

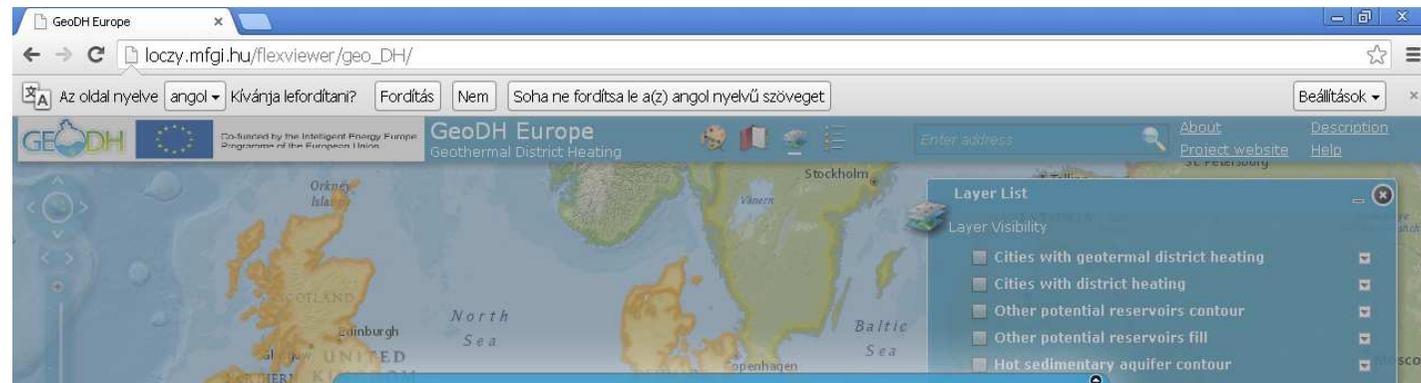
Promote Geothermal District Heating Systems in Europe Geo-DH

Manual on the use of the web-map service



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Programme of the European Union

The aim of the web-map viewer is to provide a European scale overview on the deep geothermal potential of the partner countries combining with the existing heat demand in an interactive way, thus showing best potential areas for future geo-DH developments. The viewer is available at: loczy.mfgi.hu/flexviewer/geo_DH



The opening page provides a short information on geothermal district heating.



Welcome to the web-map viewer of the Geo-DH project!

The project aims to give an overview on the potential for geothermal district heating applications in 14 European countries (Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Ireland, Italy, the Netherlands, Poland, Romania, Slovakia, Slovenia, United Kingdom).

About geothermal district heating

District heating (DH) is a system which distributes heat from a centralized generation plant to users, connected via a heating grid and substations. DH achieves higher energy and environmental performance compared to the traditional central heating systems, as heat supply is best adjusted to users demand. Last but not least, it reduces greenhouse gas emissions and excess heat losses, thus significantly contributes to the climate and energy policy targets. In the EU-27 countries there are 3550 DH systems providing heat for 2160 cities and towns over 5000 inhabitants, thus satisfying 12% of total heat demand of the population. The majority of the systems are fed by gas and only 1% by renewables (mostly biomass). Despite the favorable geothermal conditions in Europe, geothermal energy contributes only 0,001% of the district heating systems. Nevertheless Geothermal district-heating (geo-DH) dates back to Roman ages, when city homes and baths were heated via natural hot water catchments and piping. In 2011 there were 212 Geo-DH systems operating in Europe with a total installed capacity of 4700 MW capacity. The major markets are in Europe.

[Ok, let's go to the Map Viewer!](#)

By clicking here you can enter the map viewer itself



By clicking on HELP, you get an easy overview on the use

The screenshot shows the GeoDH Europe web application interface. A large blue help overlay is centered on the map, which displays geothermal district heating data across Europe. The help overlay includes a search bar, a layer list, and a 'Zoom to' dialog box. Several callout boxes provide instructions on how to use the application's features.

