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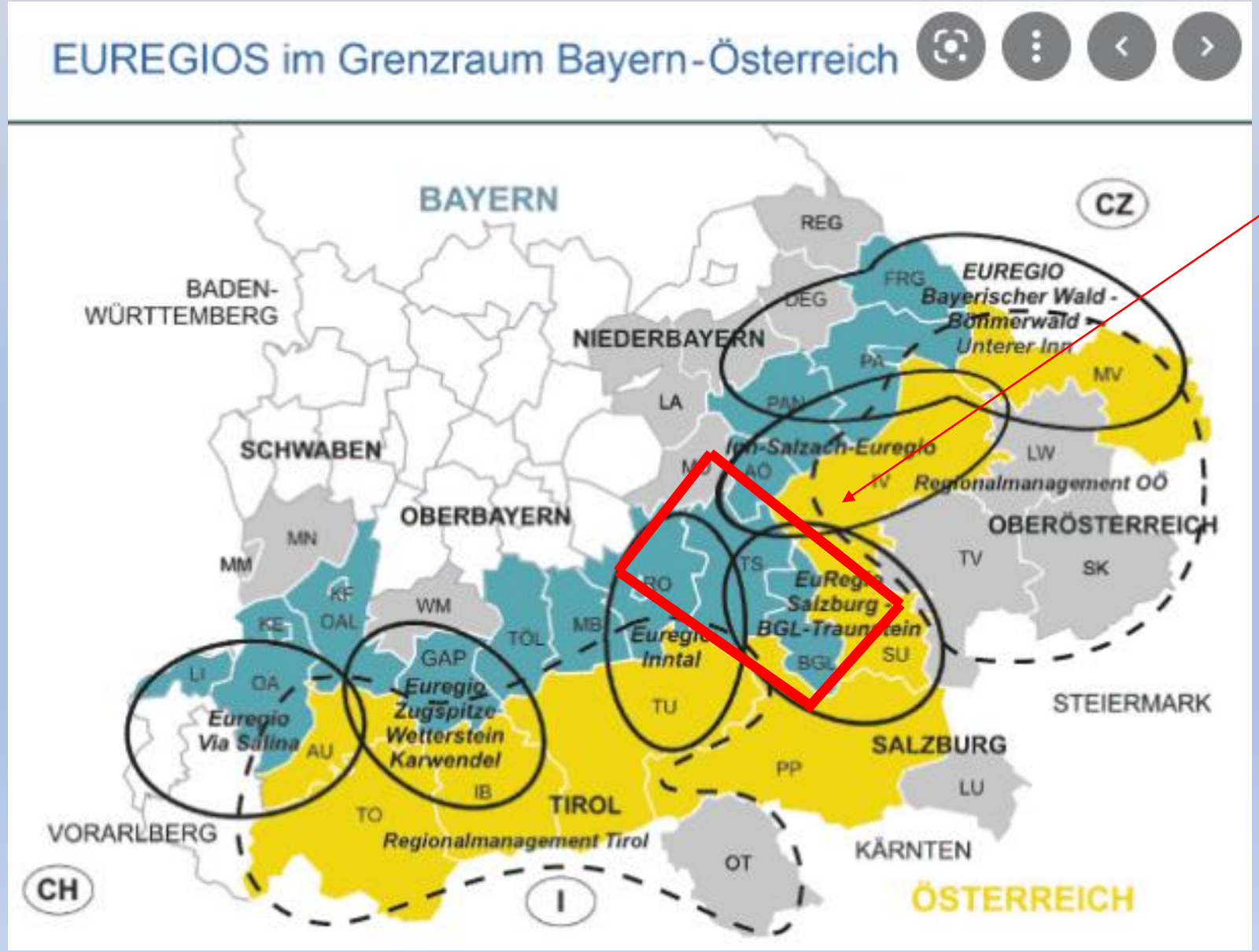
Südostbayern-Oberösterreich-Salzburg

ENEREGIO SOBOS

Energy Region
Southeast Bavaria-Upper Austria-Salzburg

CEF Energy

Euregio Areas Bavaria/Austria



ENEREGIO SOBOS

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Initial situation

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The project area of the Eneregio OSOBOS is geologically located in the area of the Malmkarst, which allows the possibility of hydrothermal use of deep geothermal energy. In addition to deep geothermal energy, there is a high industrial density in this area with waste heat potential (many biogas plants, hydropower, photovoltaic plants) as well as large heat sink potentials (building stock of cities and villages, heat demand for agricultural food production and heat demand for production and process heat for industry).

