

Optimizing a Solar Rooftop System

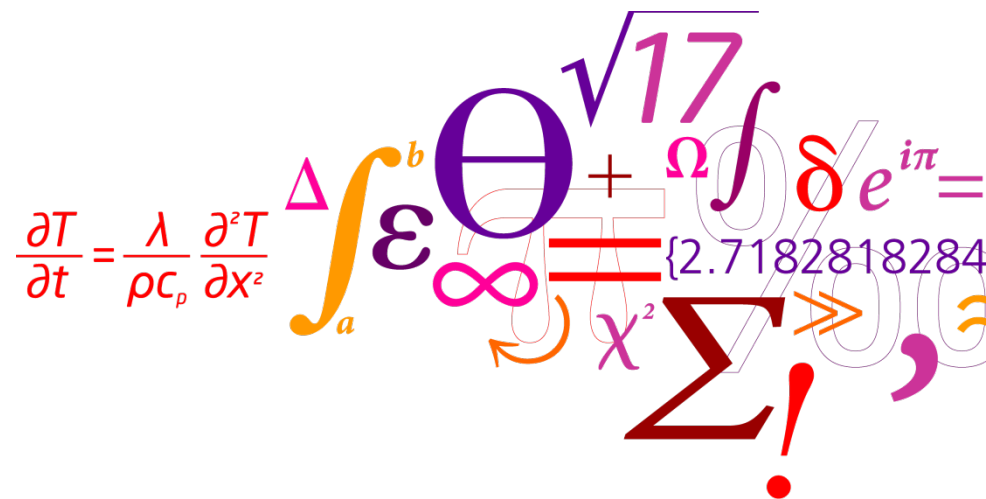
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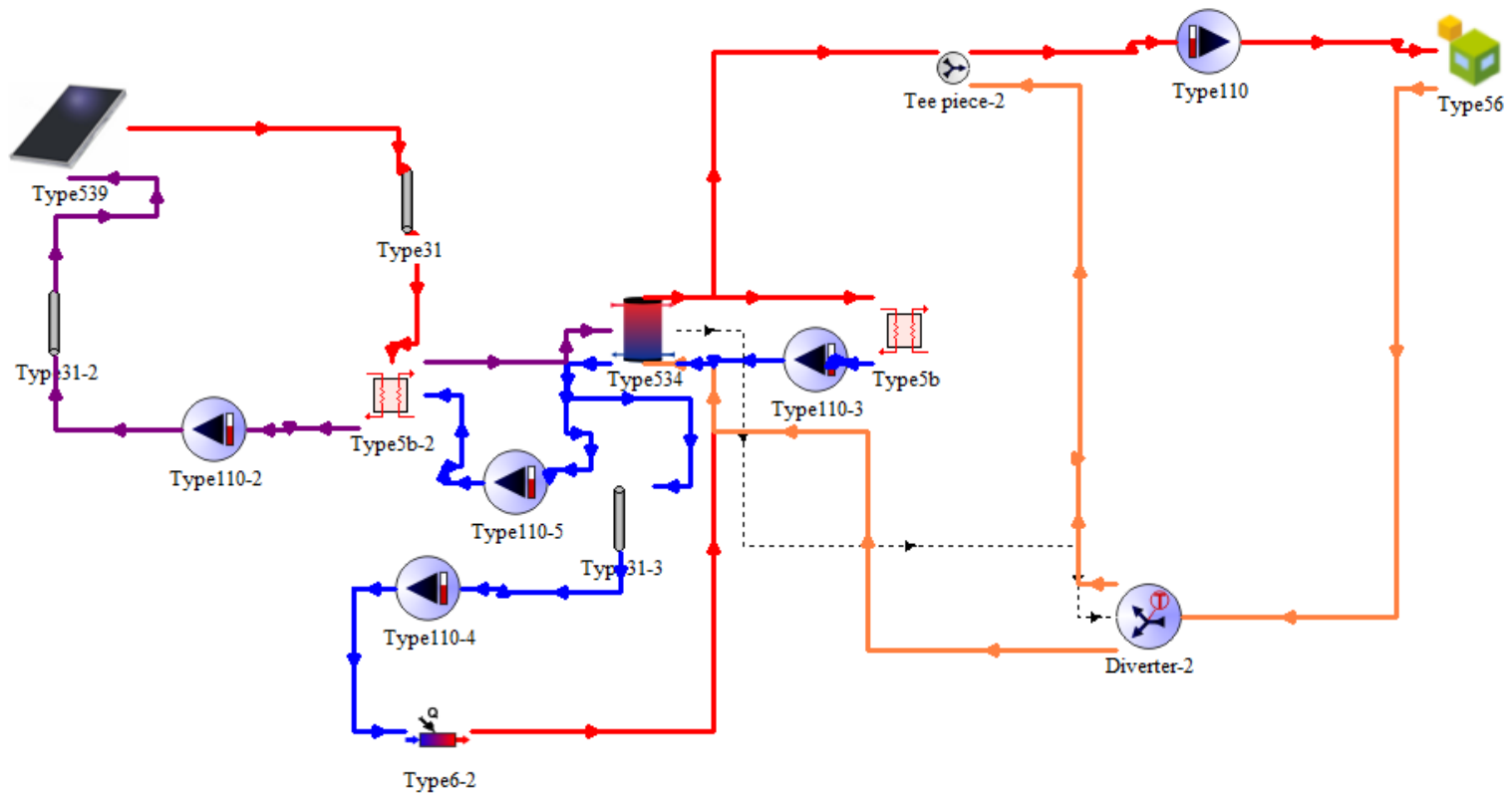
Objective

