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Green deal impact of DHC networks: how best preforming piping systems make DHC even more attractive

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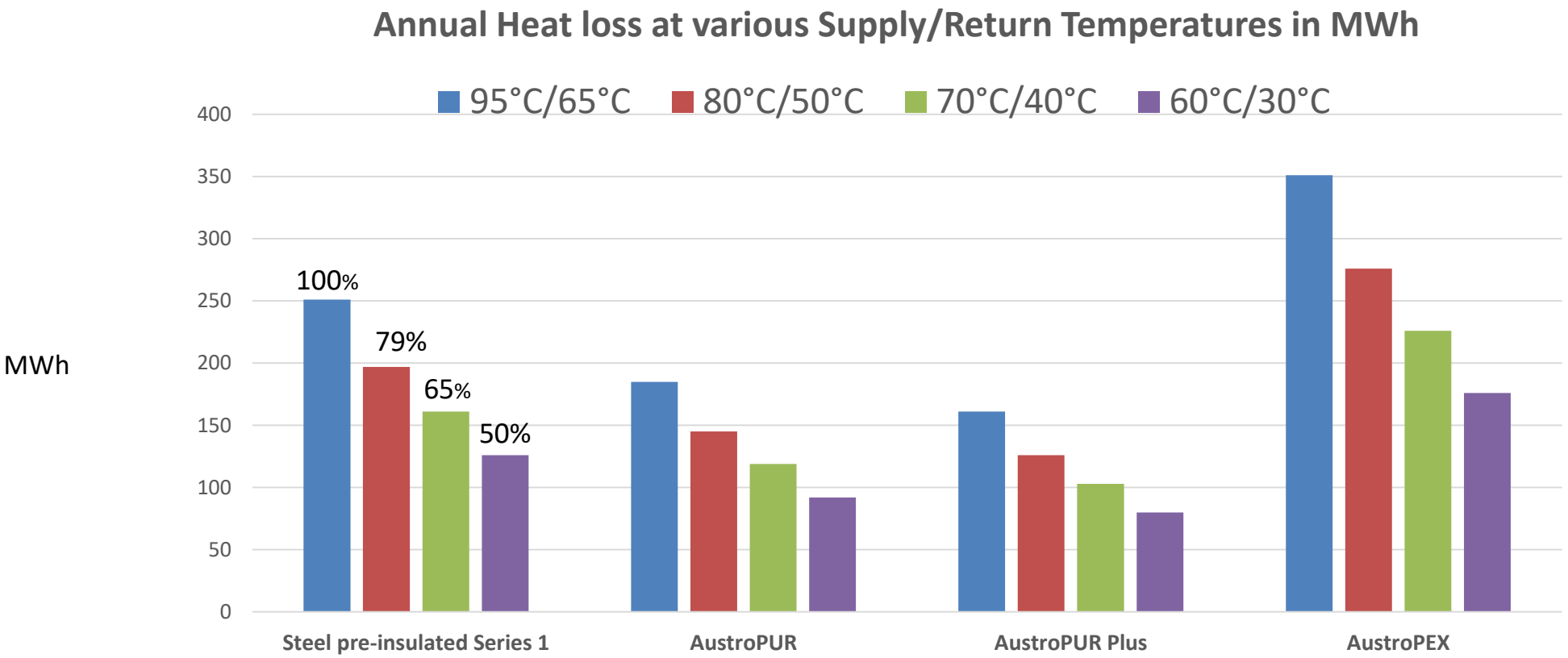
Sustainable Cities are key to EU green deal