Due to the border location of the Bavarian territories with Austria, however, there are also further heat source and heat sinking potentials across borders in the federal states of Upper Austria and Salzburg.

A detailed cross-border survey is not yet available. From the previously known figures of project submissions and individual surveys, however, one can assume a quantity of more than **two terawatt hours** per year in the region for the heat sinks and the heat supply (without large-scale industry).

This scope justifies an overall examination of a networking of the sources and sinks for a heat grid for the decarbonisation of the thermal processes in this region.

SOBOS project status:

SOBOS project implementation started in September 2022. Therefore the basic data of local municipal and governmental databases were imported, sorted and evaluated.
The energy usage plans and energy map data of all municipalities were readed and rated. This data are the base information for all steps of SOBOS project.
The main heat potentials were sorted and addressed for graphical evaluation and development.
In parallel the discussions and local investigations with municipalities and industrial energy plant responsible engineers werde started to get additional information for heat demand and energy potencial development for the next years (decarbonisation targets e.g.).

The information of stakeholders and mayors in the whole region was started in the same time.

The project team started to work from Beginning of September and project documentation was set up in the same time.

So we are on track with SOBOS project even sometimes it is hard to get meetings and phone calls with responsible persons in industry and by grid connectors and partners because of energy crisis is Europe.

Development of the Regionalwerk Chiemgau Rupertiwinkel - member municipalities R C-R: 31 cities and municipalities

