



IGas
Energy

Acquisition of GT Energy

Creating a diversified energy group



The Transaction

Rationale and Project Overview

Project Overview and Rationale

Low cost entry to high growth market



- Strategic step to diversify energy portfolio into geothermal opportunities
- Highly complementary skill set
- Entry into a highly attractive growth market
- Equity funded transaction
 - Initial Consideration: £500,000 on completion 2.222 million shares (agreed value of £0.225/share)
 - A further 4 project milestones: up to £10.5m paid in IGas shares on achievement of milestones
 - A further business development milestone: up to £1m paid in IGas shares on achievement of milestone
 - Maximum Consideration capped at £12m and 29.9% of IGas shares
- Near term, funded project
 - Stoke-on-Trent City Council (SoTCC) geothermal project is a close to 'shovel ready' scheme to supply at least c.45GWh of zero carbon heat on a long term take or pay contract to SoTCC's district heating network
 - Exclusive funding arrangement with Gravis Capital Management which will see limited-recourse debt funding for c.98% of SoTCC project costs
 - Term sheet signed for limited-recourse debt facility up to £25m. Term of 20 years, rate of 8.5%

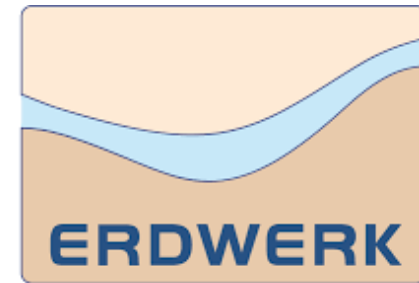


GT Energy

Overview



- Established in 2013, has conducted feasibility studies for geothermal projects in the UK and Ireland.
- Partnered with experts in geothermal development in Germany
- Key project is the SoTCC geothermal project:
 - Construction of a hydrothermal well doublet plant (one production, one re-injection and the construction of an energy centre at surface)
 - GT Energy will own and operate the wells, supplying heat to SoTCC's district heating network, which is currently under construction.
 - Circa 45GWhth of heat will be supplied annually, with contracted annual revenues projected at circa £3million (index linked) at a steady state.
 - Geophysical work complete (well design etc)
 - Scheme received RHI (Renewable Heat Incentive) preliminary accreditation from Ofgem



