LAND UNDER WOLSTANTON, PORTHILL, DIMSDALE AND BASFORD
GT ENERGY UK LTD **20/00986/FUL**

The application seeks full planning permission for boreholes beneath land within the Borough. The boreholes are to be drilled in connection with a proposed geothermal heat plant (or energy centre) that is proposed at Festival Way, Stoke and an associated planning application is currently being considered by the City Council (SOTCC reference 65945/FUL). It follows the granting of planning permission for the same development, as far as it relates to land within the Borough, in 2017 (reference 16/00893/FUL).

The boreholes as proposed are to have a diameter of between about 76cm reducing to about 13cm as follows:

Borehole 1 – to be initially drilled to a depth of 1,850m after which it deviates out and under land within the Borough to a maximum depth of 4,000m. The horizontal distance of this borehole is 1.4km with approximately 40% of its length being within the Borough. Geothermal water will be extracted from this borehole prior to being passed through heat exchangers on Festival Way.

Borehole 2 – to be initially drilled to a depth of 1,350m after which it deviates out and under land within the Borough to a maximum depth of 3,750m. The horizontal distance of this borehole is 2.3km with approximately 73% of its length being within the Borough. The water will be reinjected via this borehole once the heat has been extracted.

The application is supported by an Environmental Statement.

The 16 week period for this application expires on 18th February 2021.

RECOMMENDATION

PERMIT subject to conditions relating to the following:

1. **Time limit**
2. **Approved plans**
3. **Submission and approval of a micro seismic survey.**
4. **Implementation of all mitigation measures outlined in the Environmental Statement.**
5. **Boreholes to be filled in accordance with approved details if not used for intended purpose.**

Reason for Recommendation

The proposed development involves the development of a renewable energy source which is promoted and supported by local and national policy and seeks to address climate change aims for reducing carbon dioxide emissions and ensuring secure, clean and affordable energy. The part of the development that lies within the Borough of Newcastle raises limited issues and it has been demonstrated, subject to approval of further details, that no adverse impacts would arise from the development as a result of induced seismic activity, impact on underground aquifers and contaminated land.

Statement as to how the Local Planning Authority has worked in a positive and proactive manner in dealing with the planning application

This is considered to be a sustainable form of development and so complies with the provisions of the National Planning Policy Framework.

Key Issues

This is a cross border application. The development involves the drilling of two deep boreholes and the construction of an energy centre to house both boreholes. The energy centre is located on Festival Way as are the first sections of the boreholes, and as such these elements are the subject of a separate application to Stoke City Council. The application for consideration by Newcastle Borough Council is for two boreholes and is the same as permitted under application reference 16/00893/FUL.

Geothermal water is to be abstracted via one of the boreholes which would subsequently be passed through heat exchangers in the geothermal heat plant at the proposed energy centre before it is reinjected via the second borehole. The heat from the geothermal water is harnessed at the heat exchanger located at the energy centre which will then be distributed via a District Heat Network (DHN) to all connected end users for heat and hot water purposes. The programme to install the DHN is to be developed by Stoke City Council within the City boundary.

The proposal is therefore to develop a renewable energy source.

The project as a whole raises a number of issues. Issues relating to air quality; noise; traffic and transport; and ecology are associated with the construction of the energy centre and its operation located on Festival Way, and as such are not material to the determination of this application. The energy centre will have a visual impact and has the potential to affect heritage, however these impacts will only be within the City Council's area and again are not material to the determination of this application.

The depth of the boreholes beneath the Borough is such that it will not have an adverse impact on any underground archaeology. Any potential issues arising from contamination and impacts on underground aquifers are addressed through the borehole being lined by a casing which is to be set in concrete. Given the depth of the boreholes within the Borough it is not anticipated that any other issues that could affect residential amenity will arise.

In light of the above, the key issues for further consideration in the determination of this application are therefore:

- The principle of the proposed geo thermal heat energy centre
- Seismicity (the occurrence or frequency of earthquakes)

Principle of the proposed geo thermal heat energy centre

Strategic Aim 17 of the CSS is to minimise the adverse impacts of climate change in the move towards zero carbon growth through energy efficiency, promoting the use of renewable energy sources and green construction methods in accordance with best practice. CSS Policy CSP3 states that development which positively addresses the impacts of climate change and delivers a sustainable approach will be encouraged.

The NPPF, at paragraph 8, indicates that achieving sustainable development means that the planning system has three overarching objectives – economic, social and environmental. Achieving the environmental objective includes moving to a low carbon economy.

The proposal for determination by the Borough Council is therefore promoted and supported by local and national policy and as such the proposal is acceptable in principle.

Seismicity (the occurrence or frequency of earthquakes)

The area is already affected by historic seismic activity and as such it is necessary to consider whether such activity can be induced by the proposed development.

The submission addresses this, indicating that the likelihood of the drilling operations generating induced seismicity is negligible. However, having taken into consideration the historical induced

seismicity in the area, associated within mining, all possible precautions to carefully monitor any changes have been taken.

In accordance with systems introduced for similar geothermal systems in densely populated sensitive areas a threshold based traffic light system will be implemented whereby extracted geothermal water will only be reinjected where it can be done without the potential that seismic activity is induced (green = injection proceeds as planned: amber = injection proceeds with caution, possibly at reduced rates with monitoring intensified; red = injection is suspended immediately).

Subject to a condition which secures the details of the protocol and thresholds and their subsequent implementation it is considered that any potential for the development to induce seismic activity is appropriately mitigated against.

APPENDIX

Policies and proposals in the approved development plan relevant to this decision:-

Newcastle-under-Lyme and Stoke-on-Trent Core Spatial Strategy (CSS) 2006-2026

Strategic Aim 17 (referred to in the key issues section above)
Policy CSP3: Sustainability and Climate Change

Newcastle-under-Lyme Local Plan (NLP) 2011

None

Other Material Considerations include:

National Planning Policy Framework (2019)

Planning Practice Guidance (March 2014, as updated)

Relevant Planning History

16/00893/FUL and associated Stoke-on-Trent City Council 60407/FUL for a proposed geo thermal heat plant including deviated boreholes to a depth of 4000 metres. Both boreholes will be drilled vertically on the Etruria Valley site to a minimum depth of 1350 metres before deviation occurs. PERMITTED

Views of Consultees

The **Coal Authority** has no objections.

The **East Newcastle Locality Action Partnership** has not provided any comments by the due date and so are assumed to have no observations upon the application.

Representations

None received.

Applicant's/Agent's submission

The application is supported by an Environmental Statement, Flood Risk Assessment and a supporting statement specific to the Borough.

The application form and location plan and supporting information are available for inspection on the website that can be accessed by following this link http://publicaccess.newcastle-staffs.gov.uk/online-applications/PLAN/20/00986/FUL

Background papers

Planning files referred to
Planning Documents referred to

Date report prepared

20th January 2021