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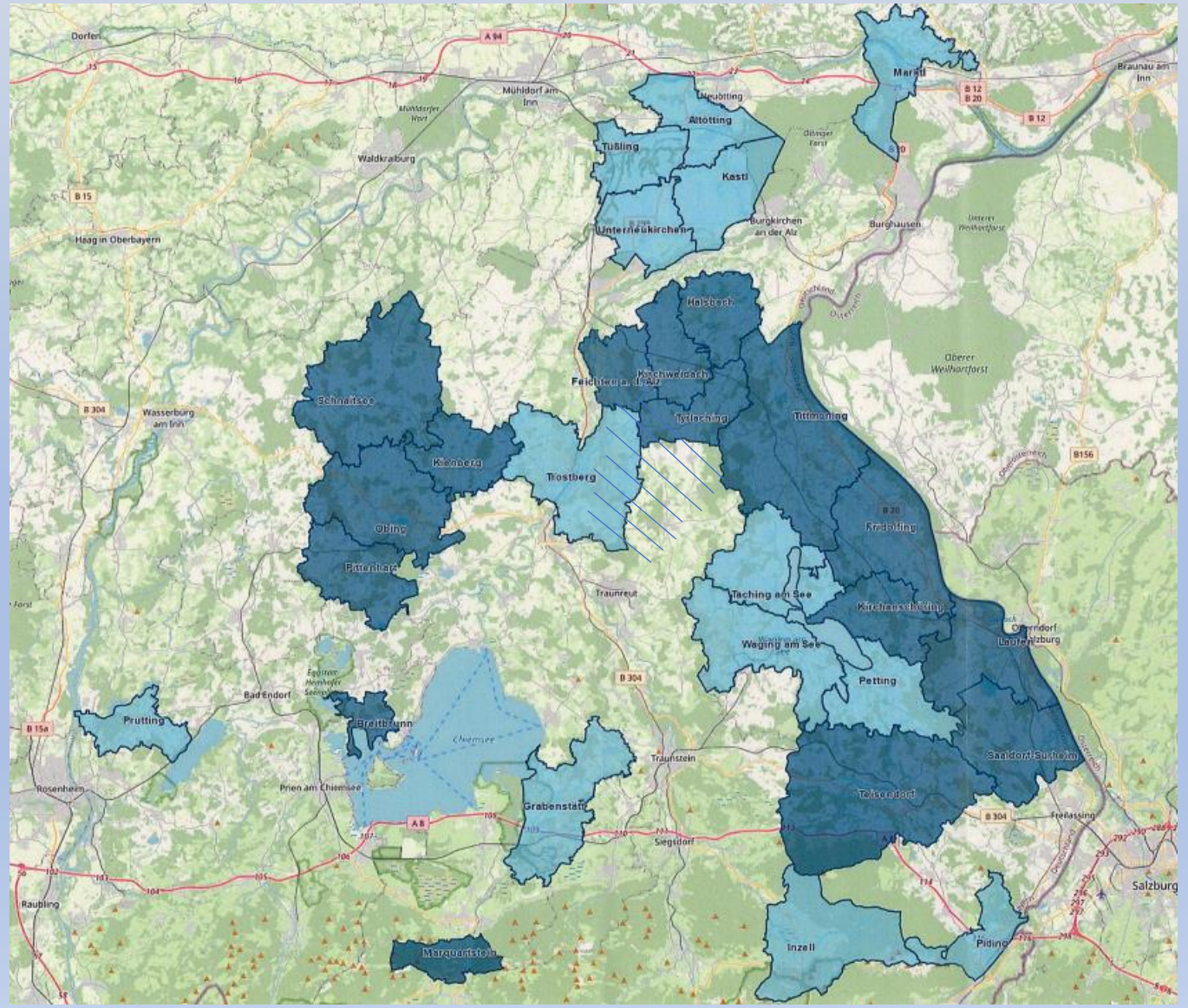
Situation 2023 Cities and municipalities - Owners of Regionalwer Chiemgau-Rupertiwinkel:

- Dark blue: Founding Members 2020
- Light blue: new members 01.01.2023
- Hatched area: Membership 2023 - vote and decision in City council on 15.12.2022

The R-CR area will grow up from 16 members to 31 in beginning 2023.

So SOBOS Area is nearly covered by the public owners of R-CR.



