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GEOTHERMAL DISTRICT HEATING SYSTEMS IN SLOVAKIA

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SLOVGEOTERM a.s.

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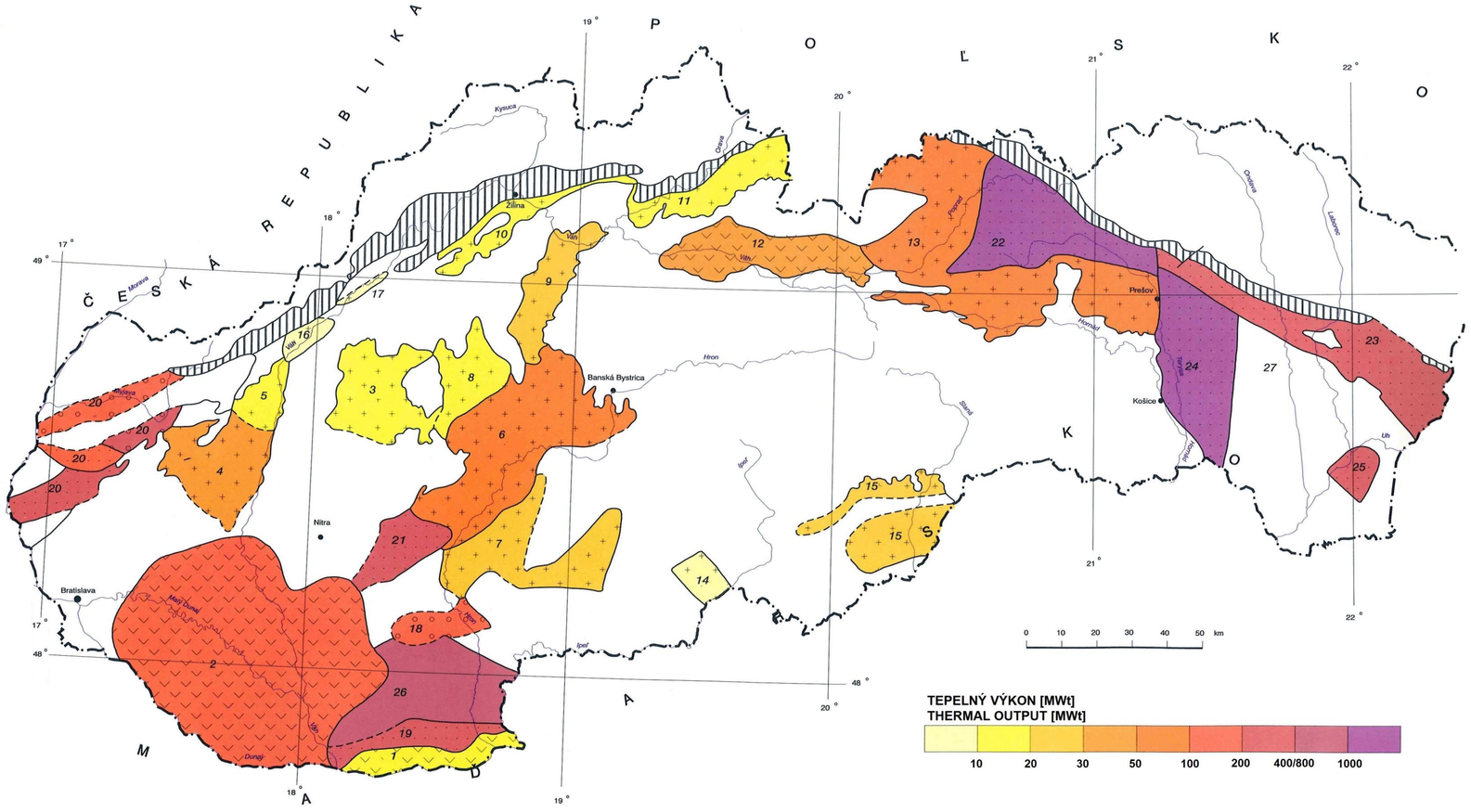
SLOVAK REPUBLIC



- Is categorized as better-than-average region regarding geothermal energy resources
- Good knowledge of geological conditions thanks to research and exploration works focused mainly to Oil & Gas
- Atlas of Geothermal Energy of Slovakia (1995)
- ~ 30 selected areas
- ~ 5 600 MWt

