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REPUBLIC OF SLOVENIA
MINISTRY OF THE ENVIRONMENT,
CLIMATE AND ENERGY



Deep Geothermal Energy for Decarbonizing the City of Vienna

Strategic cooperation between a utility company and the oil & gas industry

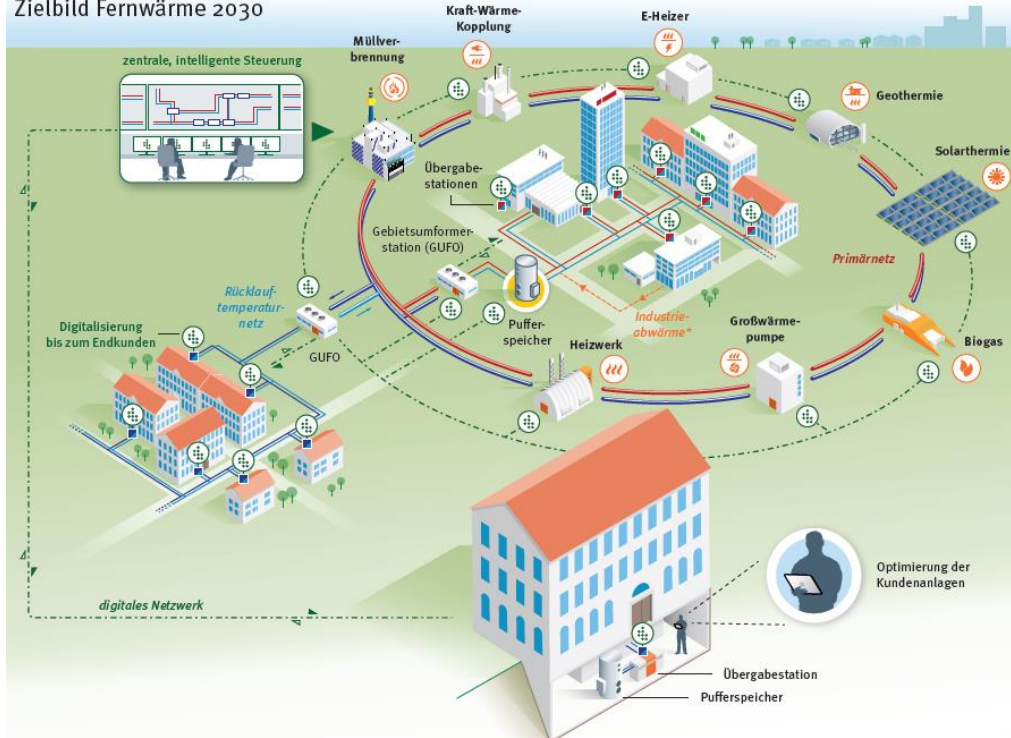
Roundtable 2023, Bernhard Novotny & Peter Keglovic

Agenda

- Decarbonizing the heating grid
- Research & Development project „GeoTief Wien“
- Joint Venture to utilize geothermal energy for Vienna
- Development of the geothermal potential
- Pilot project „Hydros Seestadt“

Decarbonizing the heating grid

Zielbild Fernwärme 2030



Current heat distribution network

- Heat distribution network covers ca. 36% of the entire heat market in Vienna
- Stake of renewables: 18%
- Customers: ca. 400.000
- Network length > 1.200 km

3 pillars of decarbonizing the heat distribution network

- Diversification of production portfolio
 - Deep geothermal energy
 - Usage of waste heat
 - Seasonal heat storages
- Digitization of heating grid
- Sustainable optimization of the customers

Climate neutral heating grid 2040

- 2040, 56% of heating demand to be covered by heat distribution network
- 55% in the portfolio of the heat distribution network will come from deep geothermal energy and industrial heating pumps