- Parametric runs with different sizes
- Sensitivity analysis of the influence of different pricing models on feasibility of STC and/or PV on rooftop
- Optimize use of the rooftop area
- Later - control

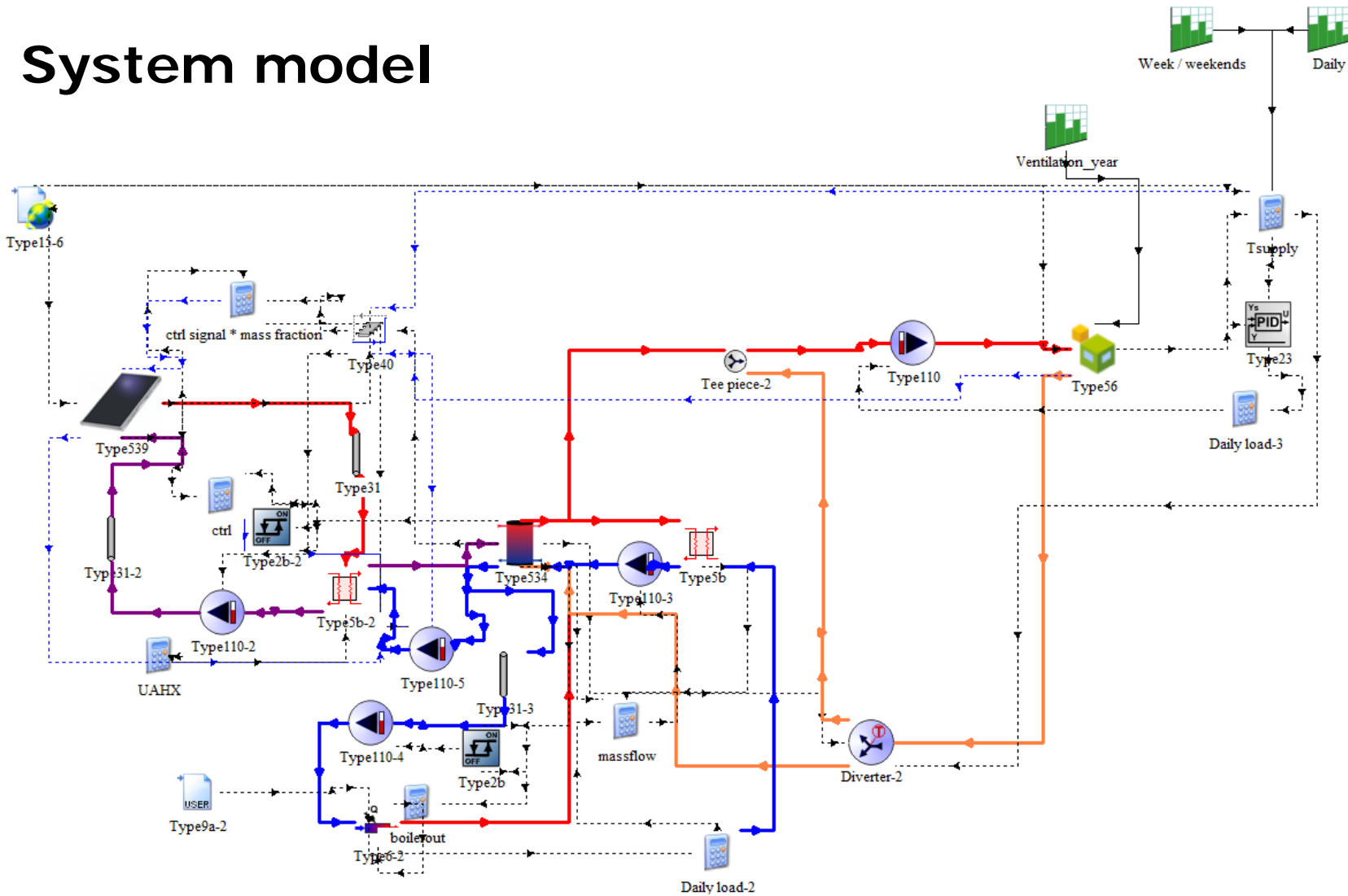
System model

- Reference system – IEA task 32
- Most Trnsys components from the reference system obsolete
- Updated with collector parameters from NREL report on flat plate solar thermal collectors from 2016