Callouts:

- Click on widget icons to draw and measure, to bookmark extent or to view layer legend
- Enter city name to search city
- These links give additional information about layers and the project itself
- Use the slider to adjust zoom level, and the hand tool drag the map
- Click on points to get information about cities
- By clicking on the checkboxes layers can be turned on and off
- Additional layers settings can be found by clicking to the triangle mark

Layer List:

- Cities with geothermal district heating
- Cities with district heating
- Country boundaries
- Temperature distribution at 1000m; T>50°C
- Other potential reservoirs fill
- Other potential reservoirs contour
- Heat-flow density; HFD>90mW/m2
- Neogene basins fill
- Neogene basins contour

Zoom to Dialog:

Cities with geothermal district heating

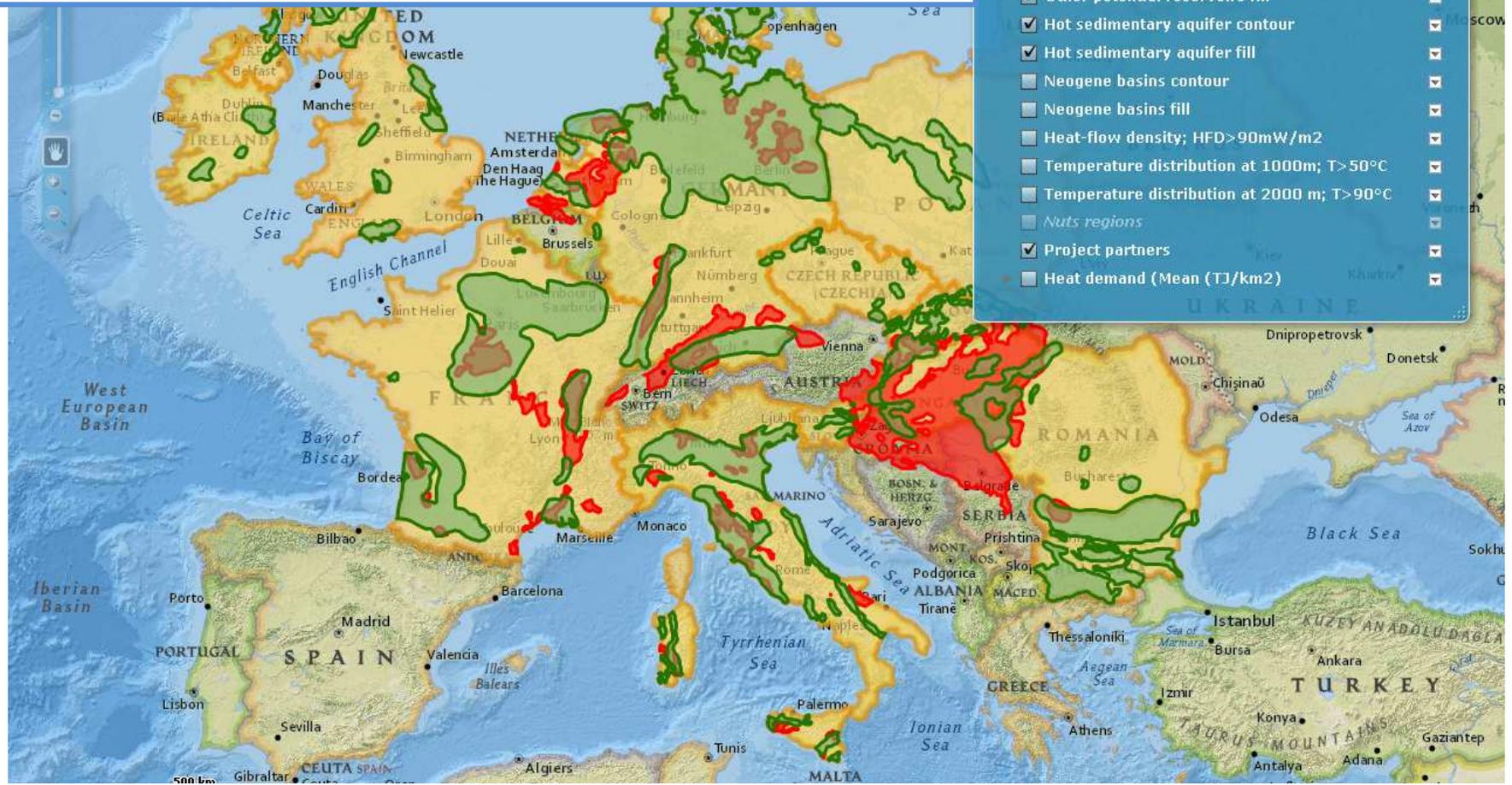
Annual Energy: 3,05 TJ/y,
Capacity: 0,71 MWth,
Country: Slovenia,
Location: Benedikt,
Consortium: Municipality

