Kamstrup | SAV

Heat Network Monitoring and Optimisation

Kamstrup in short

1,500 employees +300 R&D engineers

+75 years of curiosity and innovation

319 mill. EUR turnover 2021

23 offices, more than 70 partners and active in +90 countries

150 robots

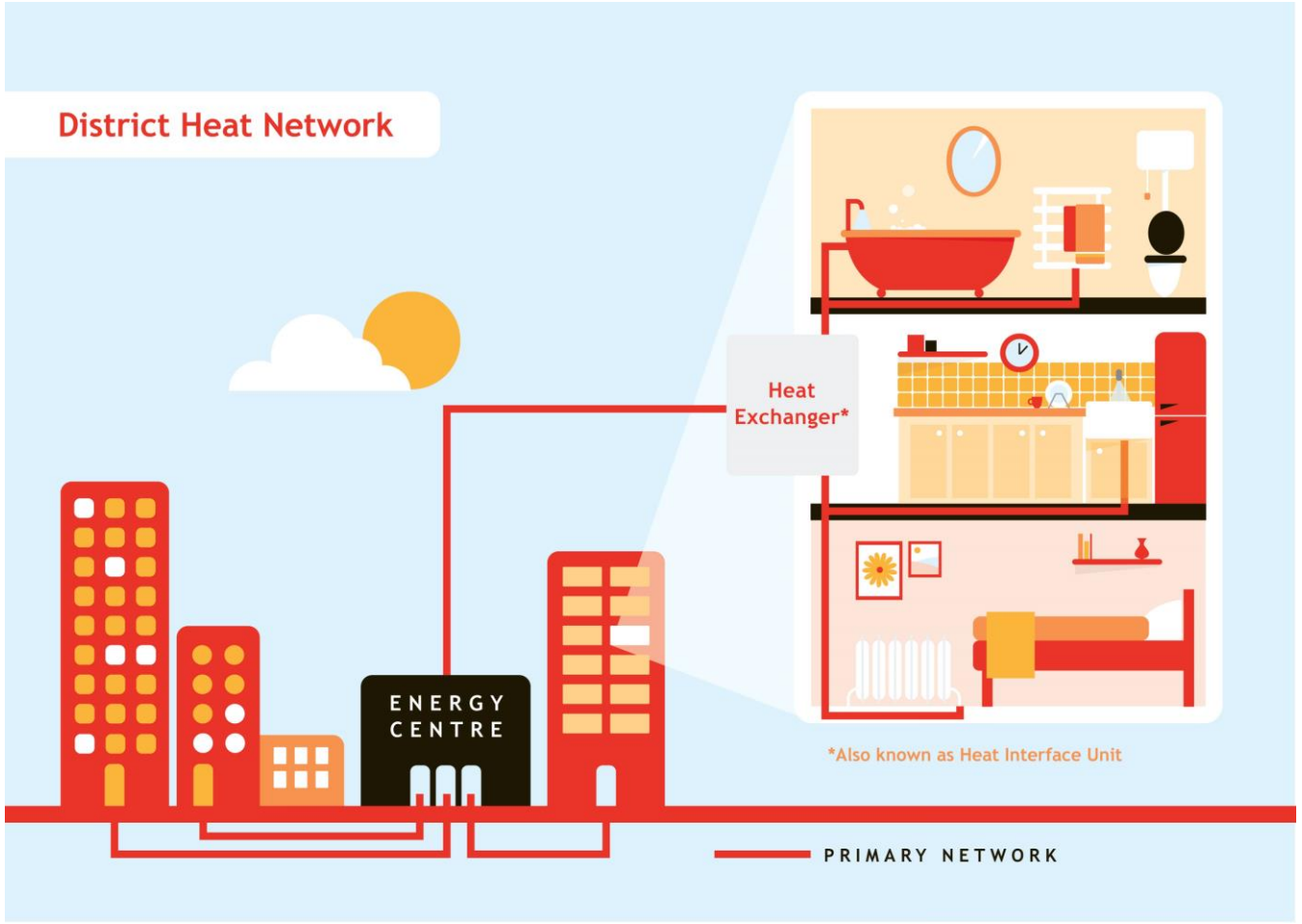
IT'S TIME TO KNOW

+21,000,000 meters installed around the world

Up to 13.5% of turnover invested in R&D

What is the purpose of a heat network?