Geothermal Energy

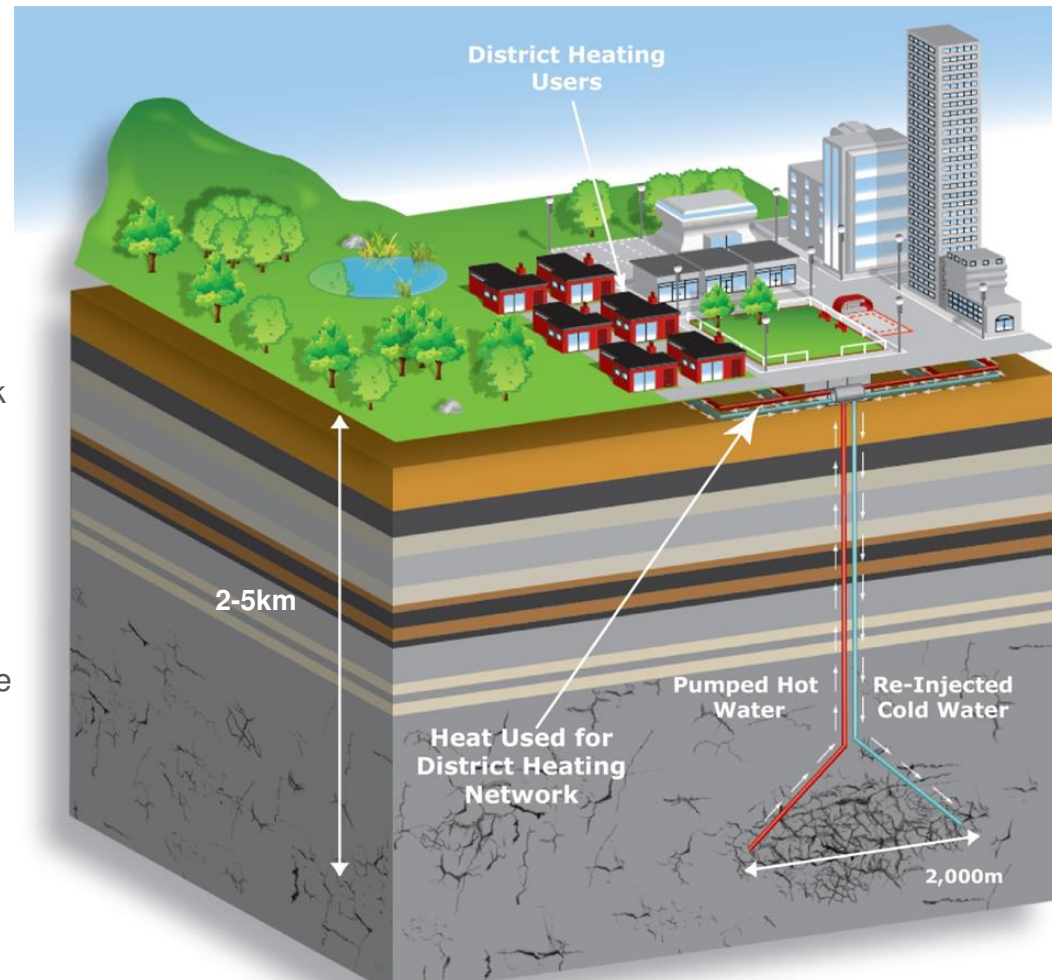
How, why and the potential

Geothermal Energy

How does it work



- Proven technology which uses heat from the earth to generate heat and power
- Energy is harnessed by drilling a well into a deep aquifer and pumping hot water to the surface.
- The hot water is then passed through a heat exchanger harnessing heat for a district heating network/customer.
- The cooled geothermal fluid is then recycled back down into the aquifer via a second re-injection well.
- Two processes:
 - Engineered geothermal – fracturing rock
 - Hydrothermal (SoTCC Project) – drilling into the natural reservoirs and pumping hot water to surface
- Zero emissions; low visual impact
- Resource life of > 100 years



Geothermal in the UK

A significant growth opportunity



- Geothermal supplying large scale blue chip customers and District Heating networks is a key route to decarbonising heat in the UK
- There are significant hydrothermal opportunities (similar to SoTCC project) in the UK driven by:
 - Significant regional deep geothermal resources
 - Substantial demand from large scale heat users (Universities, hospitals etc.)
 - Increasing uptake of district heating networks across the UK
- Independent study (Jacobs) states that:
 - Deep geothermal resources could provide 9.5GW of baseload renewable electricity – equivalent to nearly nine nuclear power stations
 - Deep geothermal resources could provide over 100GW of heat, which could supply sufficient heat to meet the space heating demand in the UK;
 - Cost reduction potential is exceptionally high;
- Hydrothermal systems are economically viable based on the RHI and a long-term offtake

Paris has >40 operating well doublets

In Germany, c.30 plants in operation – additional 10-15 planned



Stoke Geothermal

Technical data



• Subsurface

- Well design for a deviated well pair (water producer and injector) to be drilled to approximately 4500mMD targeting a dolomitized, fault-fractured aquifer
- Identified hydrogeothermal resource through seismic acquisition
- All geophysical work complete
- All permitting in place
- Conservative, anticipated flow rate of 75 L/s of water at a target temperature of 110°C
- Analogous German project -100-150°C with flow rate of 100-150 L/s