R-CR picture members municipalities 01 2023

Regionalwerk Chiemgau-Rupertiwinkel

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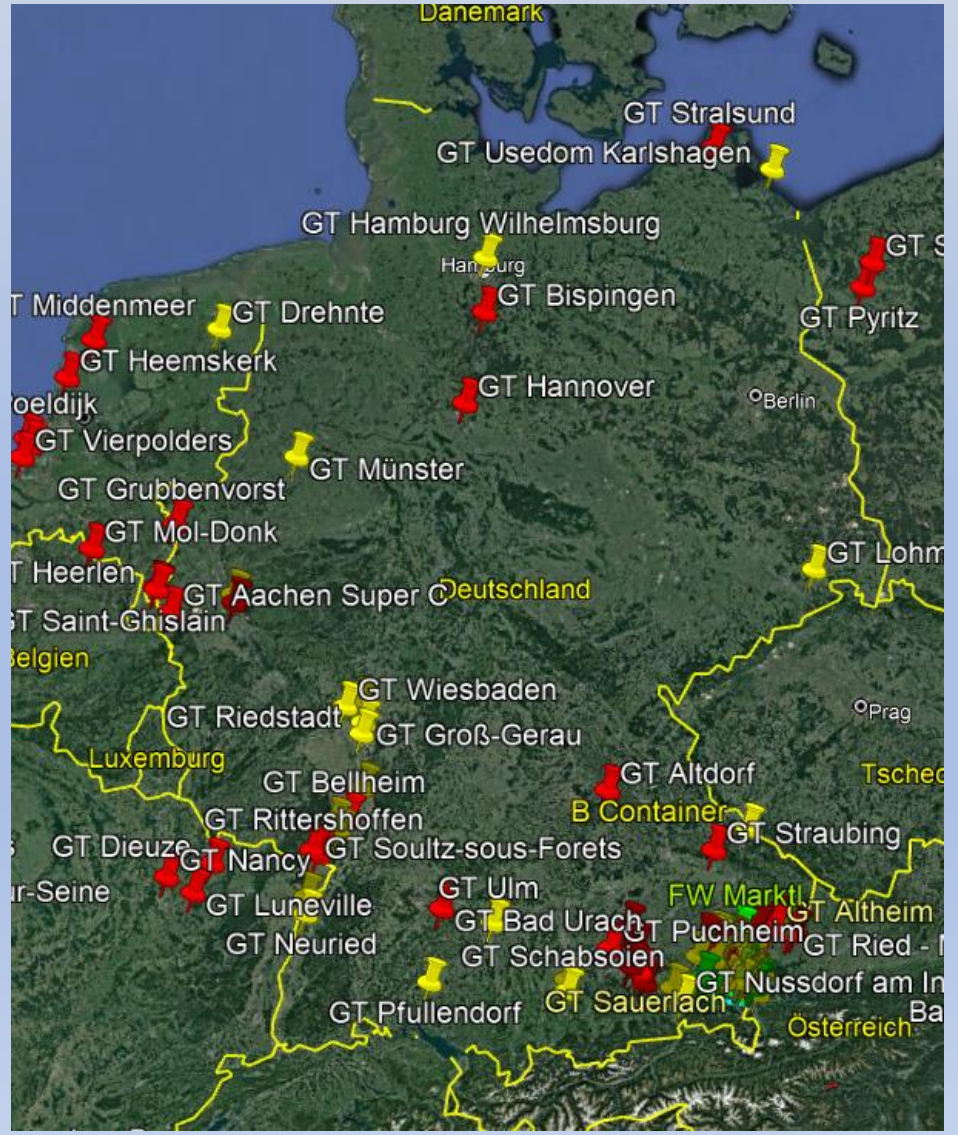
Georthermal projects in Germany



Geothermal projects Southeast Bavaria - Upper Austria - Salzburg

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Preliminary sounding potentials:

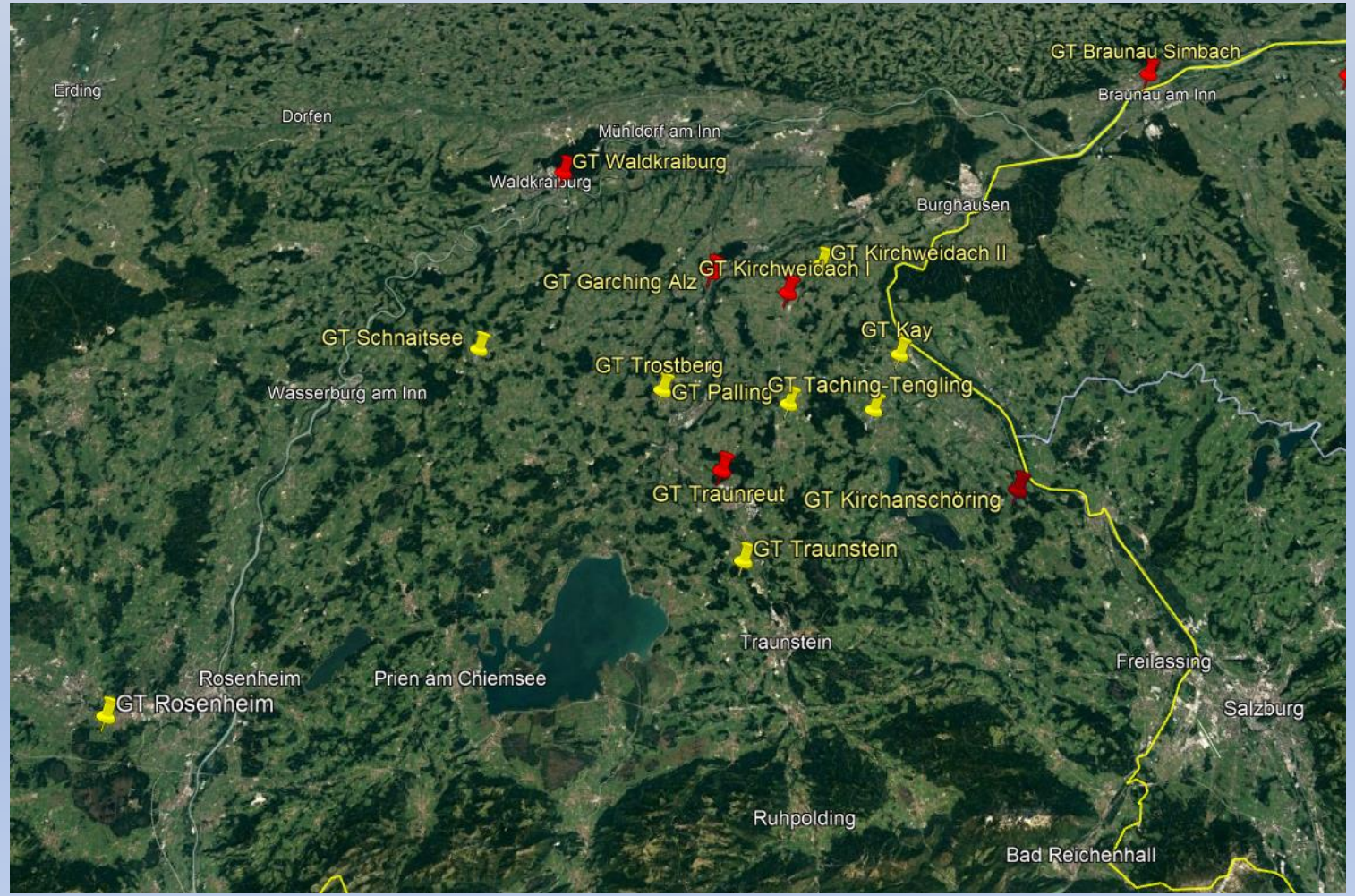
- Heat sources deep geothermal energy
- Waste heat sources industry
- Heat sources Post EEG
- Heat-lowering room heating
- Heat-sinking industry
- Waste heat H2 production

Deep geothermal energy:

5 projects have been conducted and are in operation (red needles: there is geothermal heat potential)

1 project is being implemented (dark red needle)
8 projects are in planning or an approval phase and in operation (yellow needles: there is waste heat potential)
2 projects have potential for planning.

Several permit applications are currently being prepared at the mining authority.