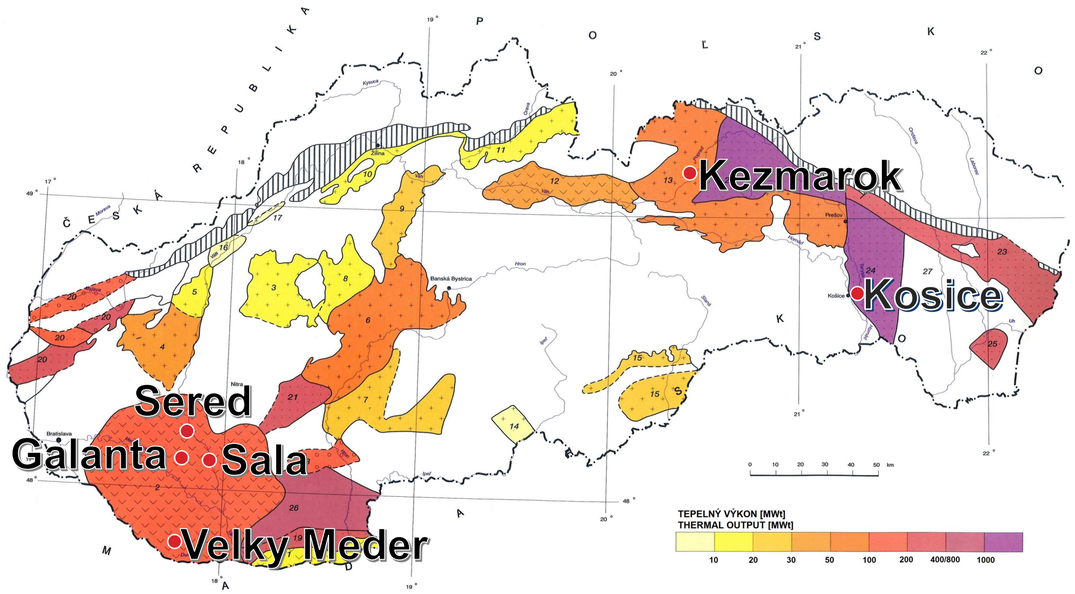
Geothermal District Heating Systems

4 Existing Geothermal DHS

- **Galanta** (1996) – reference DHS
- **Sala** (2010)
- **Sered** (2011)
- **Velky Meder** (2016)

2 Geothermal DHS in phase of construction

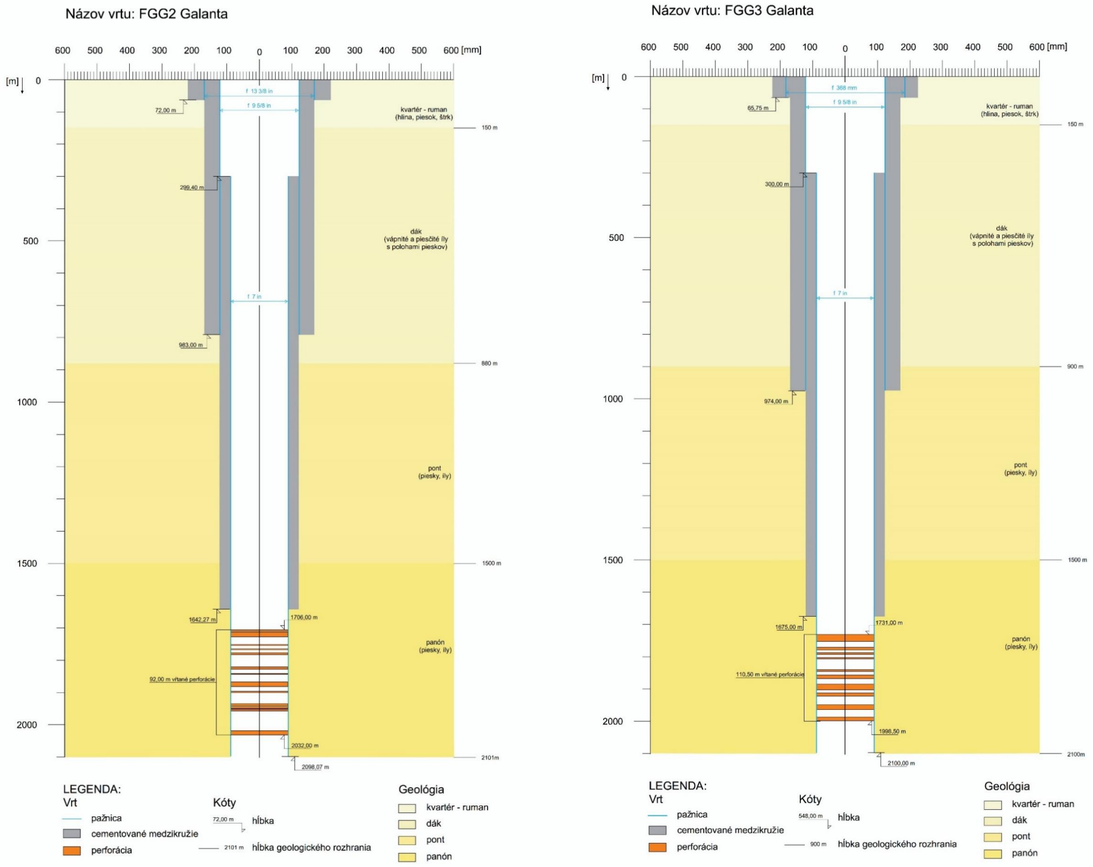
- **Kezmarok** – drilling works in progress, expected commissioning in 2023
- **Kosice** – large scale DHS, 3 existing wells (135 °C and 55 l/s), close to contract signing, expected commissioning in 2026