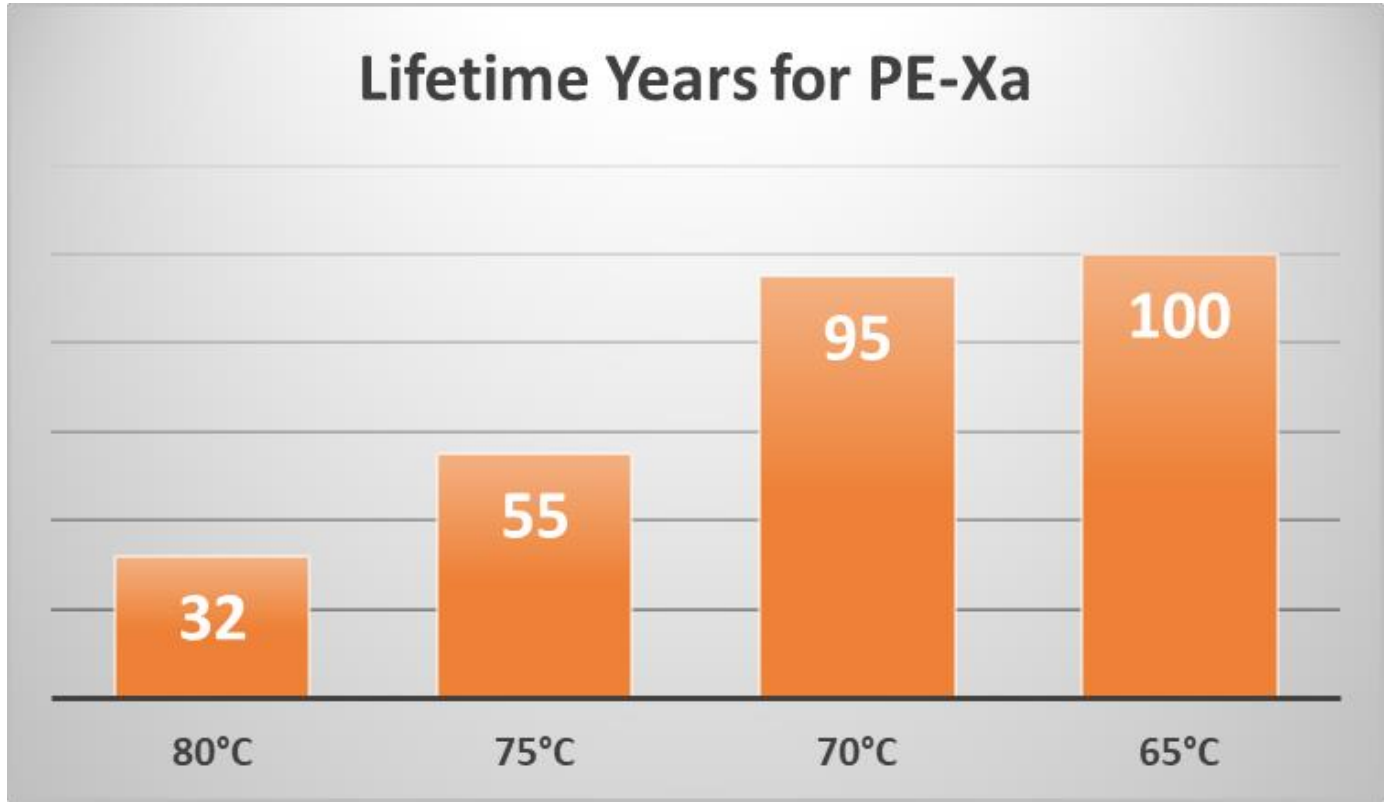
Source: Euroheat & Power

With Low Temperature District Heating up to 50% Savings



Life-time increase to 100 years

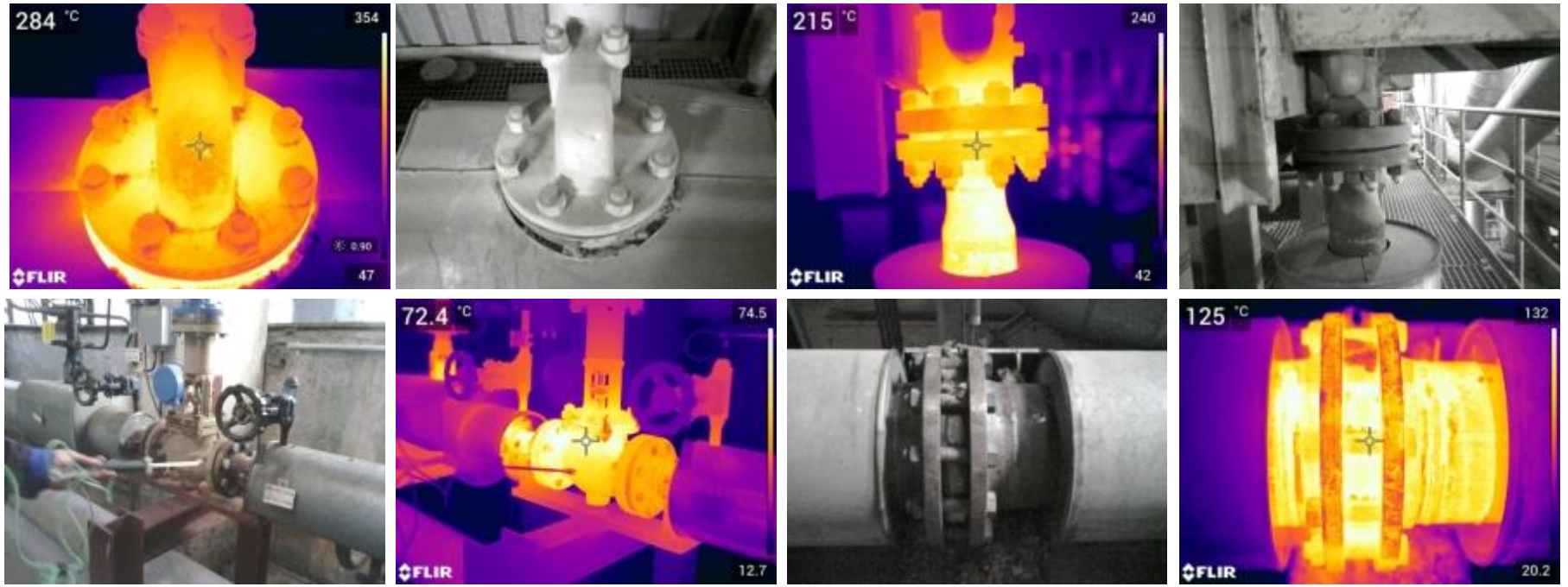
acc to EN 15632



24/7 operation time

Operation- **Temperature** **°C**	Maximum **Pressure** SF 1,25 **bar**	Minimum- **Lifetime** **Years**
50	10,5	100
55	9,9	100
60	9,4	100
65	8,8	100
70	8,3	95
75	8,0	55
