HEATWEB
INTEGRATED THERMAL TECHNOLOGY

Heat Network Quality Assurance

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Heat Network Quality Assurance

Why do we need QA?


NO
FISHING

Heat Network Quality Assurance

Is it possible to create effective quality assurance measures [for heat networks] without introducing the need for a 100% external inspections,

and the training of a workforce to perform those inspections?

What do we know that works ?

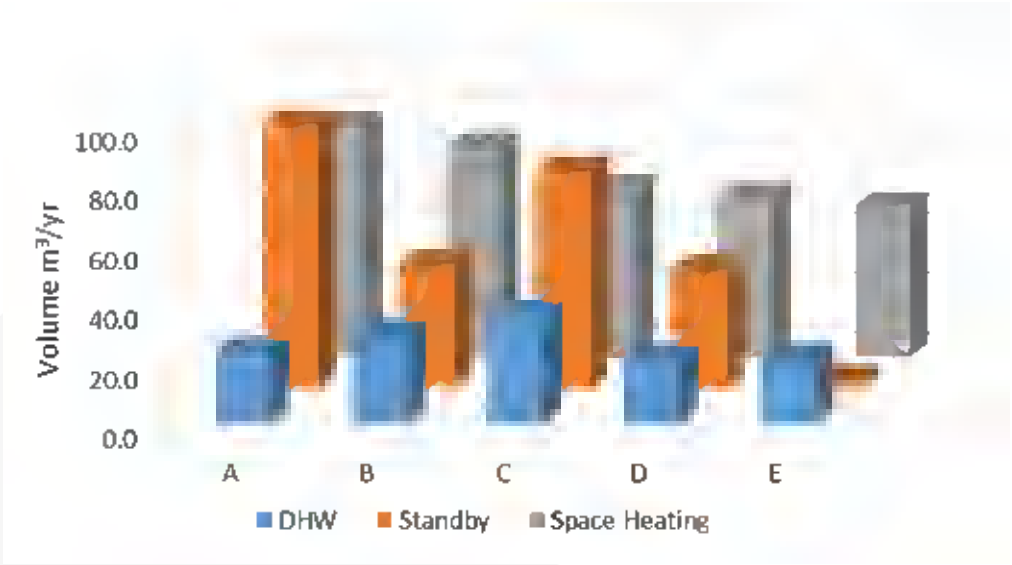
A single KPI, when on public display, motivates all stakeholders to improve quality themselves.

The BESA HIU Test Regime

"The [BESA] testing clearly shows performance differences between substations. The simplicity of the VWART as a benchmark of substation performance is having an impact – with manufacturers starting to publicise the VWART figure for their substations. Most of the manufacturers have made or brought forward planned substation improvements as a result of the testing."

Martin Crane, Carbon Alternatives

Substation E: The DATA HIU



	VWART with keep warm inactive *	
Period	VWART (°C)	% Time
No heating	13.9	93%
Heating	39.4	7%
Overall	15.8	

* HIU has ability to deactivate keep warm function

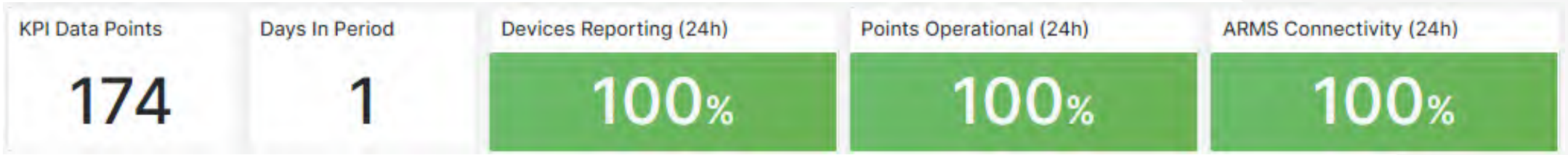
VWART calculation prepared by Freddie Valletta of FairHeat Ltd on 26 July 2017