Reliable heat
at
lowest cost



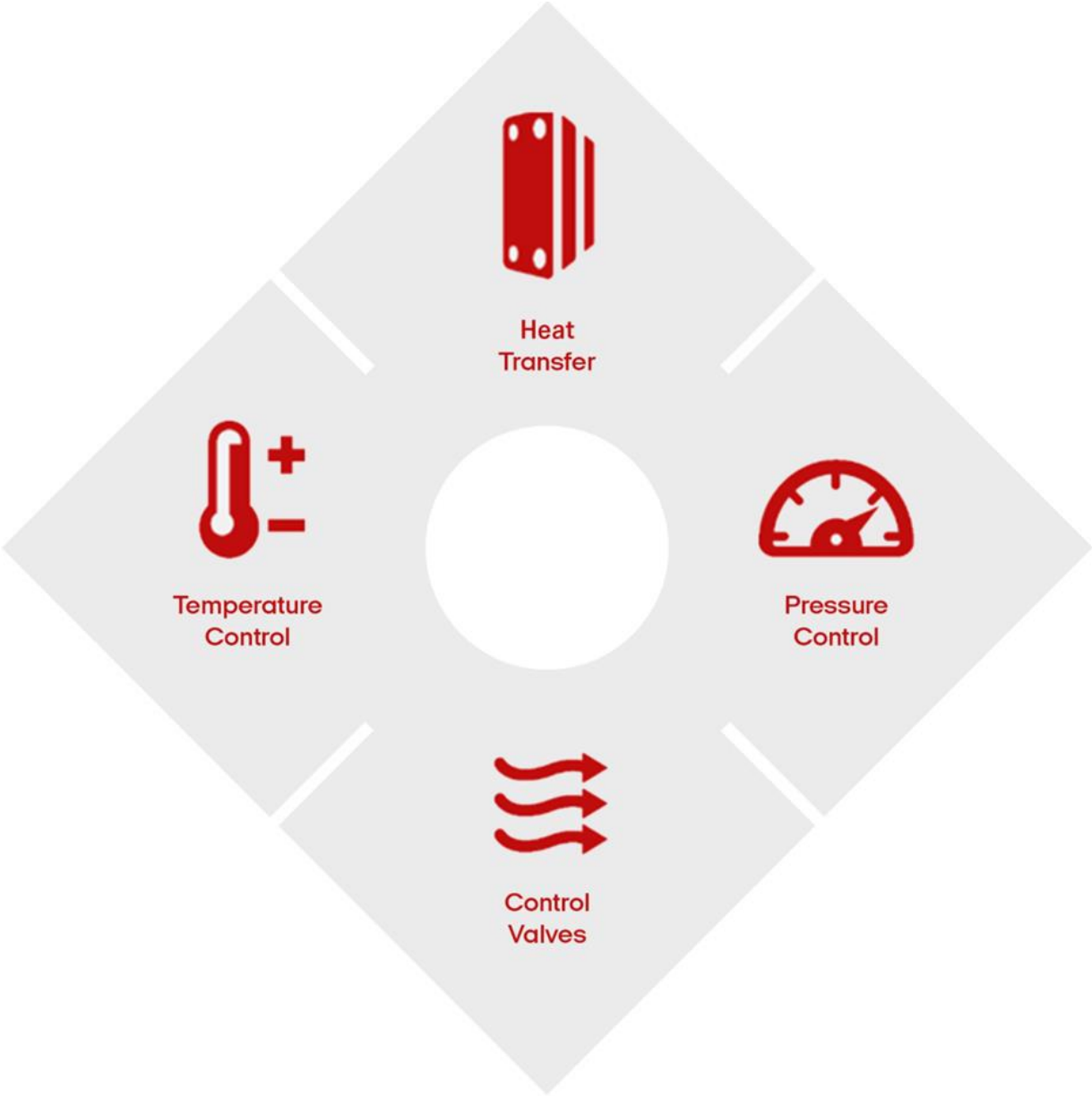
Good hydronic flow is key to building energy efficiency