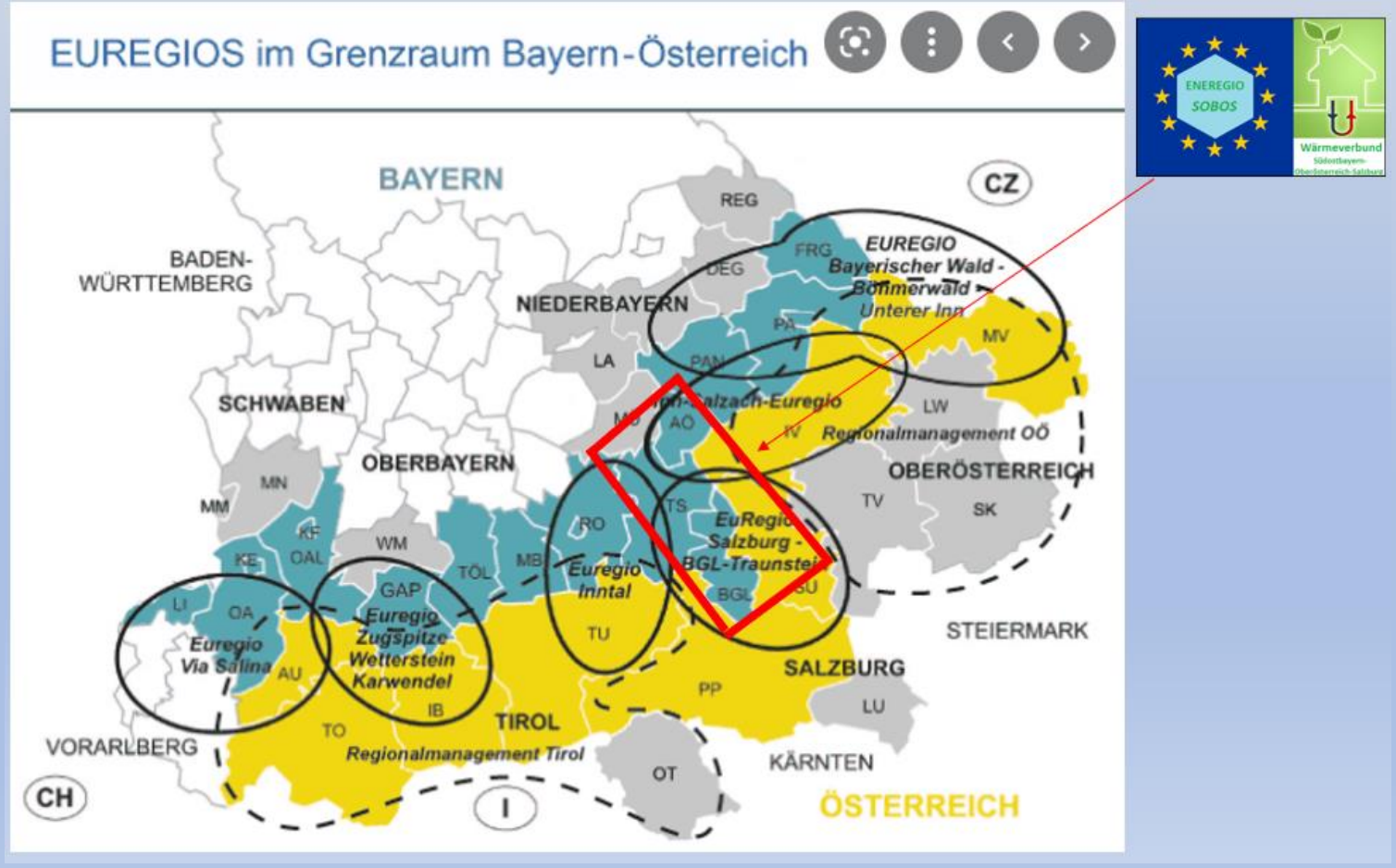


R-CR picture SOBOS geothermal projetcs R-CR area

Data collection SOBOS

Collecting basic data :

- Four regions in Bavaria
- Sobos investigation area (red rectangle):
  Three involved Euregios