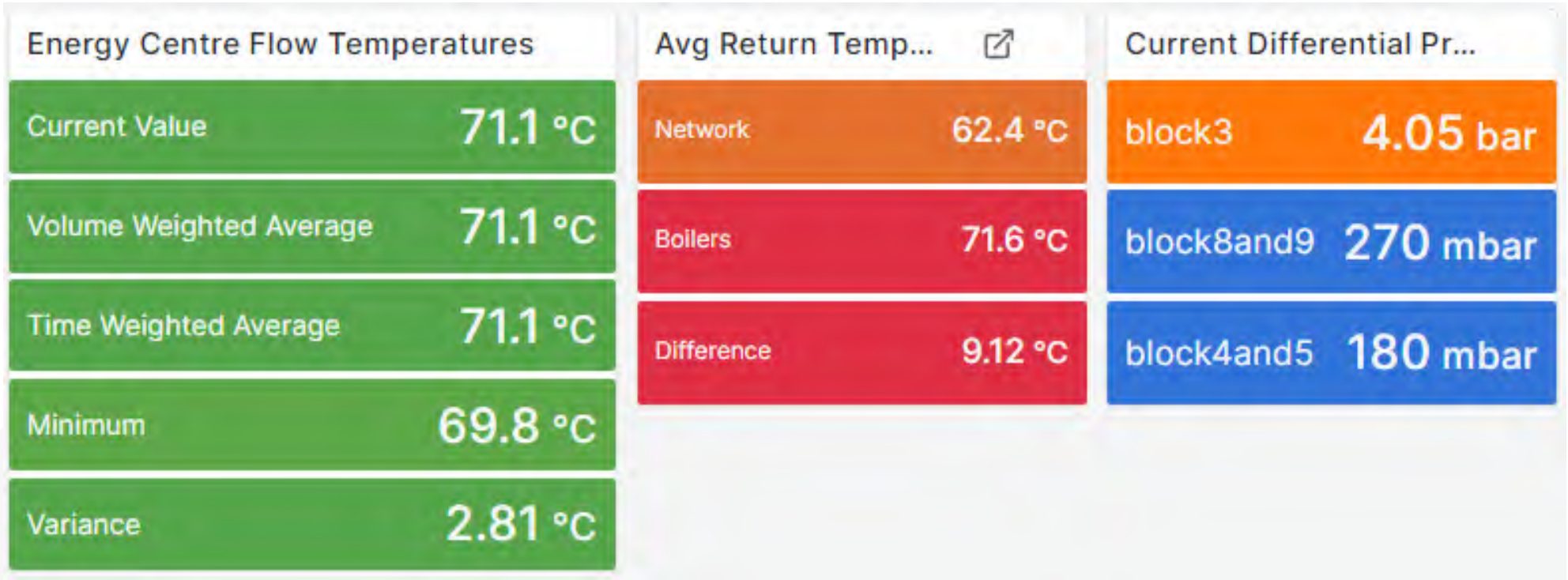
Heat Network Quality Assurance

How do we shine a light on poor efficiency in real-world heat networks ?