Design

Installation

Commissioning

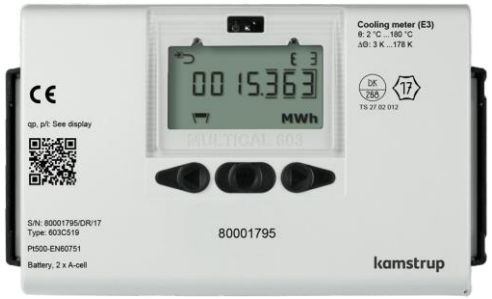
Operation

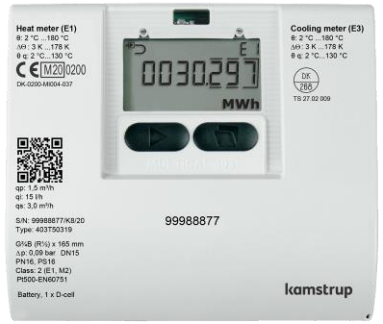


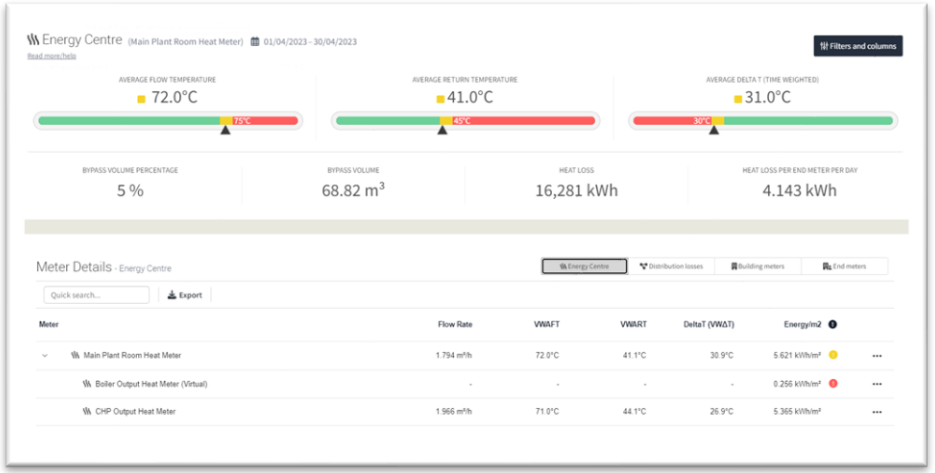
You cannot manage what you can't measure

