholes which target shallow groundwater at 50 - 80m below the surface. For more information, see the separate Borehole FAQ.

What benefits will geothermal power projects bring to the local area?

GEL will always strive to bring benefits to the local communities in both the short and long term. These include:

- A Community Fund of at least £40,000 per site shared between sustainable, cohesive community projects in the local parishes.
- More than £1.5million per project is put directly into the local economy through local business engagement.
- A dedicated community manager will keep the public informed about the project progress and report back on concerns or issues to the GEL team to ensure an open dialogue is maintained.
- An education and careers Programme for schools across Cornwall provides engaging resources and talks as well as careers advice from primary school to university.
- GEL will increase every site's biodiversity by more than 10%
- Direct and indirect green jobs will be created in Cornwall.

How can GEL justify constructing a geothermal power plant that will not be in keeping with the existing Cornish Countryside?

Cornwall has a long history of heavy industry and is proud of its visible mining heritage. Throughout Cornwall, derelict engine houses can be seen inland and on cliff tops from a great distance. The engine houses vary in size, but they tower above the ground with a stack or chimney up to 30m high. A geothermal power plant will be a fraction of this height, can be painted to camouflage the main structures and screened with native trees and shrubs. GEL are keen to ensure power plants do not detract from the existing vista that is peppered with the relics of past industry.

For more information, please visit our website geothermalengineering.co.uk or follow us on social media

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