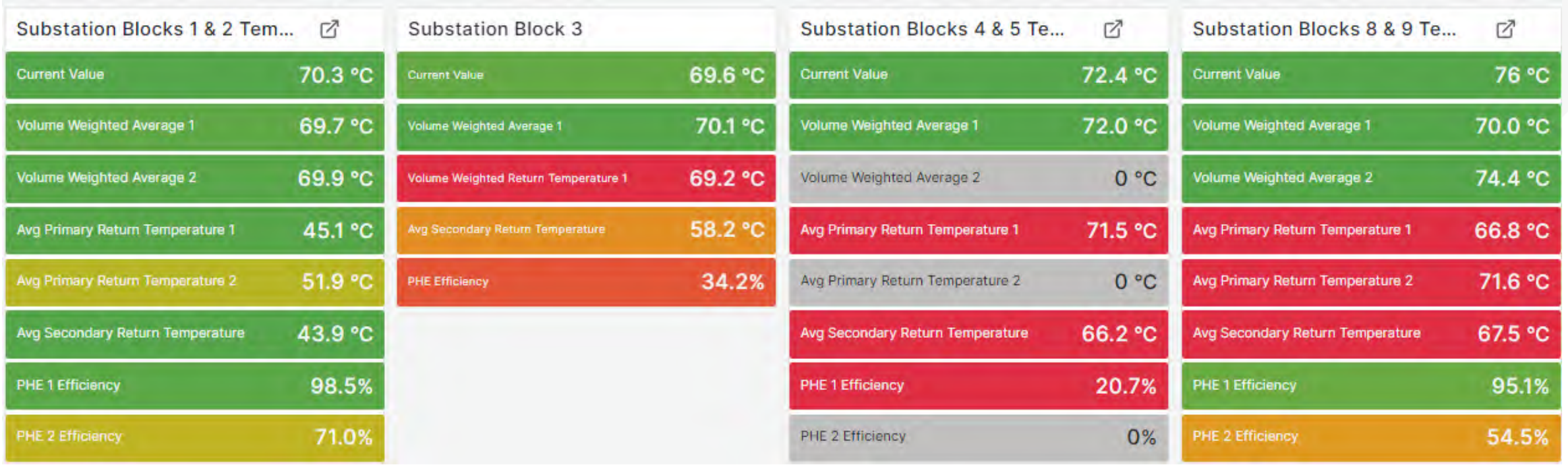

Q1: Do the lights work?

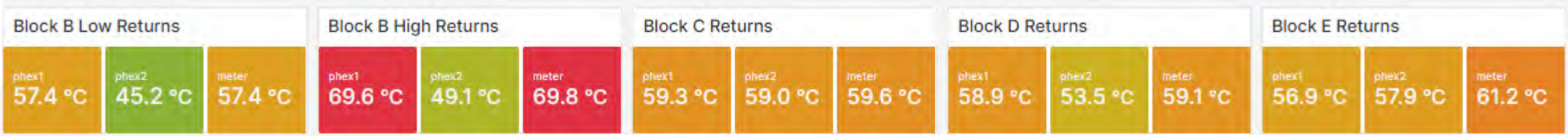
Service KPIs (from HNTAS)