Galanta (1)

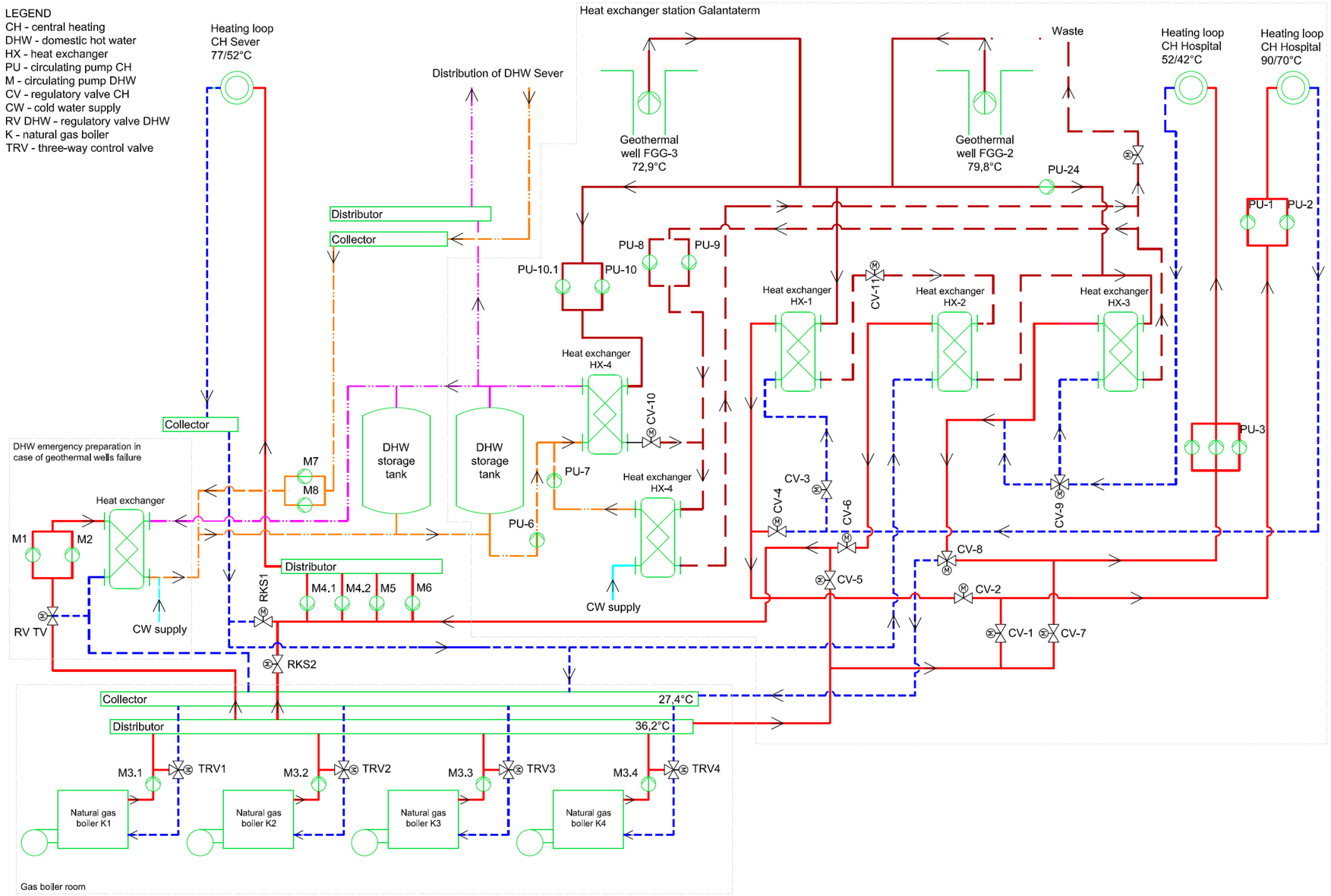
The First Geothermal DHS in Slovakia

- Two geothermal production wells
  - FGG-2 (2 100 m, 13,7 l/s, 81 °C)
  - FGG-3 (2 100 m, 13,5 l/s, 77 °C)
- Collector rocks: sands and sand stones