• Long term contracted revenues

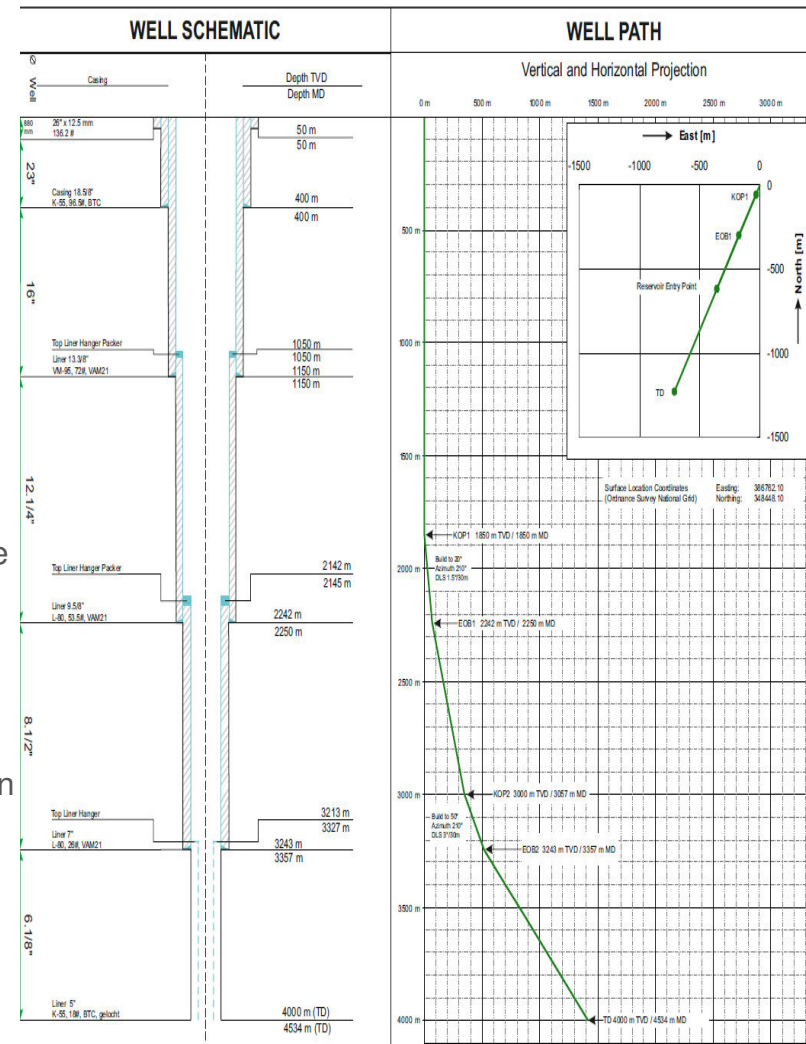
- Agreed form offtake agreement to supply 45GWh of heat into the SoTCC district heating network which is currently under construction and funded by £20m government grant

• Renewable Heat Incentive

- Project has obtained RHI preliminary accreditation from Ofgem
- Project will have tariff guarantee from Ofgem prior to construction

• Timetable

- Renew planning (significant local support) Q4 2020
- Financial close Q1 2021
- Commence drilling & testing Q2/Q3 2021
- Installation operational by March 2022



Business Development Opportunities

- At least 50-100 project across the UK
- Average project size 10MWhth
- Focus on large, single off-takers
- IGas and GT Energy are targeting hydrothermal geothermal projects, accessing geothermal reservoirs with good permeability, established as technically and economically feasible in wide variety of settings
- Potential projects across IGas's acreage including the potential re-use of existing wells
- Local investment and job creation



**Stoke-on-Trent DHN
14MW capacity**

Medium temperature
reservoirs

IGas areas of
operation

Source: GeoDH GIS

Policy Support for Renewable Energy

Strong Government Support



- For the UK to achieve net zero, domestic heat needs to be decarbonised.
 - There are limited options as to how this can be achieved:
 - biomass, heat pumps, electricity
 - The government is likely to apply carbon taxes to gas and oil fired heating
- **The Renewable Heat Incentive (“RHI”) was introduced in 2011 for non-domestic buildings**
 - Non-domestic RHI is a key driver of the installation of district heating networks, however the only bulk heat source to date has been biomass boilers
 - Current format comes to an end in 2021, but with the tariff guarantees that extends the commissioning date of the SoTCC project to March 2022
 - GTE and IGas lobbying for a replacement RHI specifically for geothermal
- Heat Networks Investment Project - £320m Government fund for infrastructure
- Desire for “shovel ready” projects
- Job creation
- “Level” up Northern constituencies
 - “Levelling Up Task Force” recently launched by Conservative MPs, including MP for Stoke Central