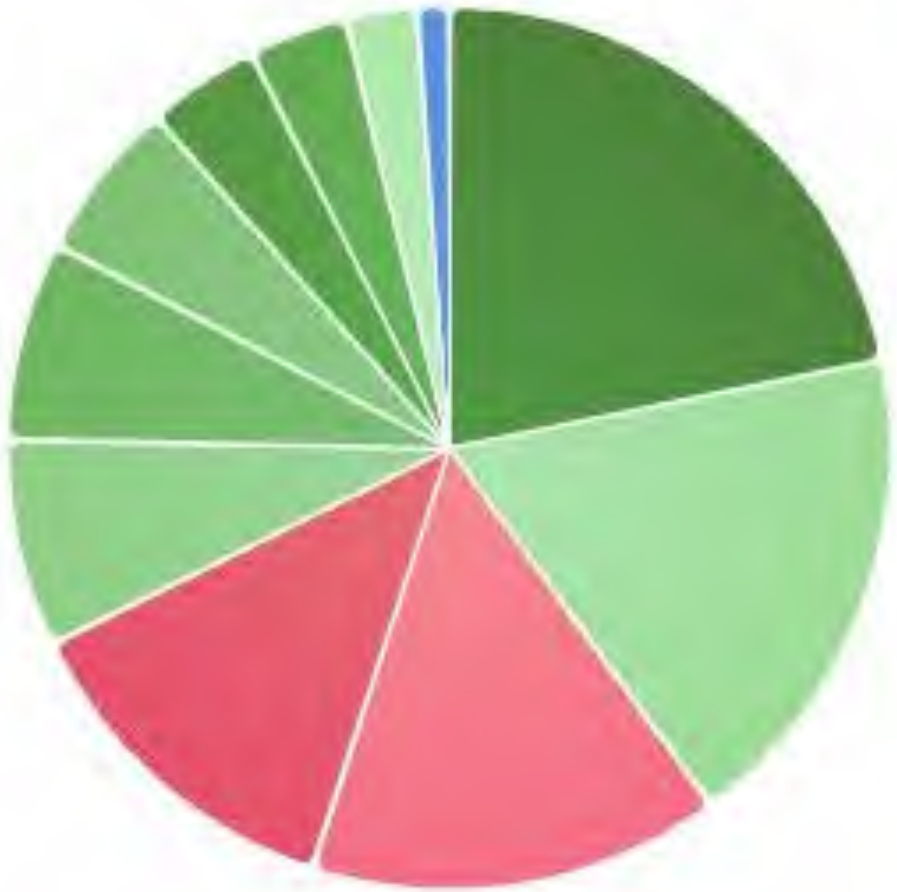
Substation KPIs





Energy & Bypass KPIs

Primary Network Loss...	Primary Bypass Volume	Energy Delivered
2.1 MWh	87.2 m^3	11.6 MWh
15.2%	11.9%	EC Electrical Energy
		182 kWh