- Central heat source (Energocentrum)
- Utilized geothermal water is being drained into Vah river (no reinjection)
- Secondary utilization in aquapark



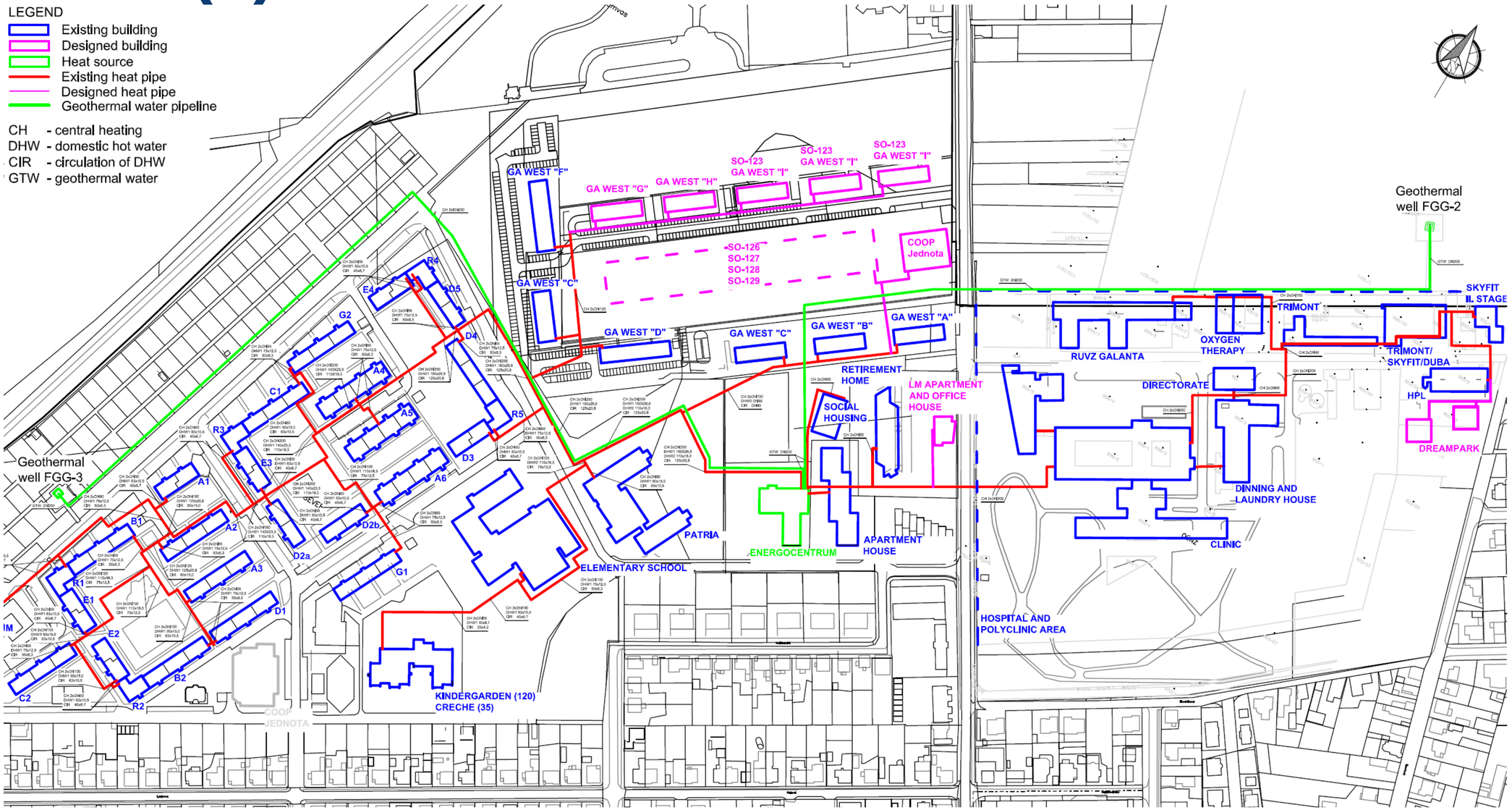
Galanta (2)