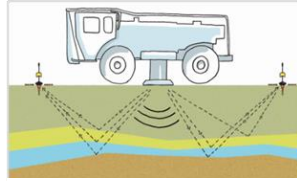
Step by step to green heat



Essling TH1
Knowledge gain from old geothermal well

GeoTief Wien

Starting GeoTief
Exploration planning



2D seismic
Pilot seismic in the east of Vienna



3D seismic
Seismic data acquisition over 160km²



Interpretation
Developing a geological 3D model



Production test
Proof of hot water in Vienna's subsurface



Joint Venture
Wien Energie / OMV

2012

2016

2017

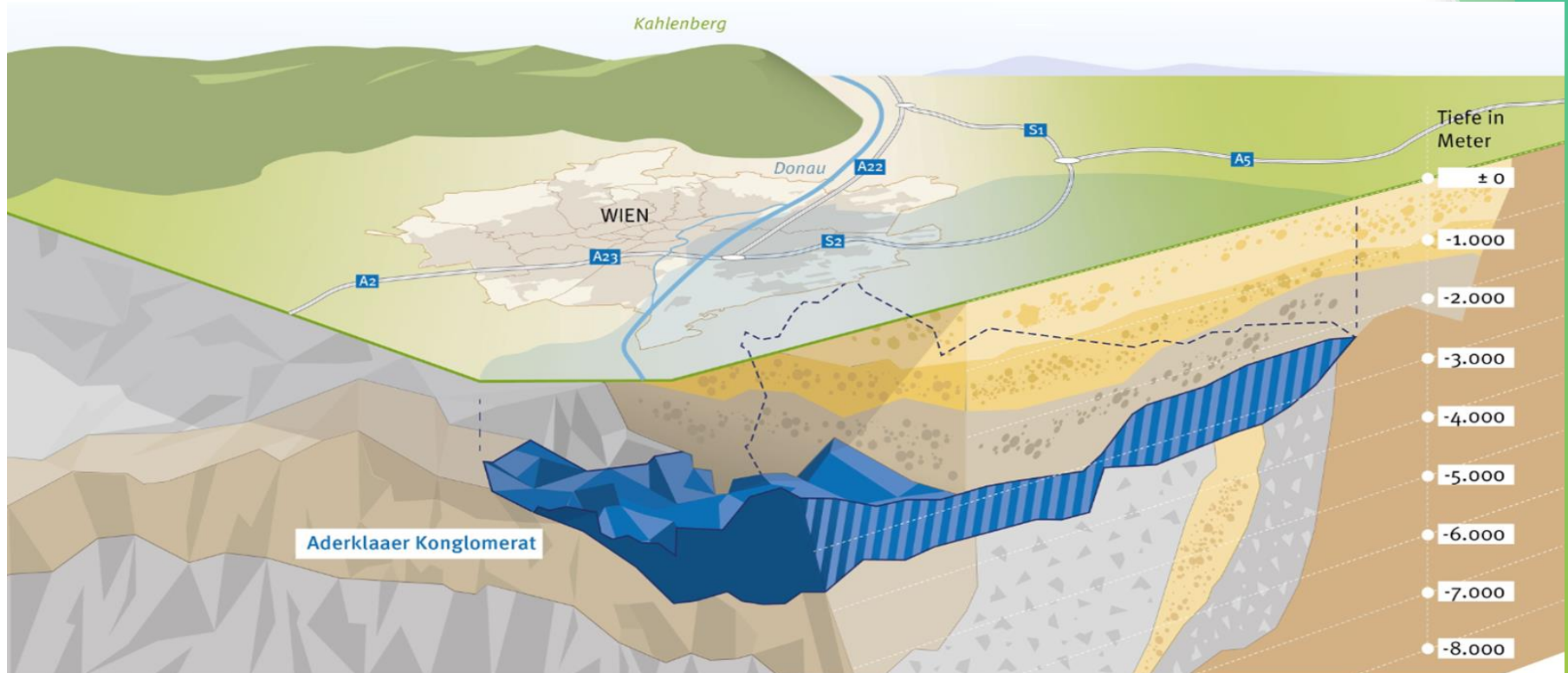
2018/19

2020

2021

2023

Treasure beneath Vienna's feet



Essling TH-1 - Production test



Production test

Proof of hot water in
Vienna's subsurface



Knowledge gain

Test results de-risk
planning of pilot plant



„Deeep“ geothermal joint venture Wien Energie/OMV



Wien Energie operates numerous **heat generation plants** and one of the **largest district heating networks** in Europe.

By 2040, Wien Energie aims to make its **district heating production** completely **climate-neutral**. Geothermal energy plays a decisive role.

Wien Energie is responsible for the **planning and construction** of the surface facilities, including **construction and operation** of heat exchangers, heat pumps and the transfer of the heat to the district heating network.

