

## **Appendix 2 - Crewe Deep Geothermal Energy Centre Options for Delivery**

The Council has undertaken significant research into the potential delivery models available for this project. Once sufficiently hot water has been reached, the borehole has been judged successful, and providing that end user agreements are in place, the financing of such a scheme can be relatively straightforward, as the provider can evidence a need, the ability to meet the need, and the existing of funding to meet the initial outlay through Renewable Heat Incentive (RHI) payments and the sale of the energy.

However, in the first instance, a £10m fund is required to drill the initial boreholes. This is thought not to be a viable option for a local authority and, therefore, initial market testing has been carried out with a variety of geothermal companies to understand alternative business models and financing required to deliver such a scheme. In summary, for the provision of geothermal energy on the Council's own land, there look to be four primary delivery models available:

0. **Do nothing** – The Council does not proceed with Geothermal Energy. The Council does not invest any money in to the scheme but is also unable to benefit from potential income from the site. A geothermal industry (the equivalent of which in Germany employs 9000 people) will not be established in Cheshire East.
1. **A Joint Venture Model without Utility Provision (JV)** – The Council enters into a Joint Venture with a drilling provider to release geothermal energy and an energy company to provide the utility supply to end users. This would take a considerable amount of time to procure a partner company and would require significant upfront investment from the Council of over £7m in order to gap fund the initial drilling works and infrastructure. If the drilling operator cannot locate the aquifer or the water is not sufficiently hot enough, then the Council will be jointly exposed and will risk losing its upfront cost without any return.
2. **A Joint Venture Model with Utility Provision (JVUP)** – The Council enters into a Joint Venture with a drilling provider to release geothermal energy, but then creates its own energy supply company (ESCO) to supply this energy to end users. This route would also require significant upfront investment from the Council to gap fund the initial drilling and infrastructure. Alongside this, as Council will have to set up an ESCO and put in place arrangements to run this separate company for up to 25 years. This will require staffing and resources in order to operate, and could take up to 2.5 years to establish. To the best of the Council's research, such a delivery route has not been undertaken in the UK or wider EU as other organizations have instead looked for a quicker and more appropriate delivery route. As with option1, if the drilling operator cannot find the aquifer or the water is not sufficiently hot enough, the Council will be jointly exposed and will risk losing its upfront cost without any return.
3. **A Lease Arrangement without Utility Provision (LA)** – The Council leases an area of its land to a drilling provider to release geothermal energy and allows for a private arrangement to be developed between the end user and the provider regarding energy supply (with or without a third party). As a landlord and not a provider, the income to the Council is smaller when compared to other models. However, it requires a much shorter procurement process which would significantly speed up delivery. Beyond the procurement exercise and its corporate responsibilities as a land owner, the Council has no further obligation, requirement or outlays. It simply receives a guaranteed income for the area of land. All

investment made by the private sector is at their own risk and the Council has no exposure should sufficient water temperatures not be achieved.

4. **A Lease Agreement with Utility Provision (LAUP)** – The Council leases an area of its land to a drilling provider to release geothermal energy, but then creates its own energy supply company (ESCO) to supply this energy to end users. As the majority controller of energy resulting from this operation, the Council can take a significant share of the profits from the energy supply. However, such a model may not be attractive to the wider market and so the Council may find difficulty in attracting the right partner to such a deal. The Council will have to set up an ESCO to supply the energy, and then put in place arrangements to run this separate company for up to 25years. This will require staffing and resources and comes with substantial reputational risk. This route would also require the Council to fund the development of energy supply infrastructure which would cost in the region of £5m as a single year upfront cost. As with Options 1 and 2, if the drilling operator cannot locate sufficient water temperatures, the Council will be jointly exposed and will risk losing it's up front cost without any return.