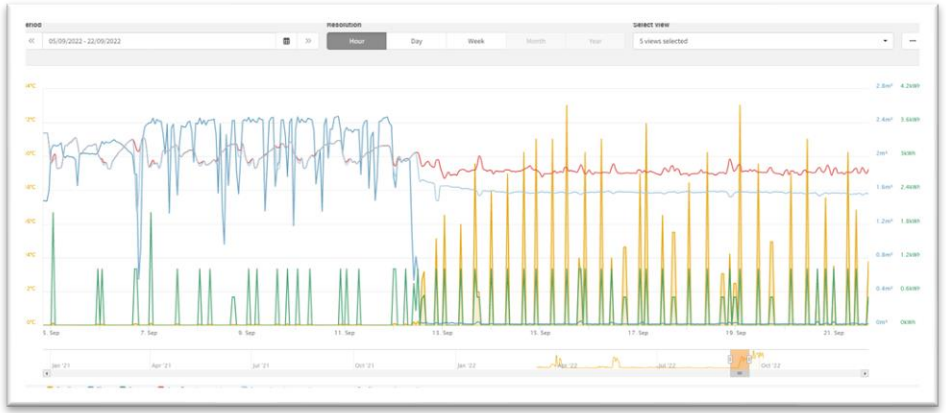
myEnergiRaven

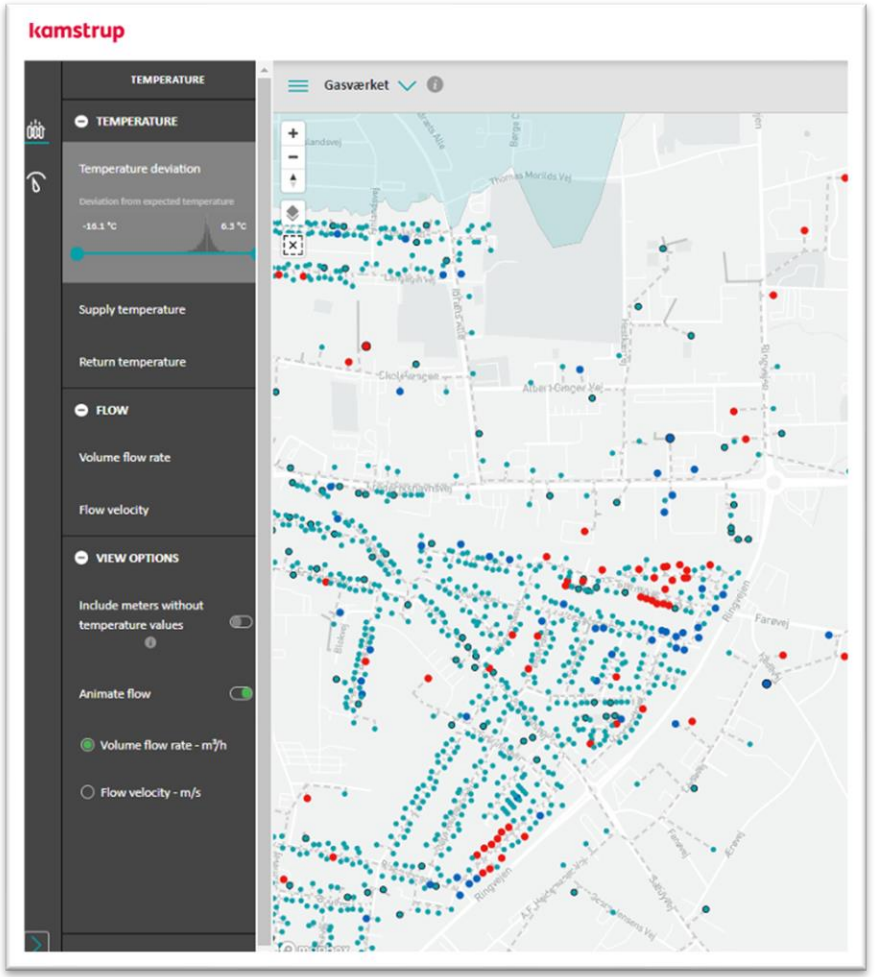
Heat intelligence











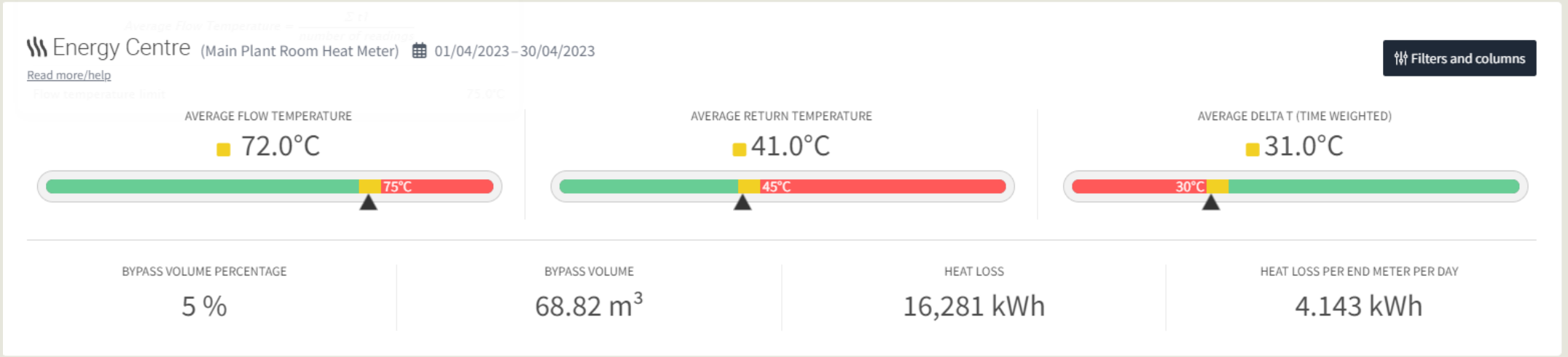
Keep it simple key metrics

Volume weighted
DeltaT 30°C +

Flow temperature
Return temperature
Heat loss
Bypass flow