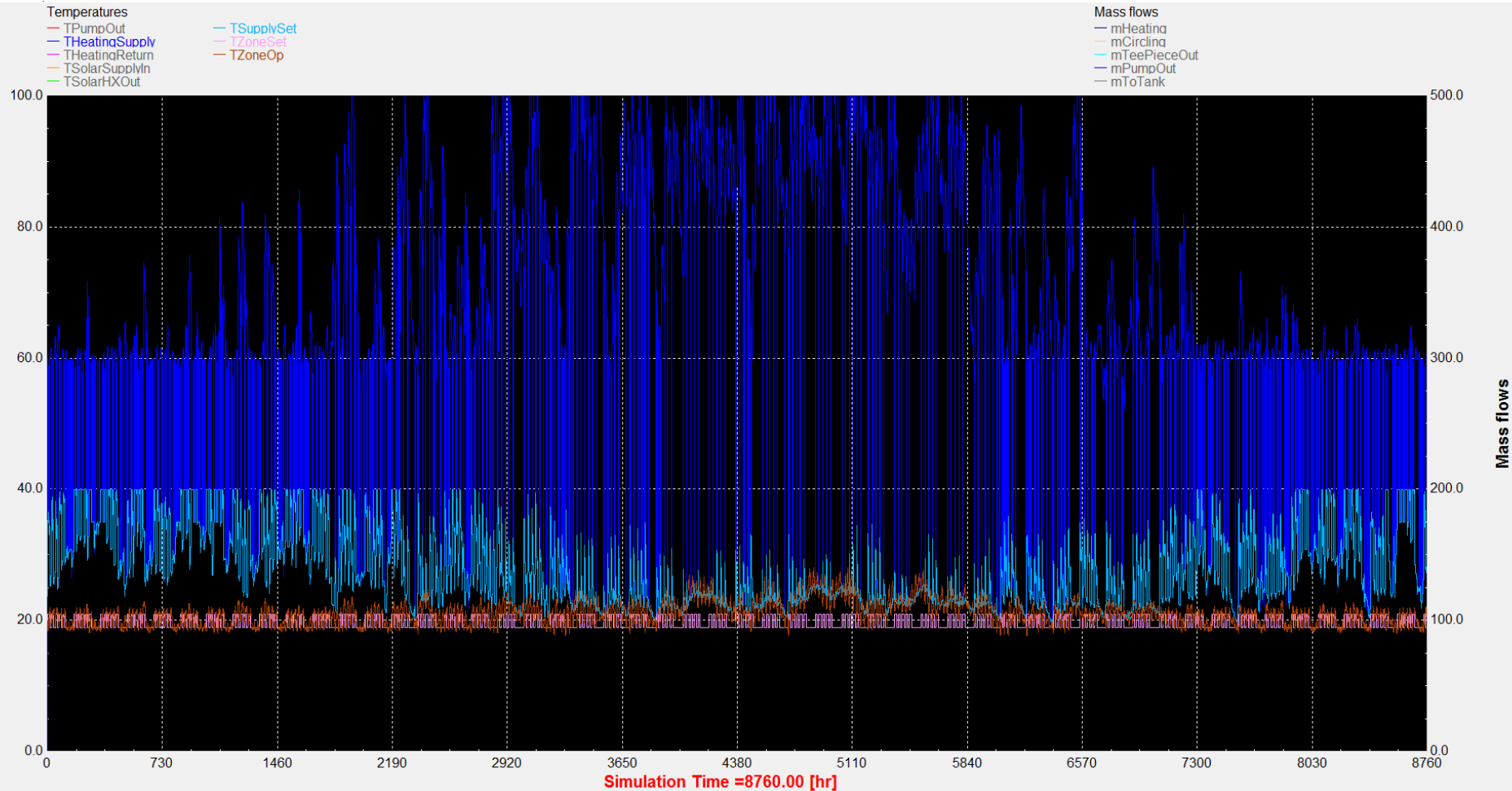
System model



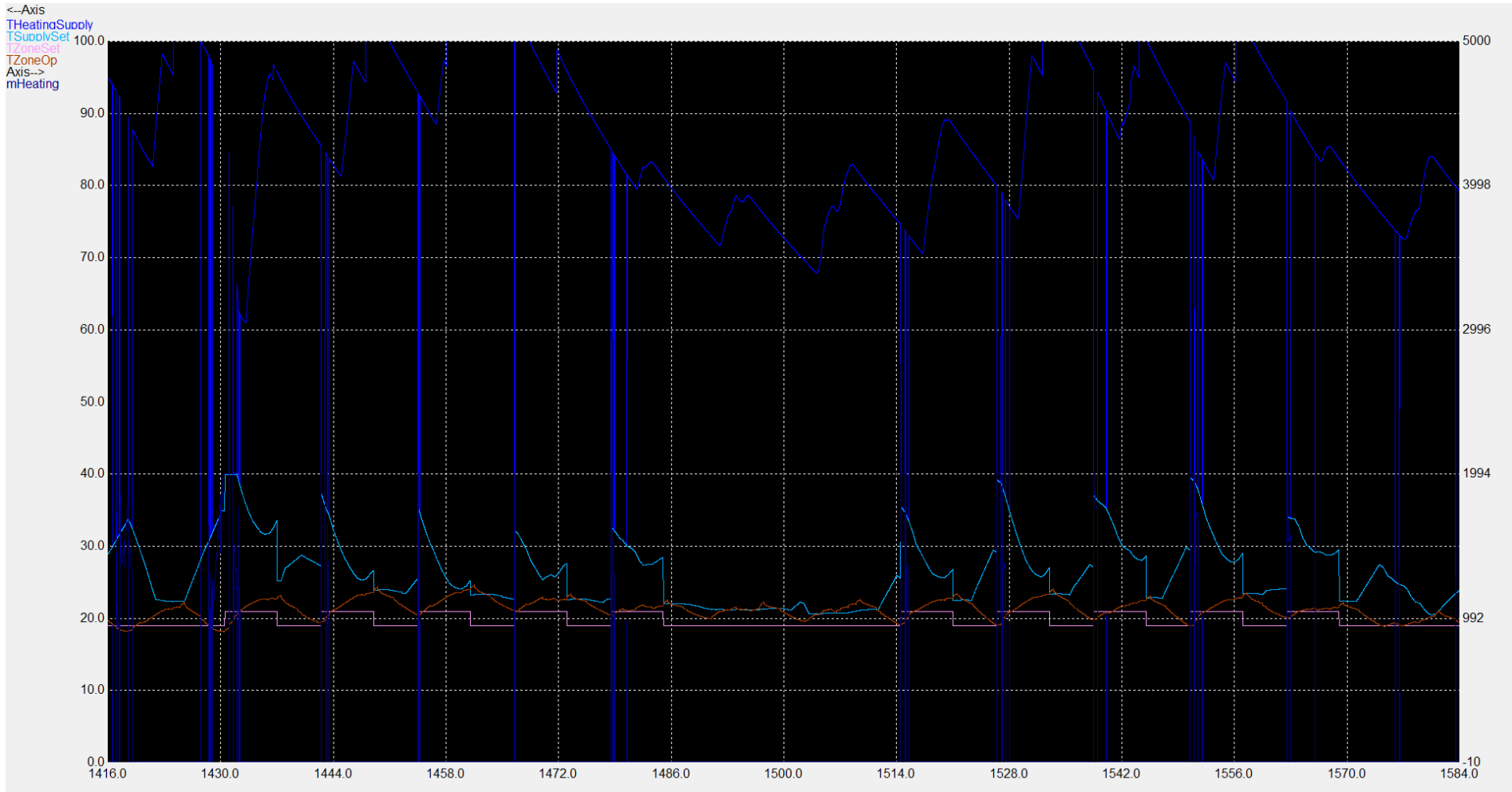
System model



Yearly Heating Simulation

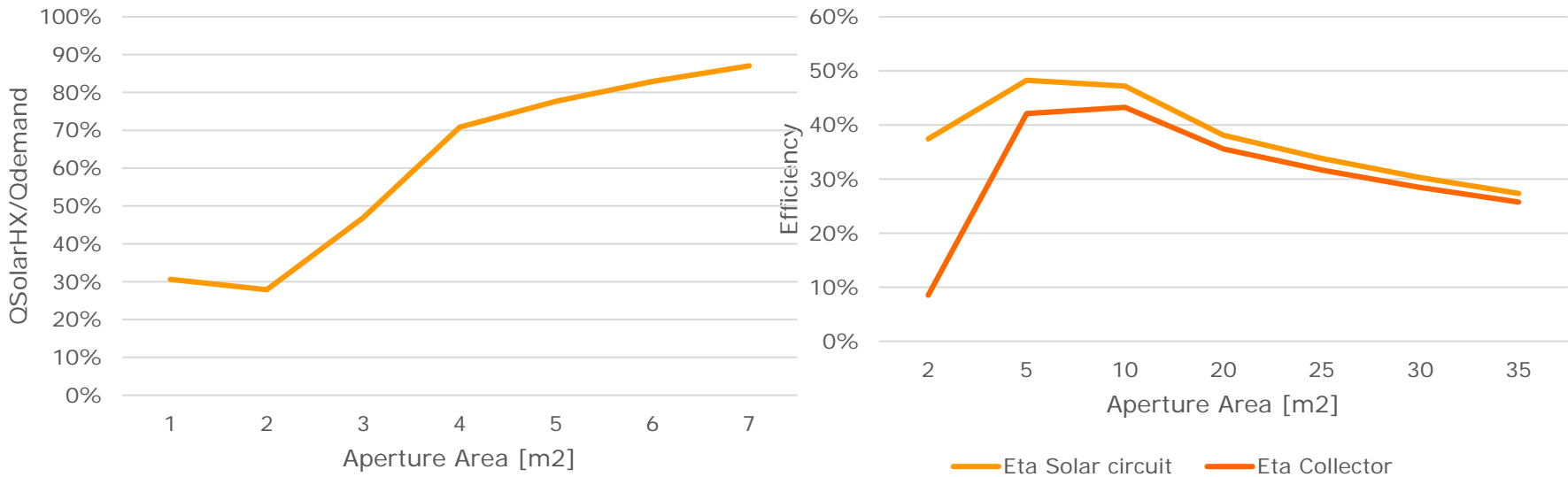


One Week in March



Preliminary results – parametric runs

- Varying collector size



Other investigations

- Control method with hysteresis for on/off signal to pump, running with maximum massflow – higher system and collector efficiency than keeping collector output temperature + hysteresis

THANK YOU!