Zoom to

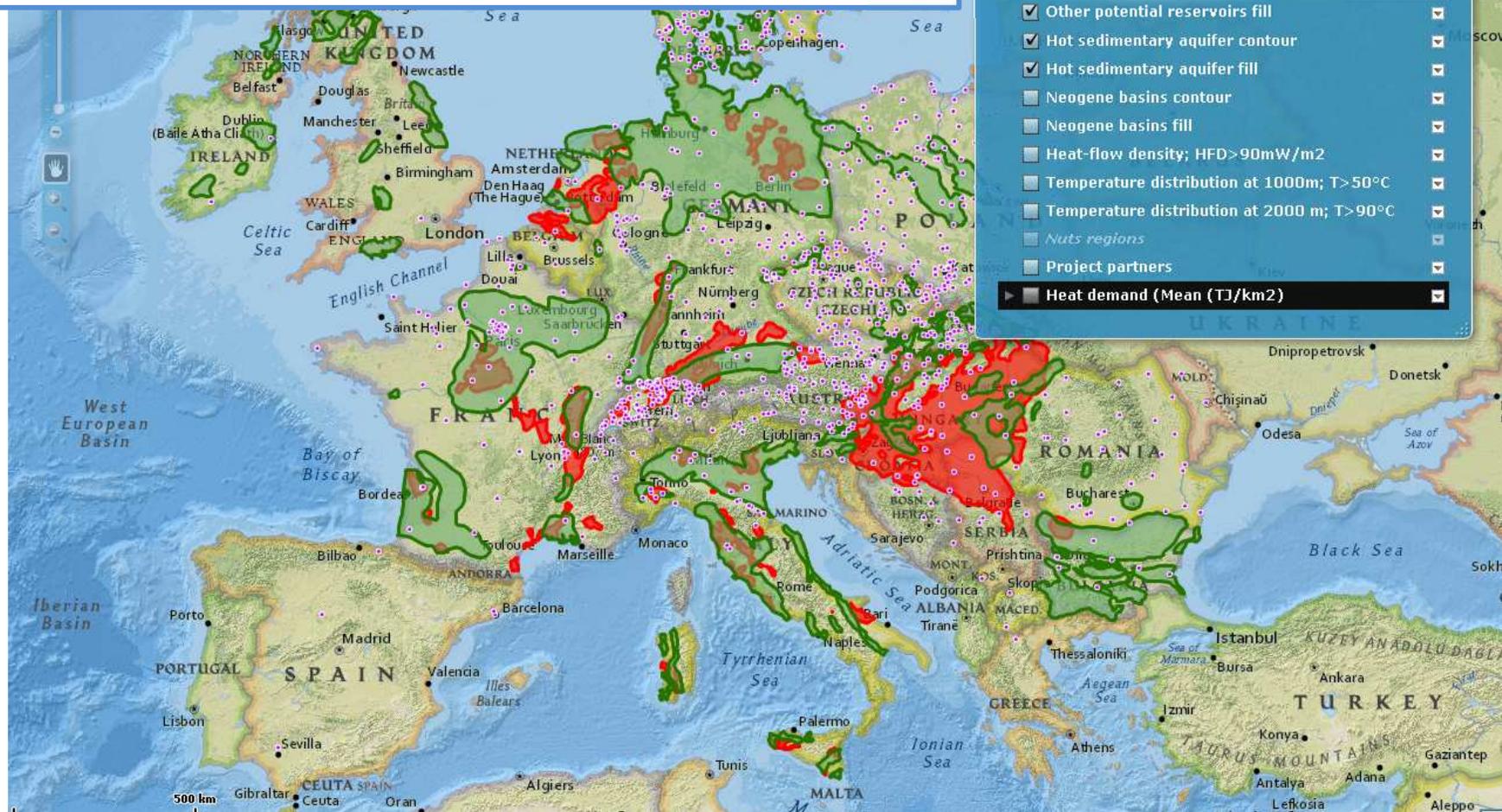
OK

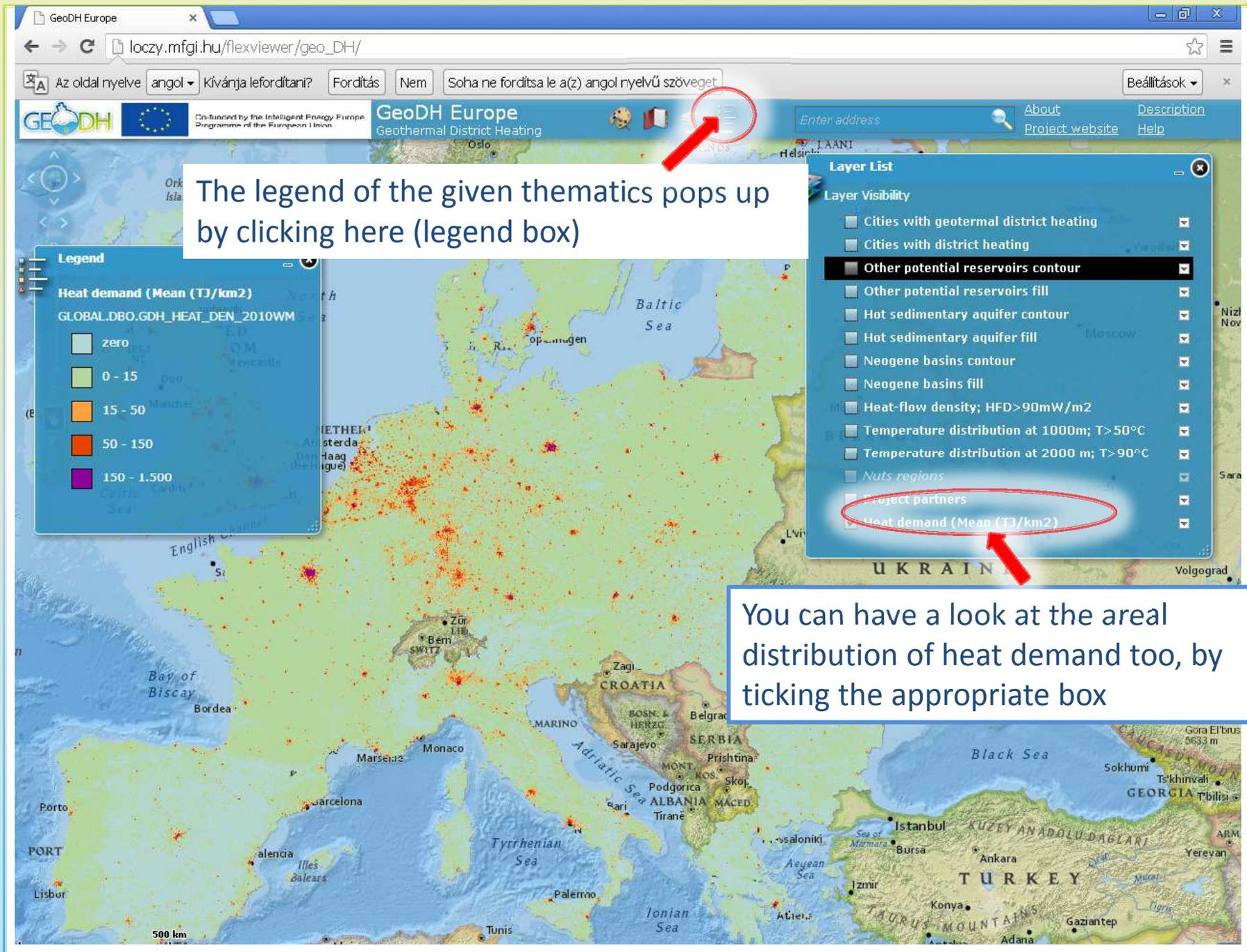
By clicking on OK, you can close the help

By clicking on selected checkboxes, layers can be turned on/off – e.g. shows areas where hot sedimentary aquifers (red) and other types of potential reservoirs (green) exits. These represent areas with best potential from the resource side.



By clicking on „cities with district heating”, little purple dots show where district heating already exists. Where these overlap with areas of good geothermal potential (red or green areas), there is a real opportunity for future geo-DH developments.





The short description about the content of each layer is found here (decription)



The screenshot shows the GeoDH Europe web application interface. The browser address bar displays 'loczy.mfgi.hu/flexviewer/geo_DH/'. The main map area shows Europe with various geothermal resource layers overlaid. A 'Layer Visibility' panel on the right lists several layers, including 'Other potential reservoirs contour' and 'Other potential reservoirs fill', both of which are checked. A popup window titled 'Heat-flow density' is open, providing a detailed description of the layer's content and a reference.