Leveraging existing skillsets and assets



- Significant overlap between IGas's core competencies and geothermal
- Combination of GT Energy's commercial and technical expertise in geothermal and IGas's onshore operational expertise will:
 - Give counterparties significant confidence in all project phases
 - Give funders confidence in project execution and subsequent safe and compliant operation
 - Accelerate the pipeline of opportunities already identified in the UK
 - Allow the in-house assessment of the geothermal potential of IGas's existing fields and well-stock

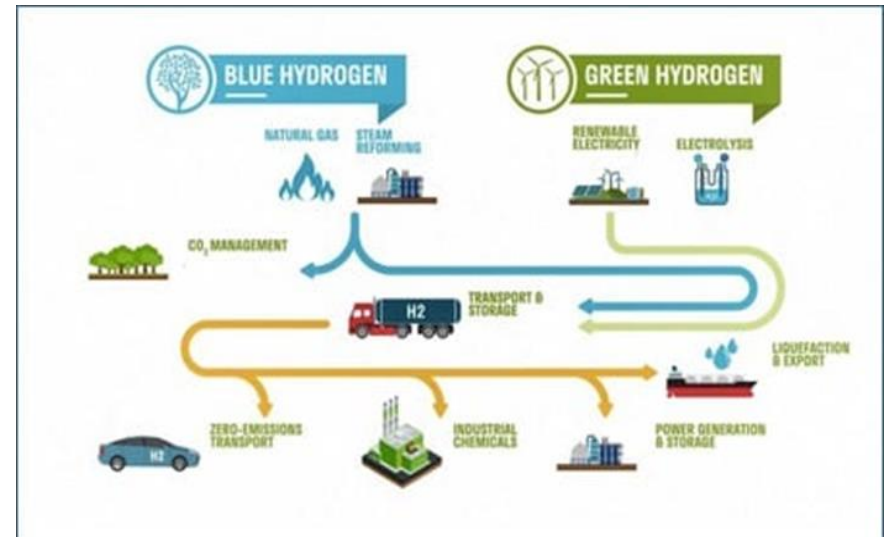


Delivering Diversification