80	7,6	32
85	7,2	19
90	6,9	11
95	6,6	7

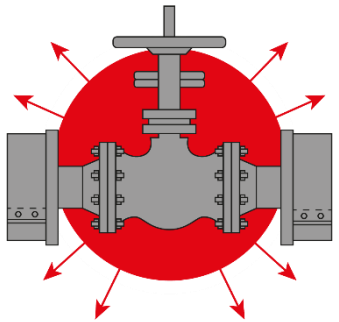
There is more to save…

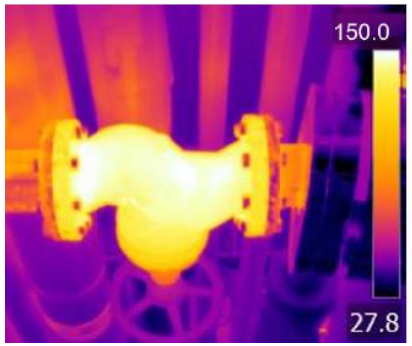


Eiif Study shows savings with Valve insulation equal to 20.000km with an E-Car

NON-**INSULATED** VALVE

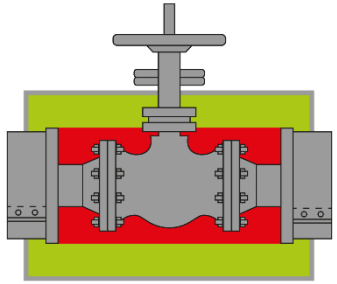
- Size: DN 150
- Temperature: 150 °C
- Operational time: 8.760 hours/year
- **Energy loss per year: 10.600 kWh**