Load share
Efficiency & COP

Standby consumption
Volume consumption
Average flow rate
Peak power
Peak flowrate
Minimum flowrate

Monitoring | Where to start?



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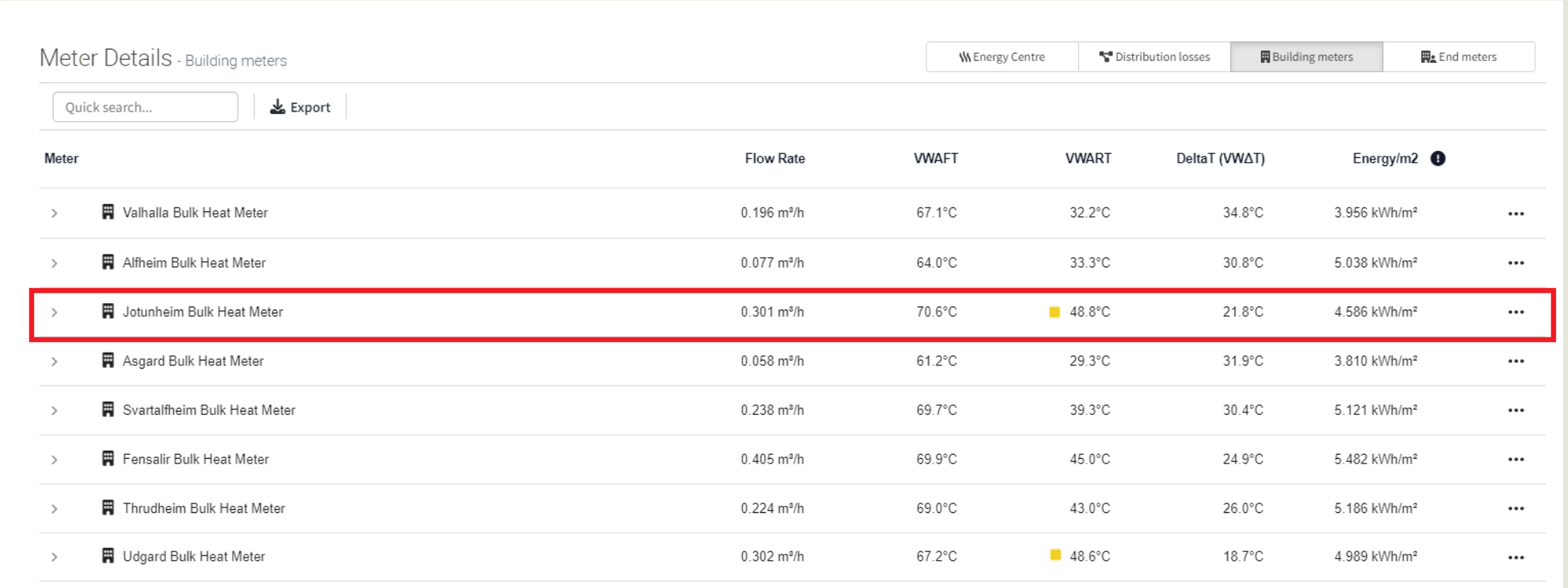
Monitoring | Locate the issue

