# Geothermal district heating projects in the South Great Plain II.

## The Szeged systems

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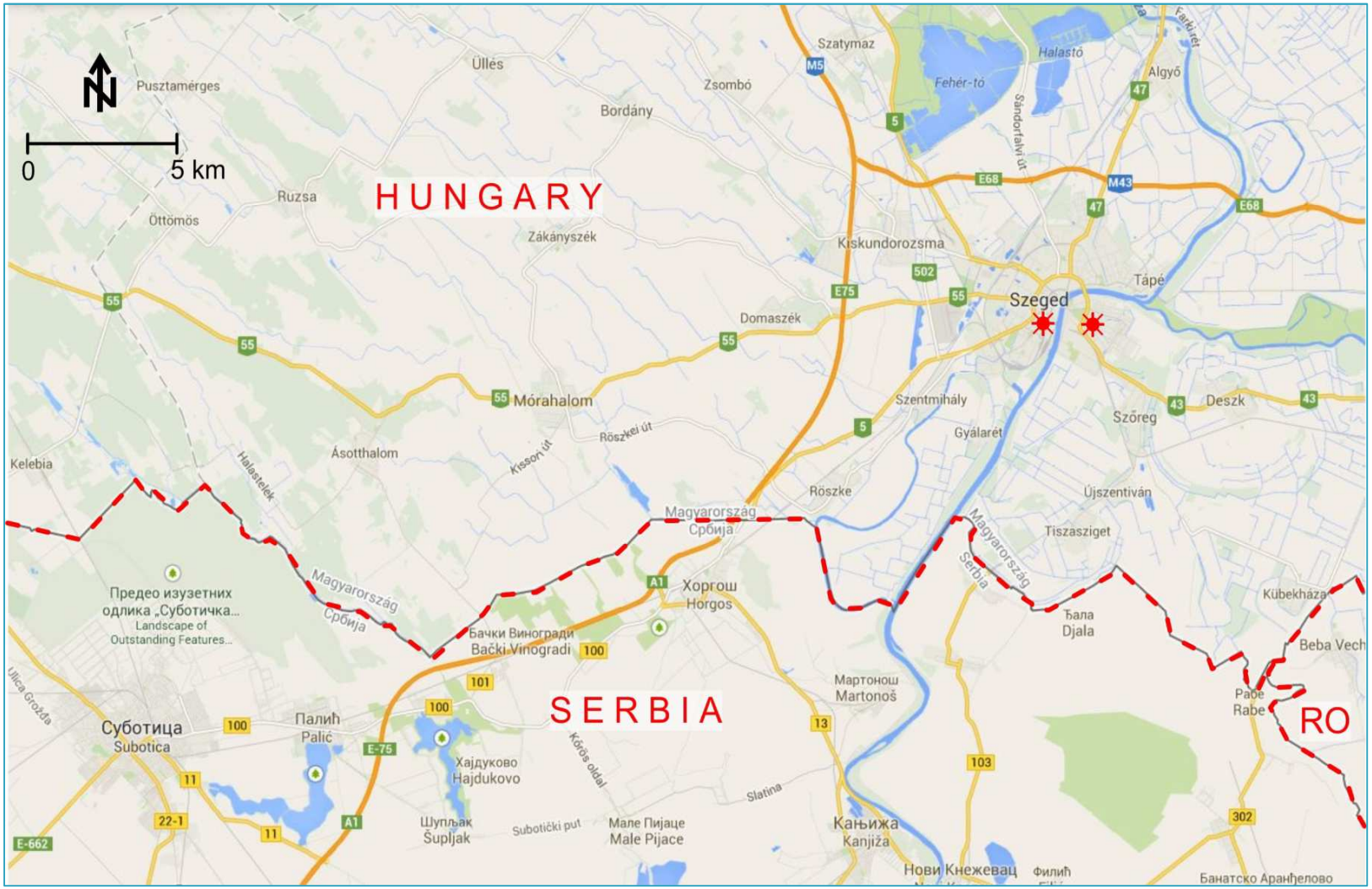
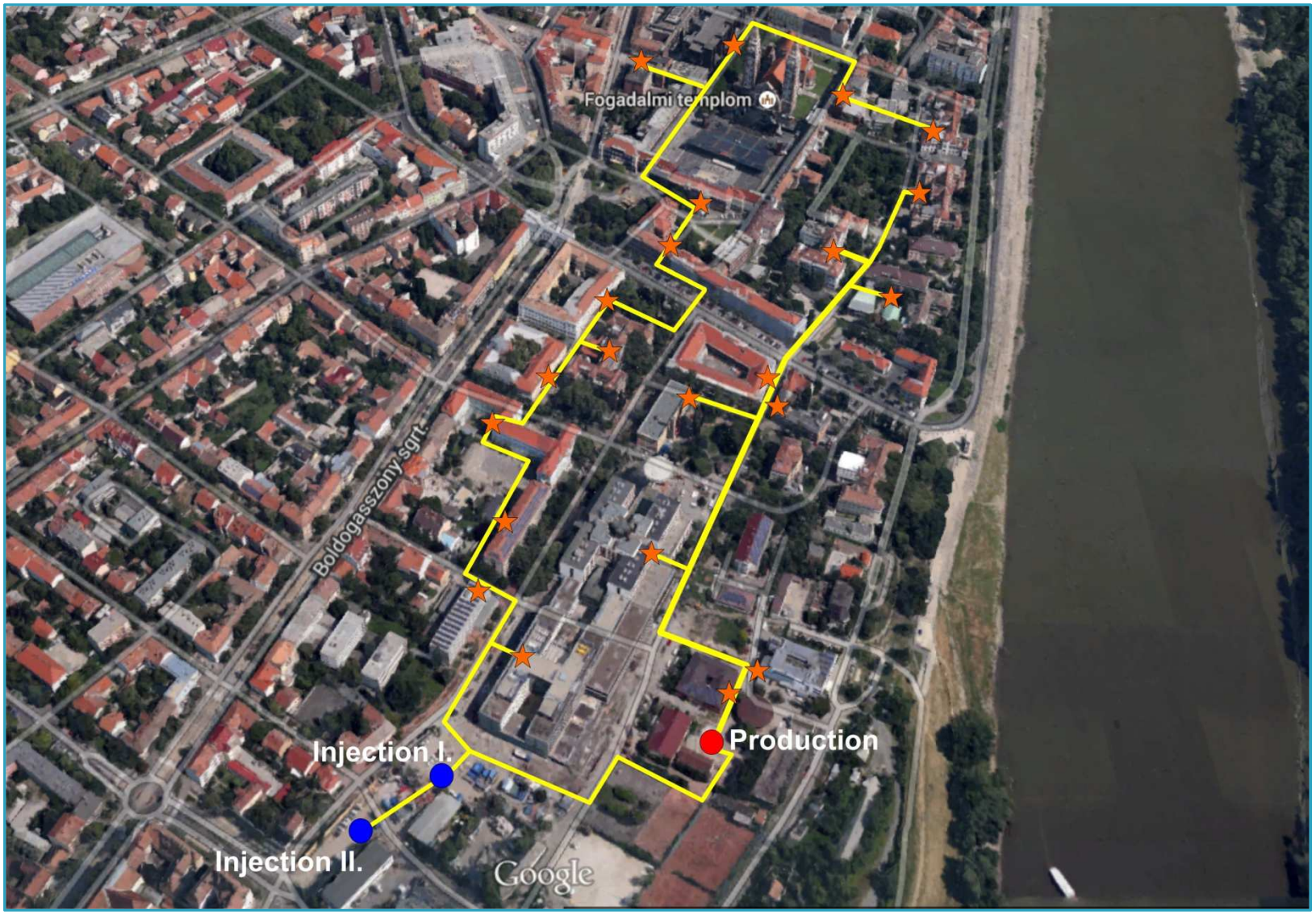
# Szeged…