Principal Scheme of the Central Heat Source



Galanta (3)

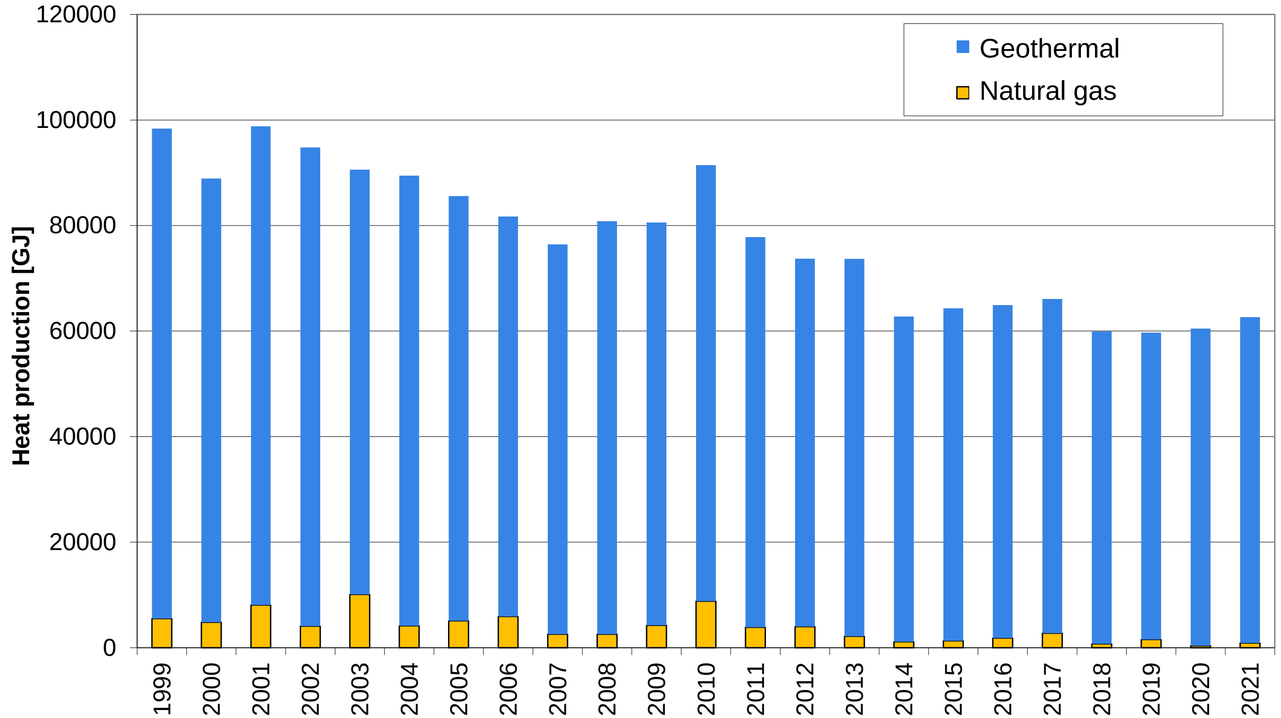
Distribution Network Situation Plan



Galanta (4)