Energy Centre

Distribution

End meters



Meter Details - Building meters

Energy Centre | Distribution losses | Building meters | End meters

Quick search... | Export

Meter	Flow Rate	VWAFT	VWART	DeltaT (VWΔT)	Energy/m2
Valhalla Bulk Heat Meter	0.196 m³/h	67.1°C	32.2°C	34.8°C	3.956 kWh/m²
Alfheim Bulk Heat Meter	0.077 m³/h	64.0°C	33.3°C	30.8°C	5.038 kWh/m²
Jotunheim Bulk Heat Meter	0.301 m³/h	70.6°C	48.8°C	21.8°C	4.586 kWh/m²
Asgard Bulk Heat Meter	0.058 m³/h	61.2°C	29.3°C	31.9°C	3.810 kWh/m²
Svartalfheim Bulk Heat Meter	0.238 m³/h	69.7°C	39.3°C	30.4°C	5.121 kWh/m²
Fensalir Bulk Heat Meter	0.405 m³/h	69.9°C	45.0°C	24.9°C	5.482 kWh/m²
Thrudheim Bulk Heat Meter	0.224 m³/h	69.0°C	43.0°C	26.0°C	5.186 kWh/m²
Udgard Bulk Heat Meter	0.302 m³/h	67.2°C	48.6°C	18.7°C	4.989 kWh/m²

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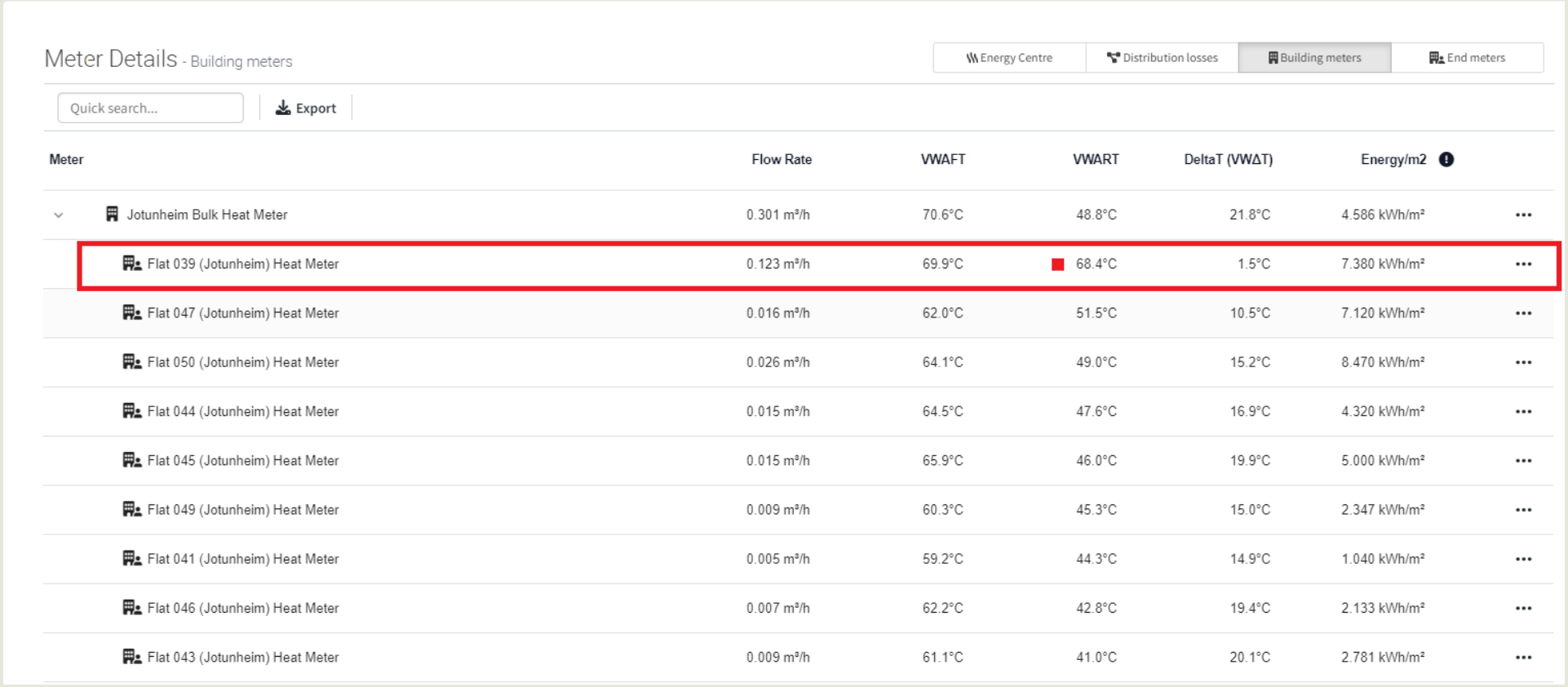
Monitoring | Locate the issue