Heat-flow density

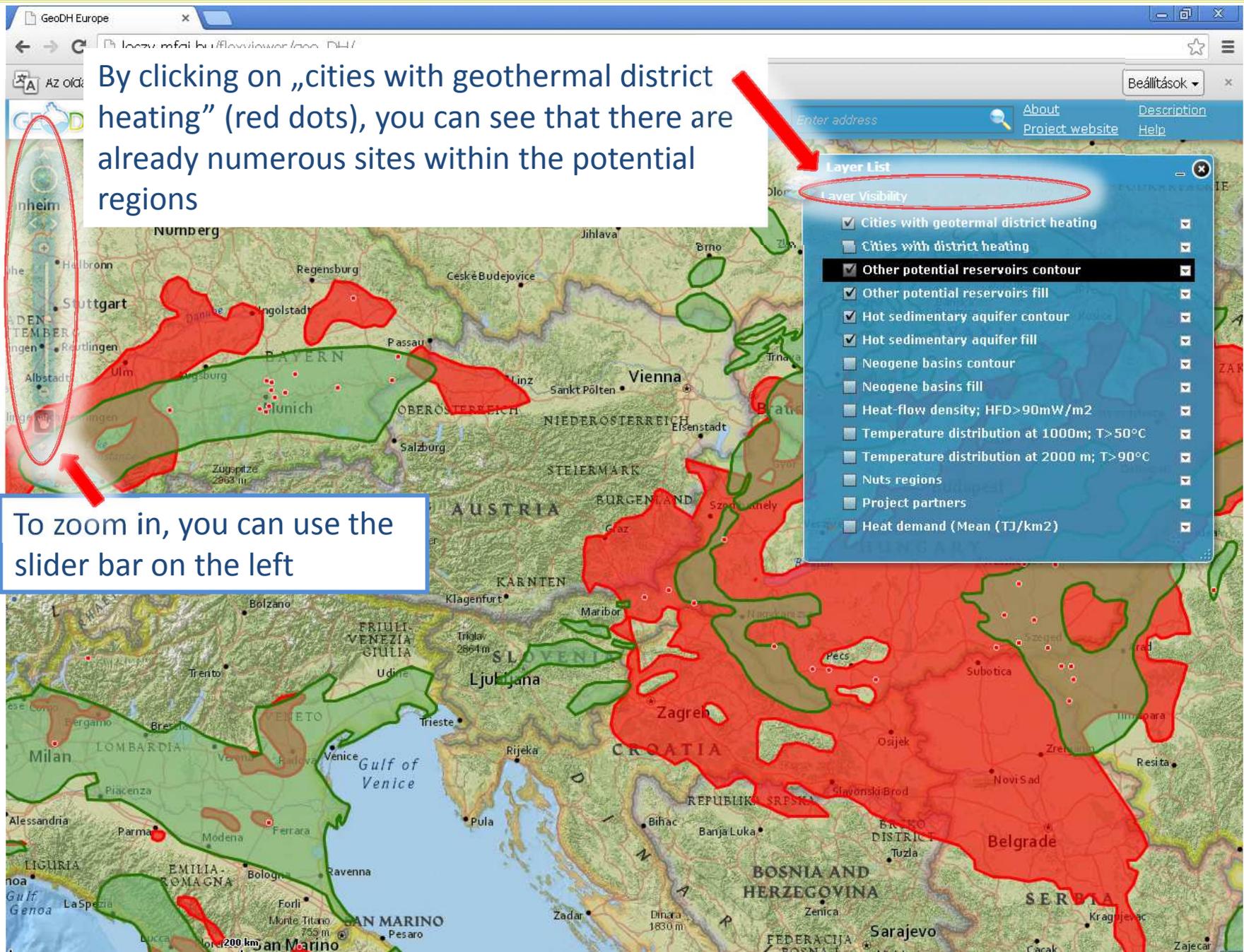
OK

Temperatures at a depth of 1000 m and 2000 m
Knowledge of temperature at a drillable depth is a prerequisite for geothermal exploration. This layer shows those areas where temperature exceeds 50-60 °C at a depth of 1000 m and temperature exceeds 90-100 °C at a depth of 2000 m. A more detailed and up-to-date modeled subsurface temperature distribution was prepared by the Goelec project and is available at www.goelec.eu, showing temperature variation down to a depth of 5 km.

