



## **GRUNDFOS iGRID**

### a digital enabled method to reduce carbon emissions in district heating



Innovation Fund Denmark



Funded by the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement no. 846463









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## There are great benefits to be realised through low temperature district heating







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



![](_page_3_Picture_0.jpeg)

![](_page_3_Picture_2.jpeg)

#### 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.

![](_page_3_Figure_5.jpeg)

![](_page_4_Picture_0.jpeg)

![](_page_4_Picture_2.jpeg)

#### An end-to-end solution

![](_page_4_Picture_4.jpeg)

![](_page_4_Figure_5.jpeg)

![](_page_5_Picture_0.jpeg)

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#### Insights and control options in the heat grids

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![](_page_5_Figure_4.jpeg)

![](_page_6_Picture_0.jpeg)

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#### **One solution - many benefits**

![](_page_6_Picture_4.jpeg)

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

**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.

![](_page_6_Picture_7.jpeg)

![](_page_6_Picture_8.jpeg)

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

![](_page_6_Figure_10.jpeg)

![](_page_6_Picture_11.jpeg)

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.

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![](_page_6_Picture_14.jpeg)

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![](_page_6_Picture_20.jpeg)

![](_page_6_Picture_21.jpeg)

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![](_page_7_Picture_0.jpeg)

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![](_page_7_Figure_3.jpeg)

![](_page_8_Picture_0.jpeg)

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#### Grundfos iGRID with a heat pump

![](_page_8_Figure_4.jpeg)

![](_page_9_Picture_0.jpeg)

![](_page_9_Picture_2.jpeg)

### **THANKS FOR YOUR ATTENTION!**

# For further dialogue, please contact <u>charleshansen@grundfos.com</u>

![](_page_9_Picture_5.jpeg)

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![](_page_9_Picture_6.jpeg)

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