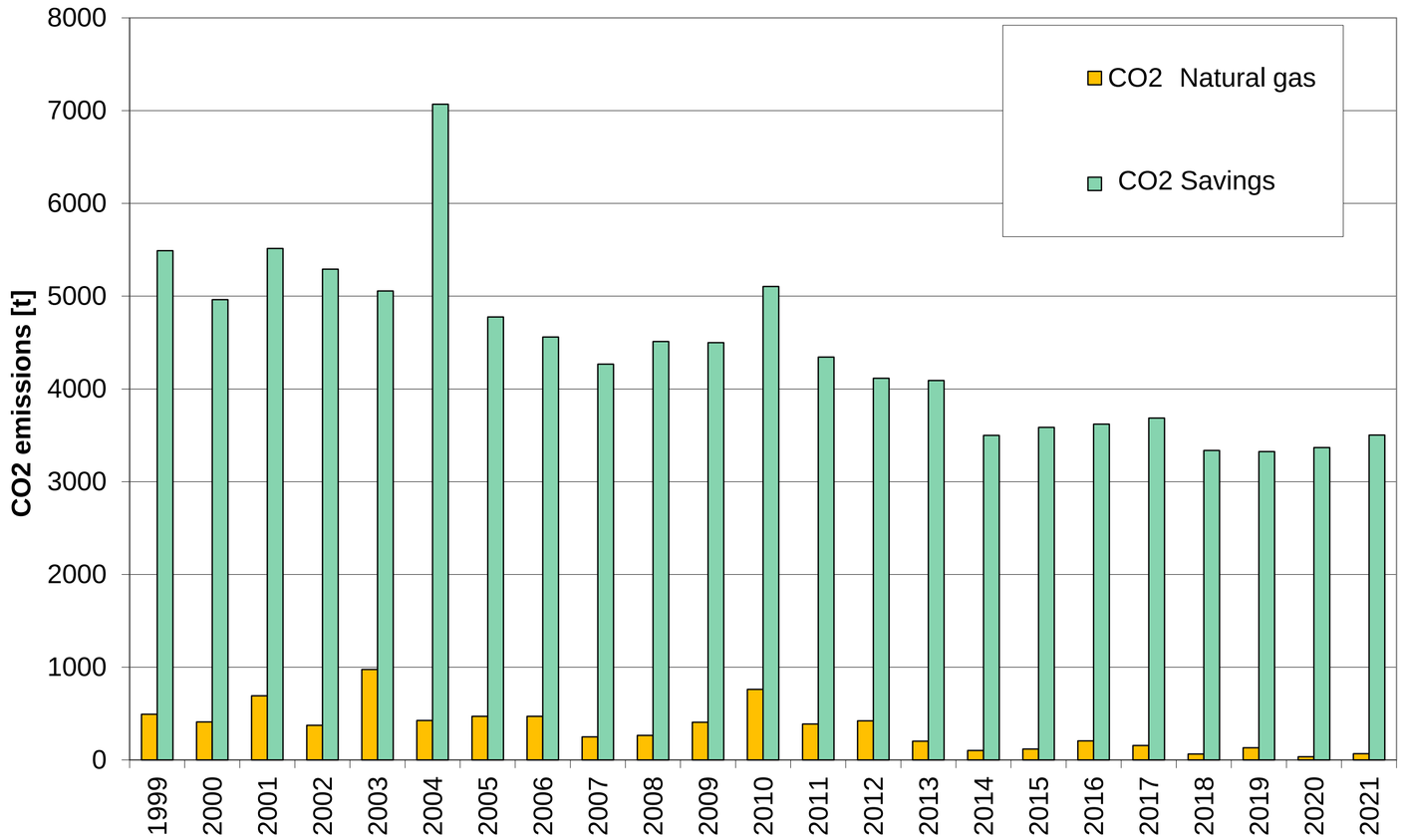
Annual heat production

- **Annual overal heat production in 2021:** **17 402 MWh (62 647 GJ)**
  - Heat production from geothermal: 17 159 MWh (61 774 GJ) = **98,6 %**
  - Heat production from natural gas: 243 MWh (873 GJ) **= 1,4 %**



Galanta (5)

Annual CO2 emission savings (in comparison with natural gas boilers)



Galanta (6)

Heat price

- Heat price from modern geothermal DHS in Galanta =

  ~ 50,78 €/MWh (14,10 €/GJ)

- Heat price from another obsolete natural gas boiler plant in Galanta =

  ~ 65,04 €/MWh (18,07 €/GJ)

- **Geothermal heat is 22 % cheaper**

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Thank you!