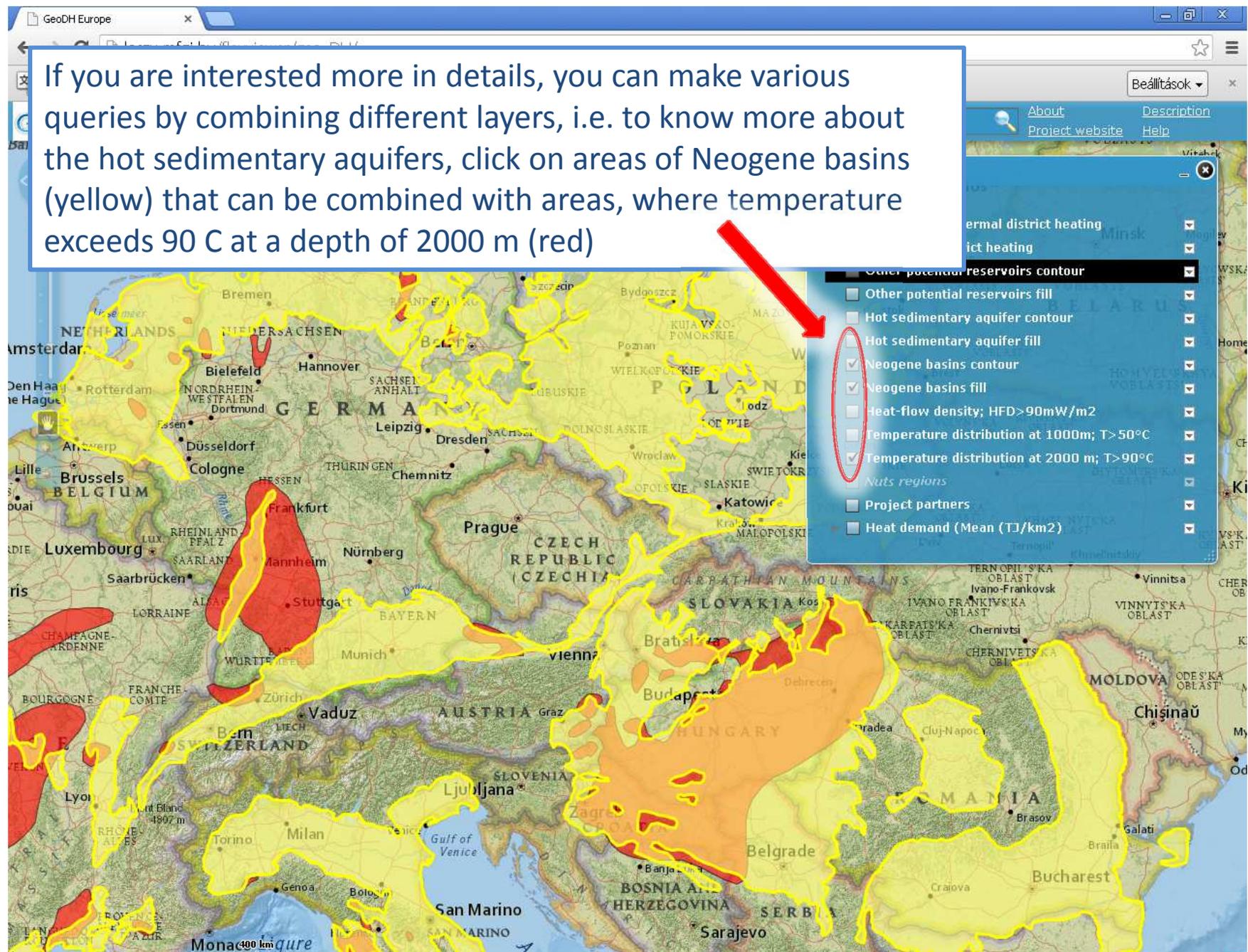
Reference: Hurter, S., and Haenel, R. (eds.) 2002: Atlas of Geothermal Resources in Europe, Office for Official Publications of the European Communities, Luxembourg

By clicking on „cities with geothermal district heating” (red dots), you can see that there are already numerous sites within the potential regions