Energy Centre

Distribution

End meters



Meter Details - Building meters

Energy Centre | Distribution losses | Building meters | End meters

Quick search... | Export

Meter	Flow Rate	VWAFT	VWART	DeltaT (VWΔT)	Energy/m2
Jotunheim Bulk Heat Meter	0.301 m³/h	70.6°C	48.8°C	21.8°C	4.586 kWh/m²
Flat 039 (Jotunheim) Heat Meter	0.123 m³/h	69.9°C	68.4°C	1.5°C	7.380 kWh/m²
Flat 047 (Jotunheim) Heat Meter	0.016 m³/h	62.0°C	51.5°C	10.5°C	7.120 kWh/m²
Flat 050 (Jotunheim) Heat Meter	0.026 m³/h	64.1°C	49.0°C	15.2°C	8.470 kWh/m²
Flat 044 (Jotunheim) Heat Meter	0.015 m³/h	64.5°C	47.6°C	16.9°C	4.320 kWh/m²
Flat 045 (Jotunheim) Heat Meter	0.015 m³/h	65.9°C	46.0°C	19.9°C	5.000 kWh/m²
Flat 049 (Jotunheim) Heat Meter	0.009 m³/h	60.3°C	45.3°C	15.0°C	2.347 kWh/m²
Flat 041 (Jotunheim) Heat Meter	0.005 m³/h	59.2°C	44.3°C	14.9°C	1.040 kWh/m²
Flat 046 (Jotunheim) Heat Meter	0.007 m³/h	62.2°C	42.8°C	19.4°C	2.133 kWh/m²
Flat 043 (Jotunheim) Heat Meter	0.009 m³/h	61.1°C	41.0°C	20.1°C	2.781 kWh/m²

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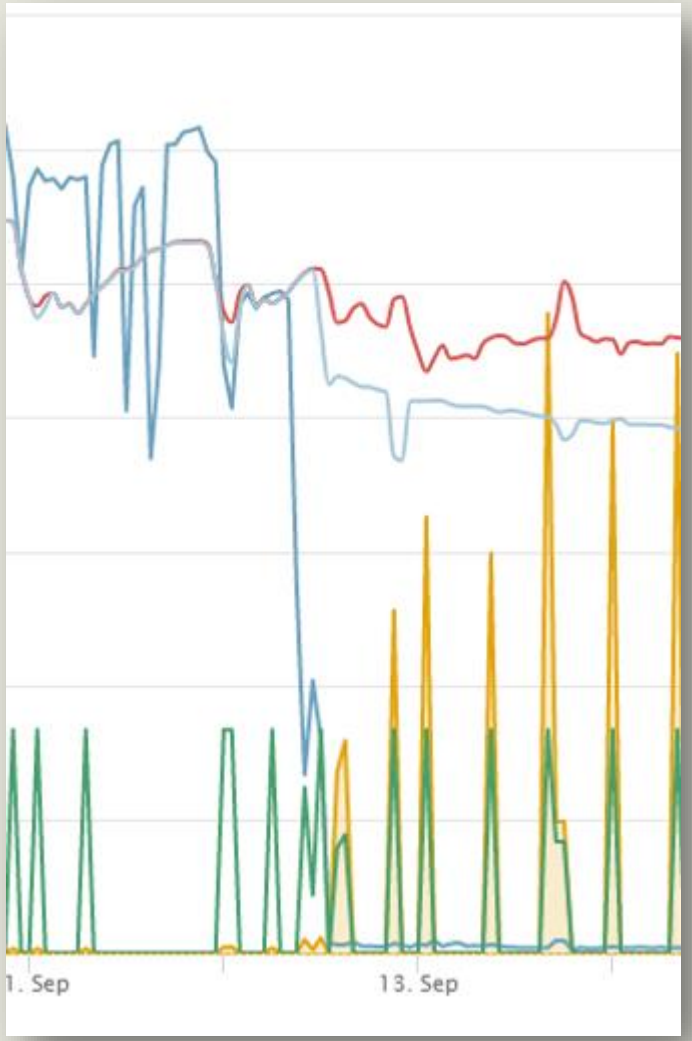
Monitoring | Fix the issue