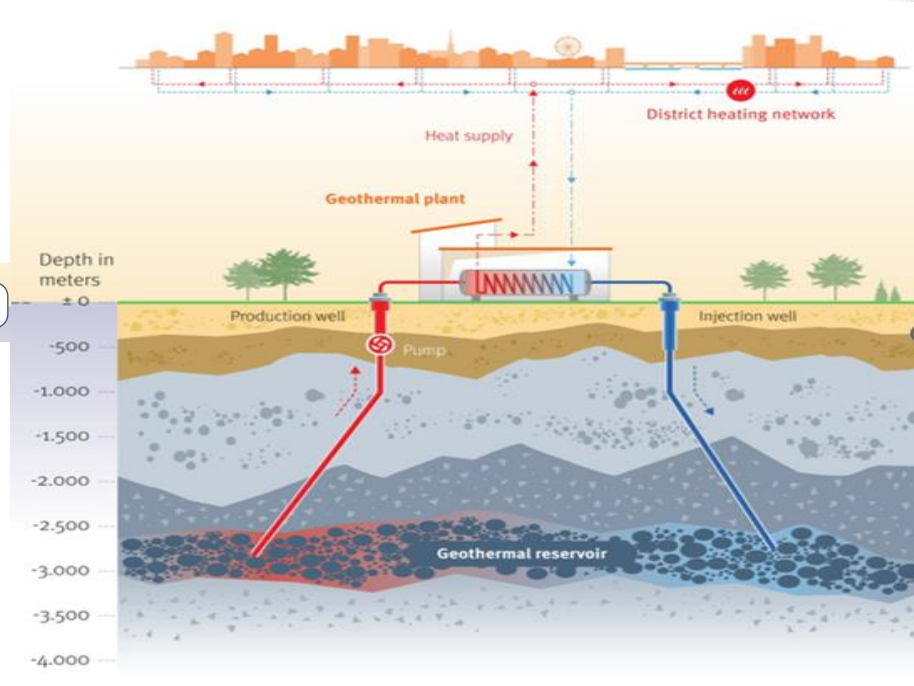
deeeep Tiefengeothermie GmbH
Joint venture



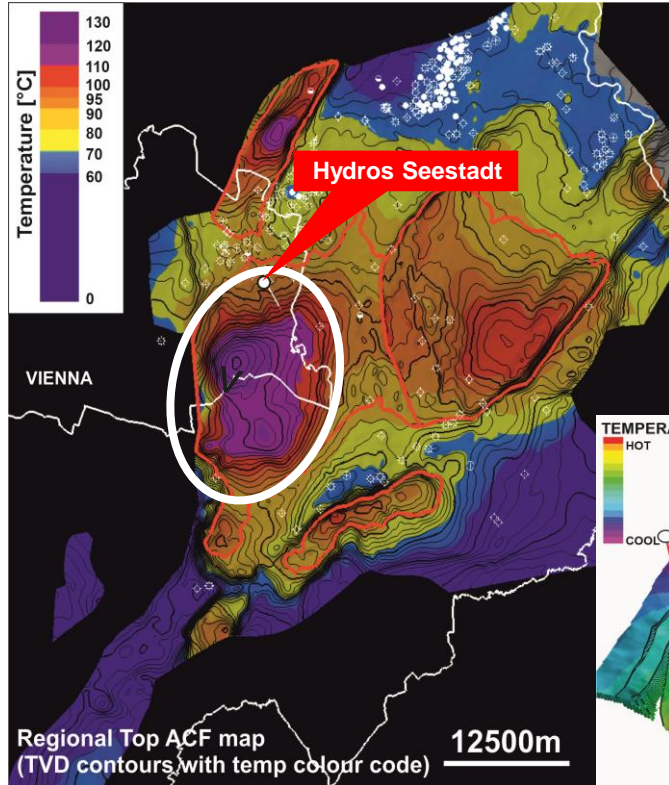
As a globally active company, OMV has decades of experience in the fields of **geology and geophysics** as well as **drilling and production technology**.

The use of deep geothermal energy is one of OMV's strategic goals to provide **low-CO₂ forms of energy** in the future.