INSULATED VALVE

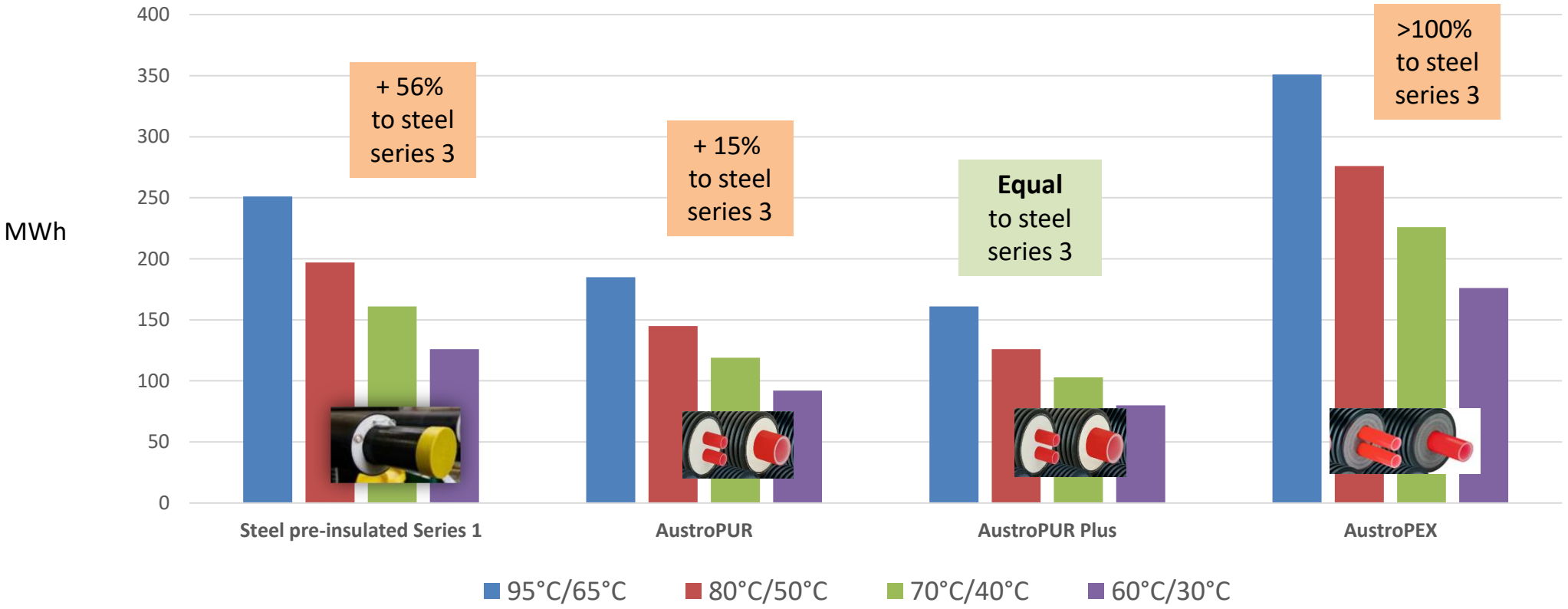
- **Energy loss per year: 600 kWh**
- **Energy savings per year: 10.000 kWh**
- **Savings equal to 20.000km with E-Car**



Source: Eiif Study 2021 - www.eiif.org

Key for DH Networks:
Selection of the best insulated solution

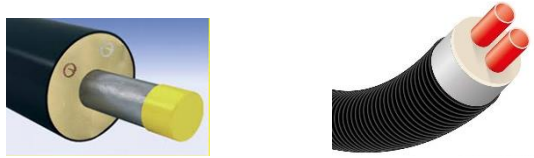
Annual Heat Loss in MWh for 1km network DN20 – DN100



38% savings
with best insulated DH pipes Series 3

Annual
Heat losses of DH pipes typically used today
188,0 MWh/km (typical product mix)
38,17 t CO2 – Equivalent per km

Annual
Heat losses of best insulated DH Series 3
115,0 MWh/km
23,35 t CO2 – Equivalent per km
> 14,82 t CO2 – Savings per km (= 38%)



Based on Diameter Range DN20 – DN 100

Saving Potentials with DH pipes Series 3 in Austria & Germany

CO_2 –Equivalent for new DH networks built 2021-2030

→2030 Austria: 40.800 t CO_2 - Equivalent

→2030 Germany: 408.000 t CO_2 -Equivalent

Km – Equivalent E-Car

2030 Austria: 460.000.000 km **equals to 23.000 E-Cars***

2030 Germany: 4.600.000.000 km **equals to 230.000 E-Cars***

*Calculated with 20.000km annual usage

Villach: Energy Island Landskron

finalized 2017/18

Customers:

217 residential units 24.000 m²

Energy sources:

Solar thermal: 970 m²

Ground water HP: 149 kW

District heating: max 2 MW

DH Network:

Trench length: 753m

Villach: Energy Island Landskron Experiences

- Apartment stations require min. 65°C
- 65% of supplied heat from Solar thermal & Geothermal
- Flow/return: 67°C / 37°C
- 750m DH network with AustroPUR Plus
- Heat loss: 5,6 %

There is a lot to save…….

- ✓50% savings with 35K lower **network temperatures**
- ✓20.000 km E-Car equivalent with 1 **single valve insulation**

- ✓38% savings with highest insulation level for **DH pipes S 3**
- ✓15 t CO2 Equivalent per km **DH pipes Series 3**

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Let‘s do it!