Playing an important role in the UK's energy transition



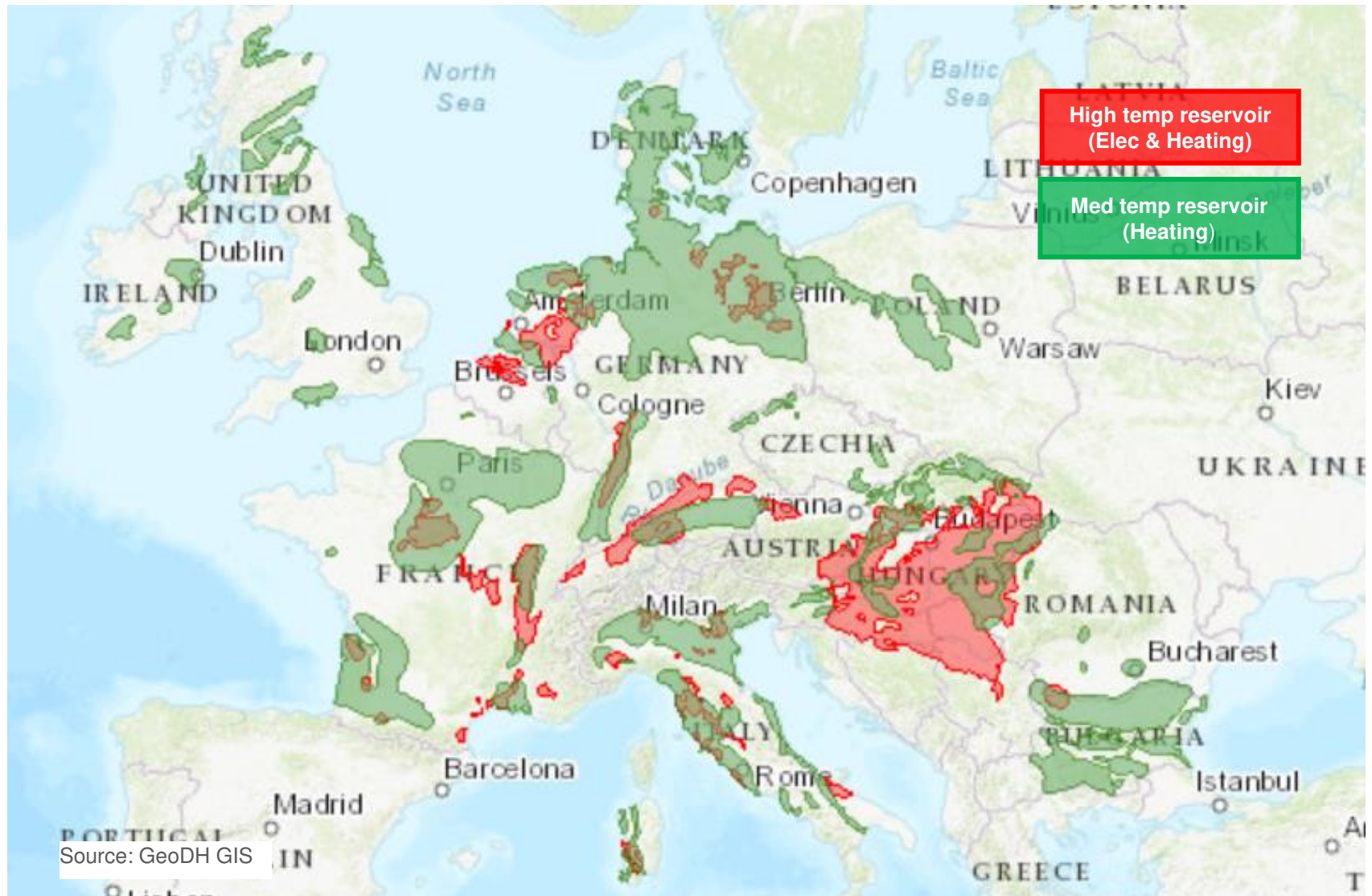
- GT Energy acquisition is the first step in diversifying IGas to play a role in the UK's energy transition to net zero
- Continue to assess diversification opportunities:
 - Gas grid and gas to wire projects and the potential for hydrogen production
 - Energy storage, e.g. batteries
 - Energy diversification from existing sites – including geothermal and solar
 - Exploring potential opportunities for existing well stock including CCS, EOR
 - Focus to bring forward pilot projects on existing IGas sites or utilising existing IGas assets



