



EFFICIENT SOLUTION FOR LARGE HEAT PUMPS: SEWAGE HEAT RECOVERY

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Abstract:

Inside the sewer there is a hidden and rarely used, stable temperature energy source to be found: the communal, household and industrial wastewater. A heat pump based technological solution has been developed to harness and utilize energy resided in wastewater to heat and cool buildings. This means for a city like Paris the potential of min. 200 MW energy-generation! The challenges are to use this valuable resource on site amongst city circumstances, to make it upsizeable to several MWs requirements and to achieve a highly efficient system (COP above 6!) in order to make it financeable. Driven from the technology solution's "independence" from the sewers (nothing installed inside the pipeline) the system's implementation is flexible, after ten years of development its possible size only depends on the wastewater flow. The technology developed has been monitored during operation for over 8 years at different locations (sizes: 1 - 3.8 MW). Learning from this unrivalled operational experience and the monitored performance data the technology solution has been improved through minimizing energy consumption, evolving efficiency of heat exchange, optimizing maintenance requirements and SCADA system.

Biography:

Since 2008, Mr. Kiss has served as the MD of the THERMOWATT Ltd. mainly developing and implementing its proprietary, heat pump based technology - co-invented by Mr Kiss - using the heat of sewage for cooling and heating large buildings and districts, patented in 37 countries now. In parallel, Mr Kiss is currently President of the Hungarian Heat Pump Association (MAHOSZ) and member of the EHPA ICHP (large heat pump) work group. His former placements include Development Director of the Hungarian Ministry of Environment where



he supervised EU grant financed investments in the fields of wastewater, drinking water, flood protection and solid waste management with a total value of 1.5 billion Euros. Formerly he held MD and deputy MD positions at water and wastewater civil works companies adding to 20 years experience in the water and environmental sector and over 10 years in the energy field.

Publication of speakers:

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