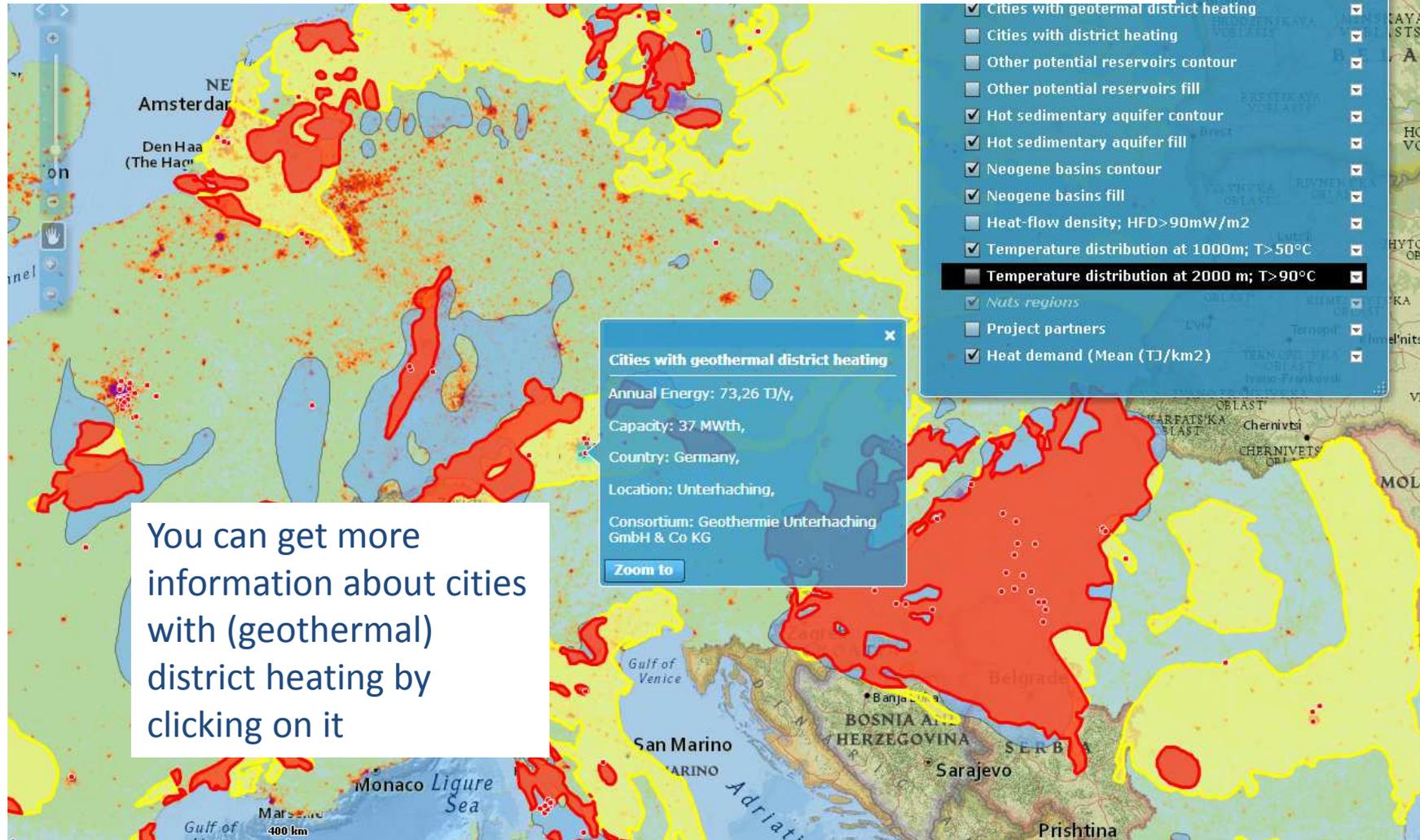
To zoom in, you can use the slider bar on the left



If you are interested more in details, you can make various queries by combining different layers, i.e. to know more about the hot sedimentary aquifers, click on areas of Neogene basins (yellow) that can be combined with areas, where temperature exceeds 90 C at a depth of 2000 m (red)



There is a wide range of different options to know more about geothermal district heating: potential areas both from resource and demand side by combining different layers. You can always check their content at the description



You can get more information about cities with (geothermal) district heating by clicking on it