Appendix



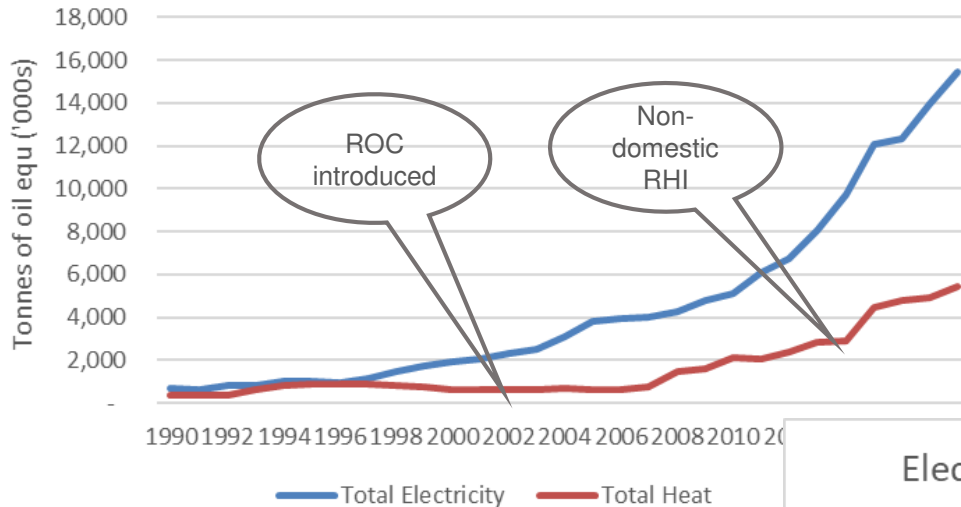
Geothermal resources in Europe



Policy driven renewable energy 2000 -

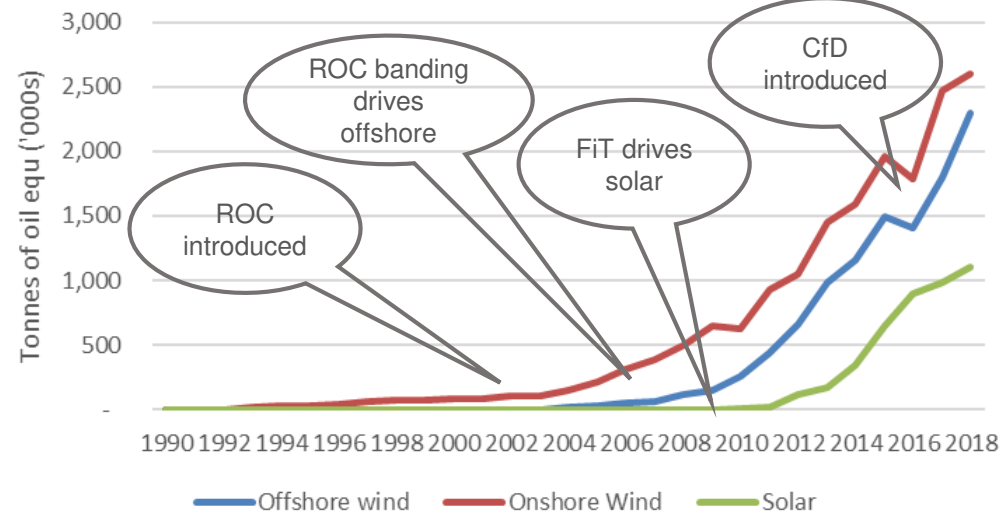


UK Energy from Renewable Sources 1990 - 2018



- Decarbonisation of heat lags decarbonisation of electricity
- The 'low hanging fruit' (principally all electricity related) has been done, 20years to decarbonise 20% of electricity supply
- Policy has driven deployment and in turn cost reduction, e.g. offshore wind costs in 2010 were c. £160/MWh; costs in 2019 were c.£40/MWh
- In order to move towards the 2050 net zero targets, policy will broaden to further encourage the decarbonisation of heat

Electricity Gen. by Renewable Source 1990 - 2018



Geothermal Deployment in Europe

- Total installed capacity is now more than 6GWth and 3GWe
- Capacity has doubled in the last 5 years
- As of 2018, more than 300 geothermal district heating networks in operation, up from 187 in 2010
- In 2018, 12 plants commissioned with total capacity of 149MWth
- Increased focus at anchoring geothermal plant at the centre of a community and business environment is effective at fostering public acceptance
- Installed capacity is still far below the resource potential in Europe (where over 25% of the population lives in areas directly suited to geothermal district heating)

Fig. 1 | Installed capacity for geothermal electricity and district heating by country in 2018 (Mw)