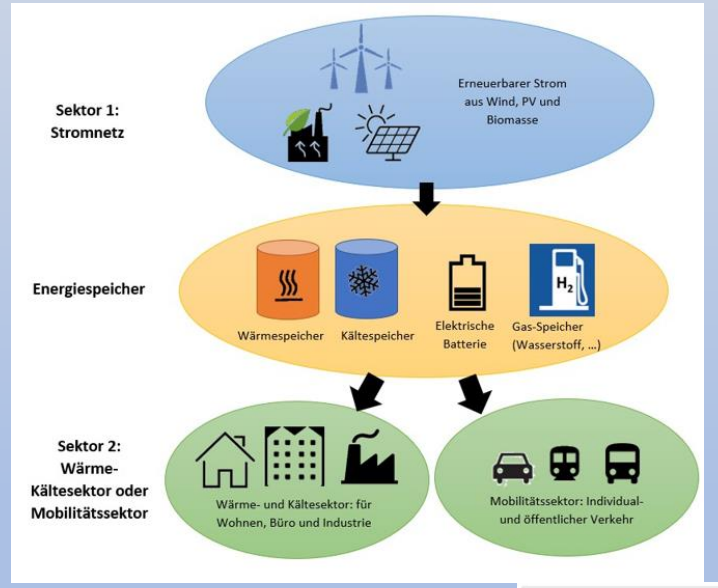


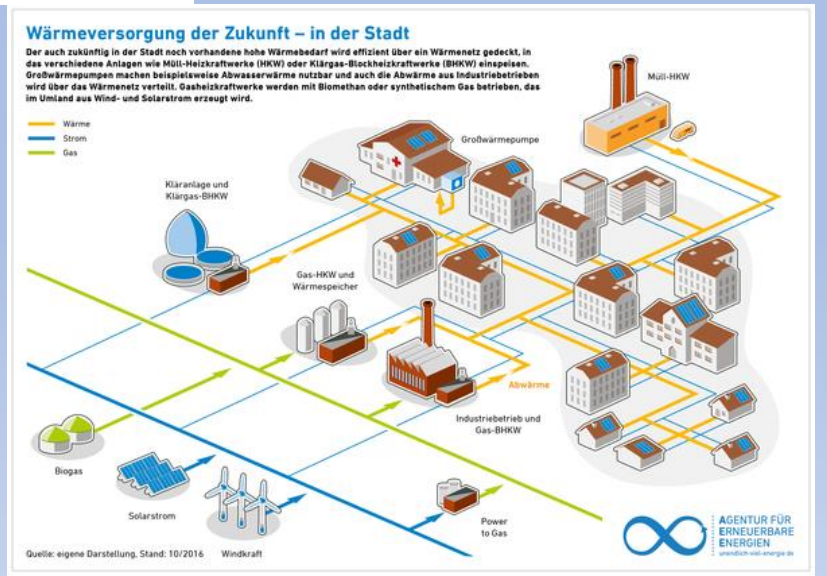
R-CR picture SOBOS investigation area

District heating grids decarbonized - sector coupling

Possible grid connections of CO2-free energy sources:

- Geothermal energy
- Wood pellets
- Wood chips
- Heat pumps
- Solar energy
- Heat from green electricity (power to heat boilers) or
- Waste heat from green electricity CHP (biogas, bio-oil)
- Waste heat from industry
- Waste heat from energy production processes (H2 electrolysis, compressed air - air storage, gas compression...)





Project partners, participants and institutions:

Wärmeverbund
Südostbayern-Oberösterreich-Salzburg

Bundesrepublik Deutschland

Republik Österreich

Regionalwerk Chiemgau-Rupertiwinkel

Bundesministerium für Wirtschaft und Klimaschutz

Bundesministerium Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie

Bayerisches Staatsministerium für Wirtschaft, Landesentwicklung und Energie

LAND SALZBURG

Research Studio iSPACE

GEF Ingenieur AG

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Summary

- The regionalization of the heat, electricity and telecom market offers the possibility of meaningful networking and use of energy at the municipal level, and for suppliers such as deep geothermal energy, it represents the link between the individual plant heat source and heat sink.
- Thus, local, regional and supra-regional links for energy production from renewable energy sources can be thought of and realized on a large scale.
- A heat grid creates a supra-regional heat market and offers opportunities in distribution of heat from waste heat, geothermal energy and other heat processes.
- A heat grid following a supra-regional coordination of the development measures avoids redundancies, missinvestments and ensures the overall economic efficiency by integrating all potentials.
- The regionalization of the individual projects brings regional added value (revenues, indirect profitability and taxes) to the region.
- By linking the sectors and the multiple benefits of a coordinated operation, improvements in the local, regional and supra-regional energy networks are possible.
- Coordination in subsidy management also enables optimization of national and international investments.
- The emission situation and CO2 savings can be massively influenced by this project approach locally and cross-border and improved in the sense of decarbonization.

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As a result, a combinded heat grid ccould become an European energy region in the Berchtesgaden – Traunstein – Salzburg and Inn-Salzach Euregioarea.