Sewage heat recovery for district heating and cooling
Pilot installation @Demo site in Budapest, Hungary

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Pilot Site – Újpest

District heating system providing heating and cooling to three buildings

The combined served floor area is 12,500 square meters

Újpest – Northeastern district of Budapest with over 100,000 habitants

New Market Hall
Mayor’s Office
Government Window
Energy from Sewage - Sewage heat recovery to provide heating and cooling
Unique configuration

Screening unit at THW’s Military Hospital
**Újpest Installation**

**Basic data of existing system, H4C innovations and their potentials**

- Flow of wastewater (# of HEX: 12): 250 m³/h
- Average temperature of wastewater: 17°C
- T of return wastewater (heating): 10°C
- T of return wastewater (cooling): 25°C
- Heat Pump capacity in heating mode: 981 + 709 = 1690 kW
- Heat Pump capacity in cooling mode: 1020 + 728 = 1748 kW
- Efficiency:
  - COP/EER: 3.85/5.8
- Δ T (heating): 60/50 °C
- Δ T (cooling): 7/12 °C
- Flow of water (heating): 212 m³/h
- Flow of water (cooling): 302 m³/h
- Power demand (above heat pump): 42 kW

**H4C Research**

Newly designed self-cleaning screening unit & fine-tuned heat exchangers to improve operating efficiency and perfect district heating potential.

**Potential**

*Sewage heat-fed heat pumps to provide or supply district heating*

The average European city of **one million habitants** flushes away close to 300,000 m³ of sewage each day. Enough to sustainably heat and cool almost 800,000 m² floorspace in buildings!

EU: population of ~500 million → Heating and cooling potential: **400 million m²**
Thank you for your attention!

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