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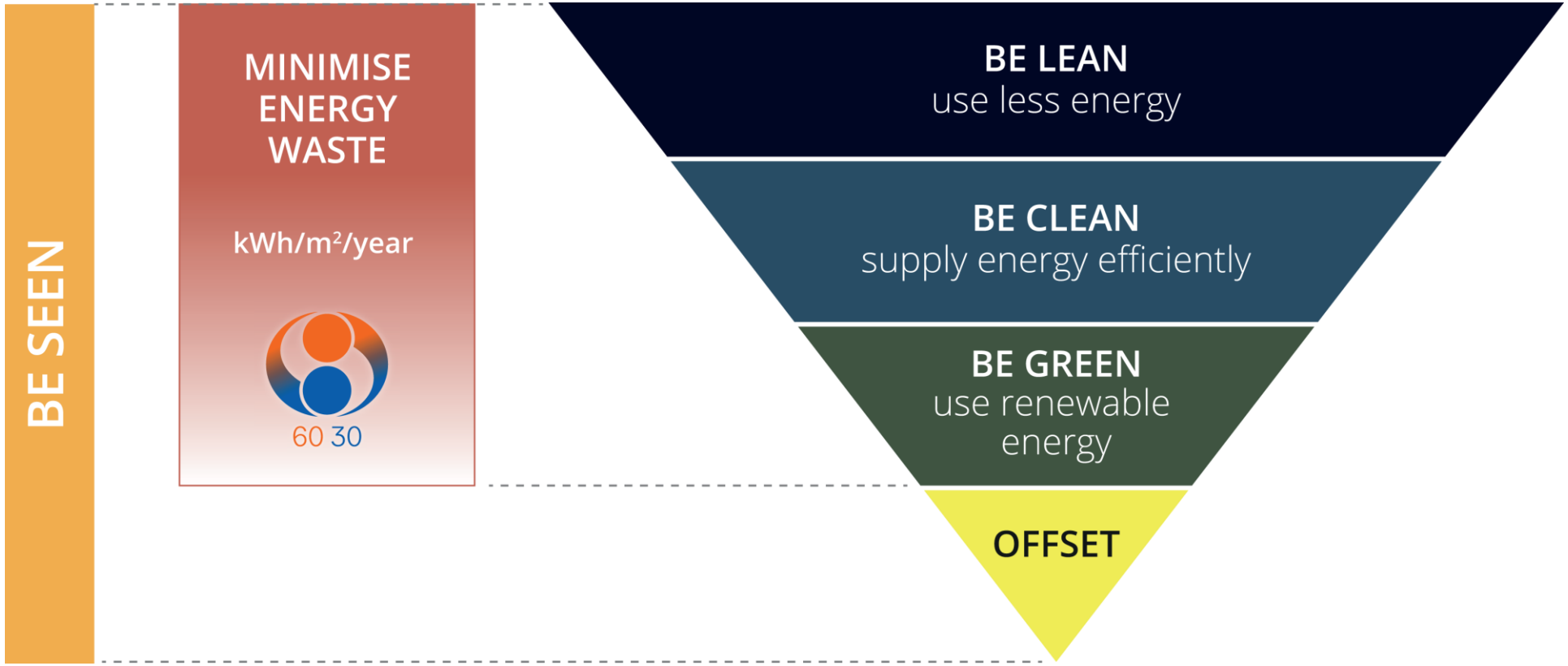
Heat networks start with energy efficient buildings

NB The greenest and cheapest energy is the energy that you don't use



SAV Trusted Technology Partner