# The twin systems in Szeged



# The geothermal cascade system in the city centre



# Parameters of the downtown geothermal circle

**Construction of the 4.4 $MW_{th}$ project**

- 1 production well (1,995 m)
- 2 injection wells (1,350 m; 1,750 m)
- pipe line ~ 3,300 m
- 25 new heating centres
- Online PLC control system

**Outcomes of the project**

- Produced geothermal energy: 55,239 GJ/y
- Natural gas reduction: 1.8 million $m^3$/y
- $CO_2$ reduction: 3,633 t/y
- Spending on investment: 6.6 million €
- Investment/produced energy: 1,410 €/kW)
- Specific investment of $CO_2$ reduction: 1,830 €/t
- Maintenance cost: 280,000 €/y
- Profit: 0.45 million €/year

# Geothermal DH system in New-Szeged

# Parameters of the New-Szeged geothermal circle

**Construction of the 4.5 $MW_{th}$ project**

- 1 production well (2,000 m)
- 2 injection wells (1,250 m; 1,700 m)
- pipe line ~ 4,400 m
- 12 new heating centres
- Online PLC control system

**Outcomes of the project**

- Produced geothermal energy: 37,167 GJ/y
- Natural gas reduction: 1.2 million $m^3$/y
- $CO_2$ reduction: 2,343 t/y
- Spending on investment: 4.2 million €
- Investment/produced energy: 860 €/kW)
- Specific investment of $CO_2$ reduction: 1,780 €/t
- Maintenance cost: 193,300 €/y
- Profit: 0.37 €/y

Thank you for your kind attention

Have a nice trip to Mórahalom