In the joint venture, OMV is responsible for all **subsurface activities**, i.e. the **planning and drilling** of geothermal wells and the **production** of hot water.

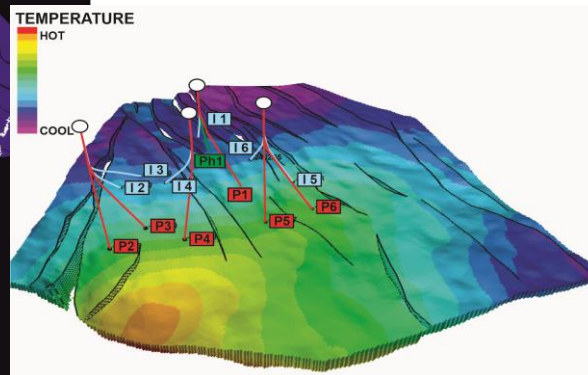


Aderklaa Conglomerat formation



Development Aderklaa Conglomerat Formation

- Several mini basins in an area of >1000km²
- Focus on Schwechat depression due to the good geothermal potential and proximity to the heat distribution network infrastructure
- Field development plans to lift as much geothermal potential as possible
- Development of ca. 7 geothermal plants along the northern flank and in the central part of the Schwechat depression
- Depths of 4000m and temperatures of approx. 130°C could be reached



Internal

- Several geothermal dubletts per location possible to utilize synergy effects
- Planned development of approx 200MW_{th} capacity to deliver 200.000 Viennese households with green heat.

Pilot plant - Hydros Seestadt

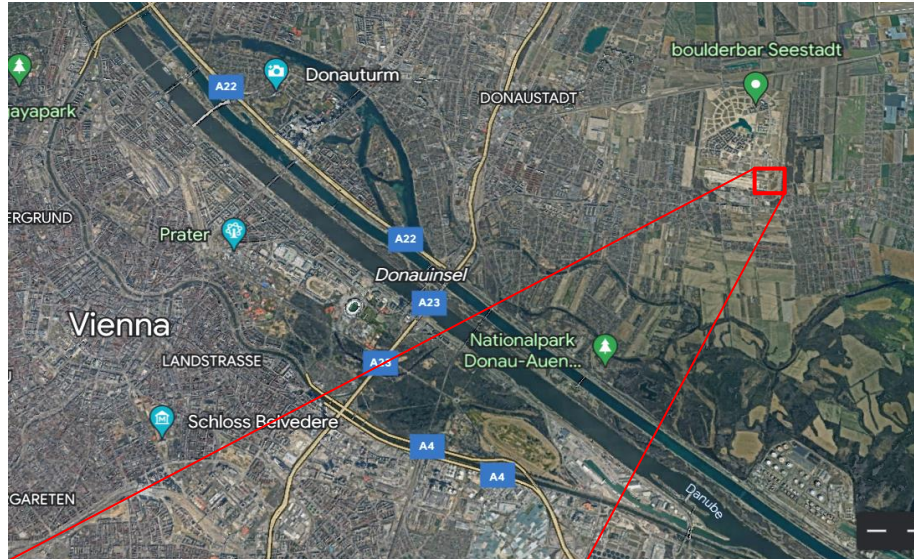


20 MW_{th}

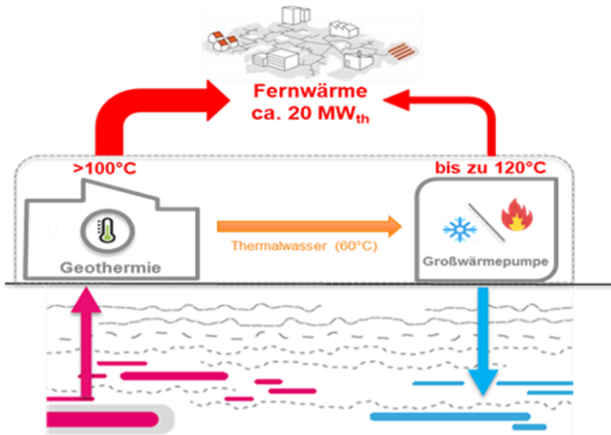
Geothermal plant combined with an industrial heat pump

From 2027

Supplying 20.000 Viennese Households with green energy



Internal





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Thank You

Saubere Wärme
aus der Tiefe nutzen.