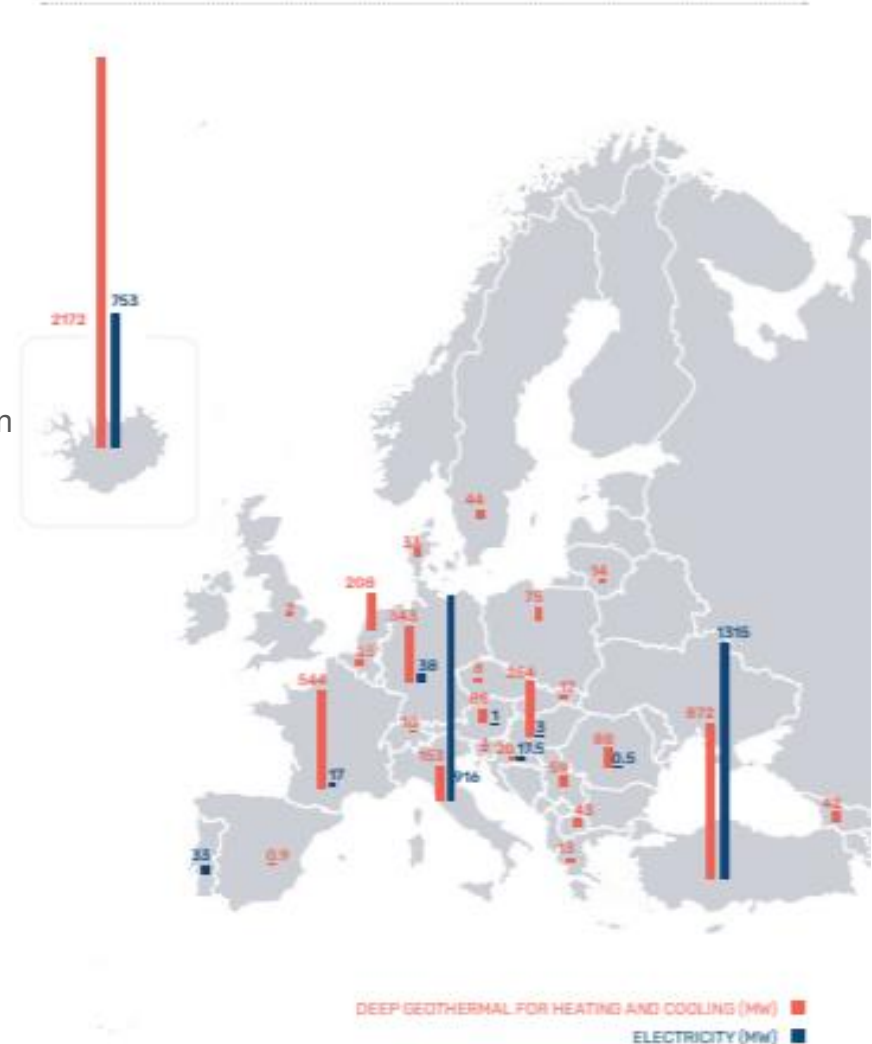
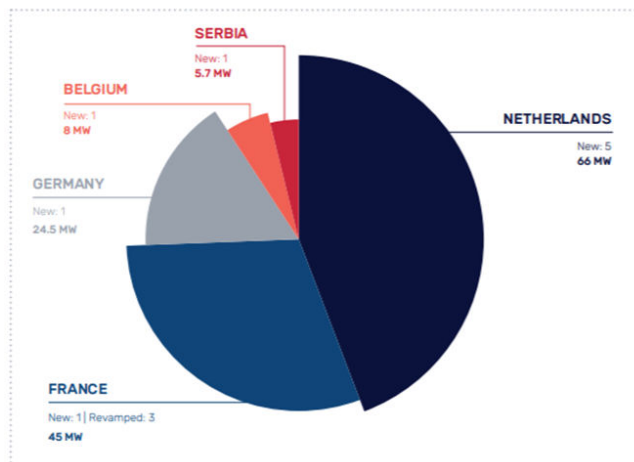


Fig. 6 | New geothermal district heating plants in 2018 (country, number, capacity)



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