GRUNDFOS iGRID

a digital enabled method to reduce carbon emissions in district heating
There are great benefits to be realised through low temperature district heating

- 480,000 GWh district heating energy sold in 2017 with only a small amount of the energy based on renewables
- 800,000 households in Europe could get free energy from a 20% heat loss reduction in half of the existing grid
- 600,000 GWh district heating energy sold in 2030? Most energy based on renewable sources

Source: Euroheat & Power

>2,000,000 tonnes of carbon emission

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LOW TEMPERATURES IN DISTRICT HEATING
Reduce heat loss and integrate more renewables

BEFORE: CENTRALIZED PRODUCTION FOCUS

AFTER: DE-CENTRALIZED CUSTOMER FOCUS

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Zoning your heat grid increases overview and solves issues

Installing *Grundfos iGRID* in a district heating grid can help solve many of the challenges in energy distribution grids. With a grid divided into smaller sections (zones), the total overview and insights are increased dramatically.
An end-to-end solution

iGRID T-ZONE

Lower SUPPLY temperature

Data handling agreement

Lower RETURN temperature

Data analytics (meters)

New installations

Building balancing

iGRID Customer Portal

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Insights and control options in the heat grids
One solution - many benefits

Viborg – wants to adapt supply temperature to all extension areas to utilize new energy sources delivered by heat pumps.

Krefeld Germany – wants to increase assets lifetime by reducing temperatures. A doubling of pipe lifetime possible, by reducing the supply temperature from 120 °C to 95 °C.

Albertslund – wants to reduce supply temperature in the entire distribution grid to reduce heat loss costs.

Gentofte – wants more capacity in existing pipelines to convert natural gas heated houses to district heating. Using heat loss reductions (free capacity) in pipes to add new customers.
iGRID with heat pumps to utilize local heat sources
Grundfos iGRID with a heat pump

1400 kW → 37 °C

37 °C → 245 kW heat

53 °C → 50 kW power

20 °C

195 kW

Surplus energy at medium temperature

COP = 4.9

65 °C

1645 kW

Energy source

90 °C

37 °C

(he loop is used only for peak loads)
THANKS FOR YOUR ATTENTION!

For further dialogue, please contact charleshansen@grundfos.com