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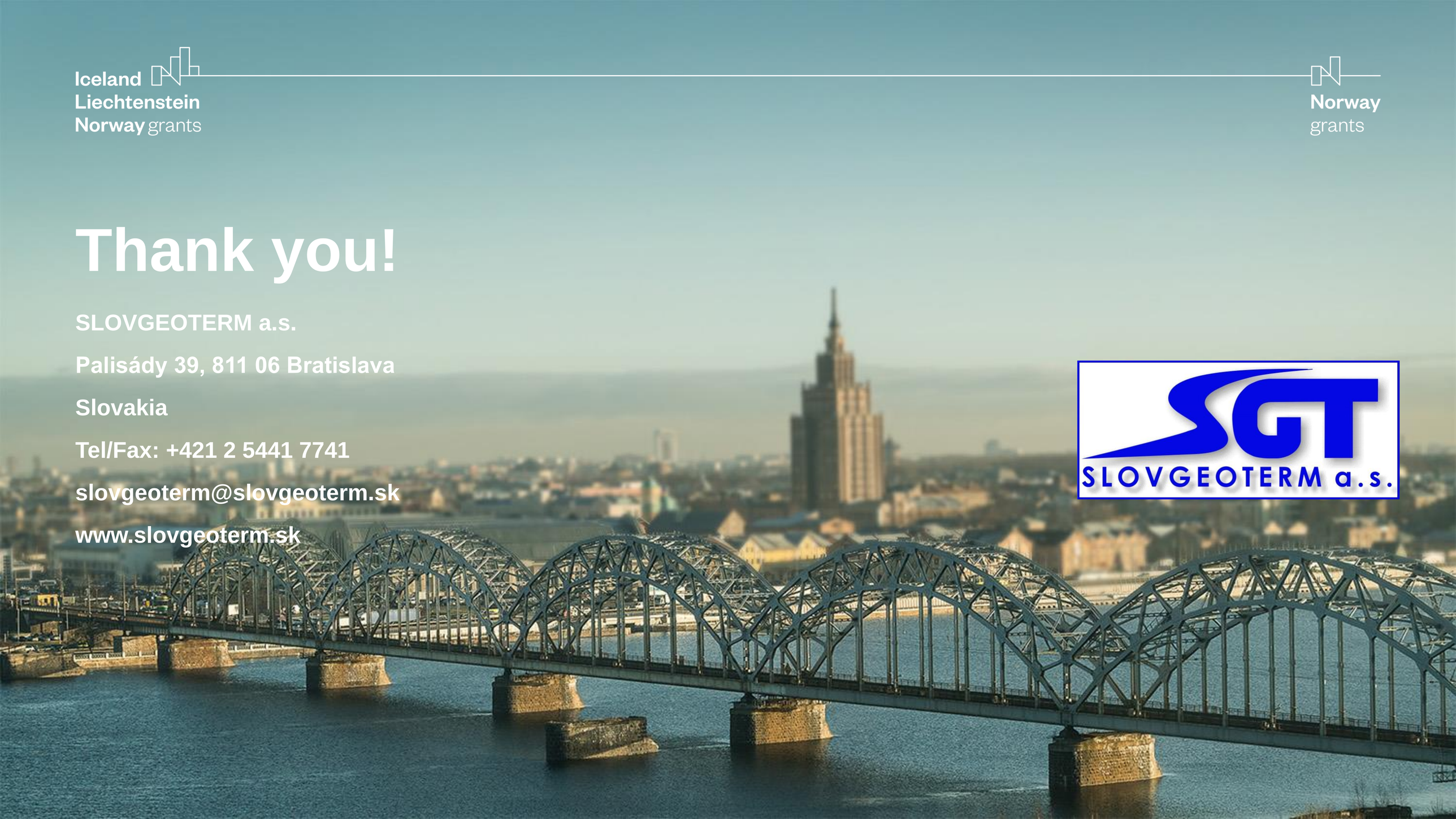
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