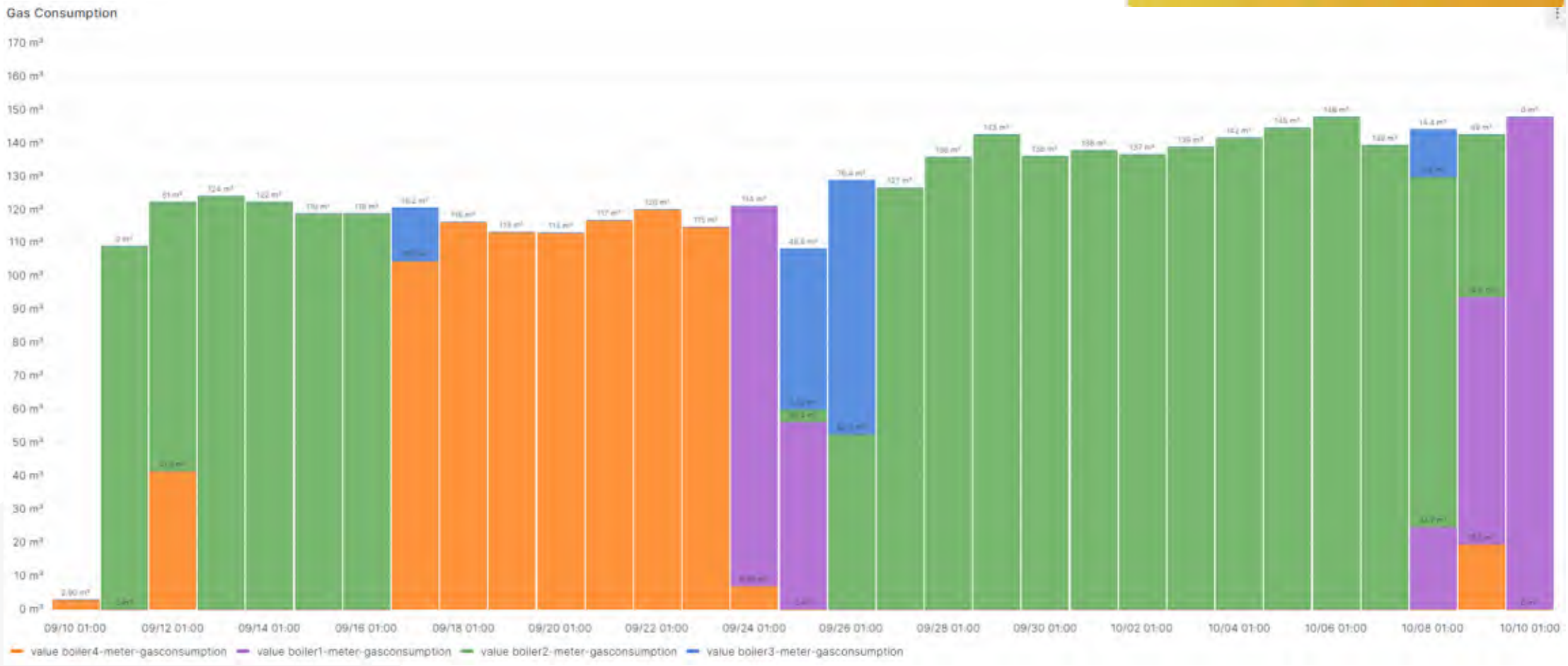


- blockd 22%
- blockc 18%
- Plantroom Losses 15%
- Primary Distribution Losses 13%
- blockblow 8%
- blockalow 7%
- blockahigh 6%
- blockbhigh 4%
- blockahotel 4%
- blocke 3%

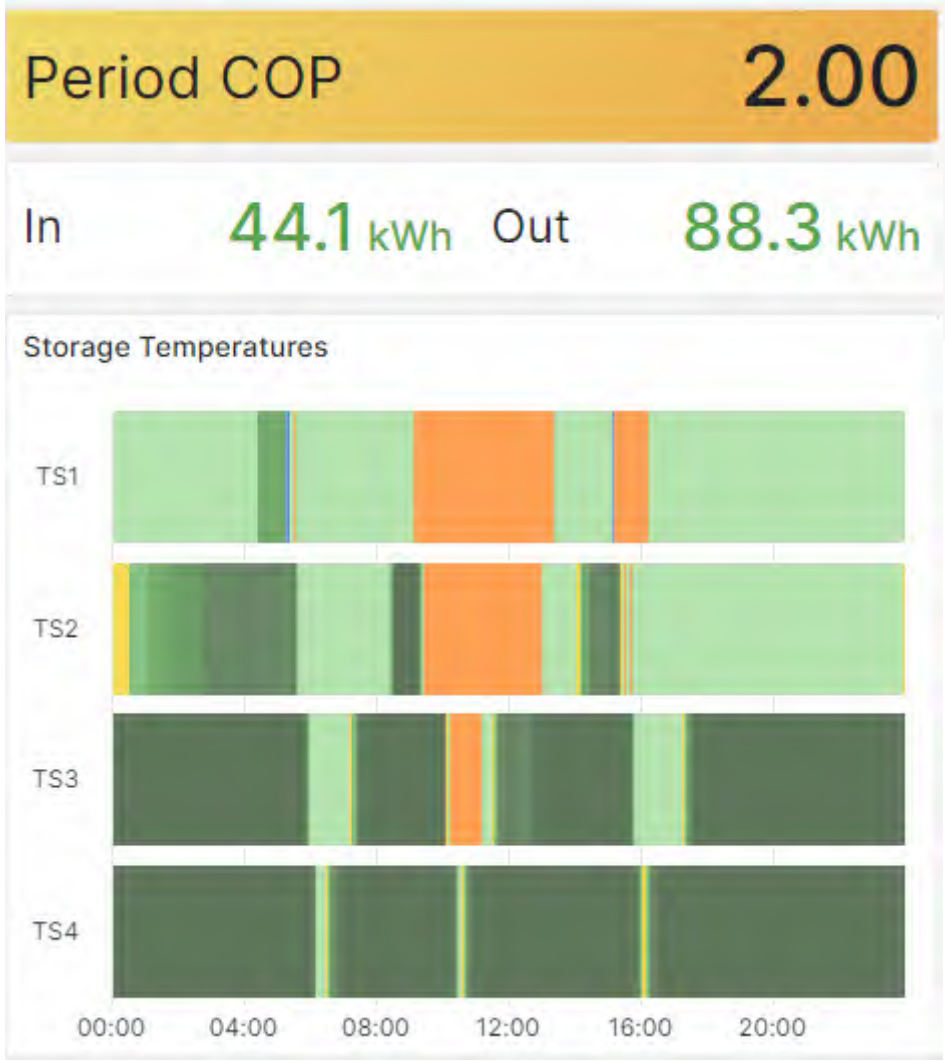
Gas Boiler KPIs

Fuel Conversion Losses

15.3%



Heat Pump KPIs



Buffer & Thermal Store KPIs