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Innovation Learning Event

Wednesday 5 July 2017

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electricity
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Celsius

Damien Coyle

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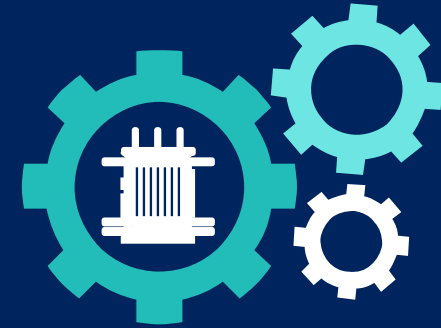


Celsius

Brief introduction
to Celsius



Project aims



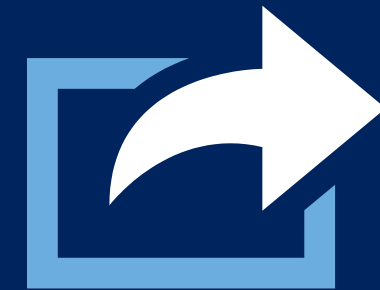
Thermal monitoring



Data monitoring



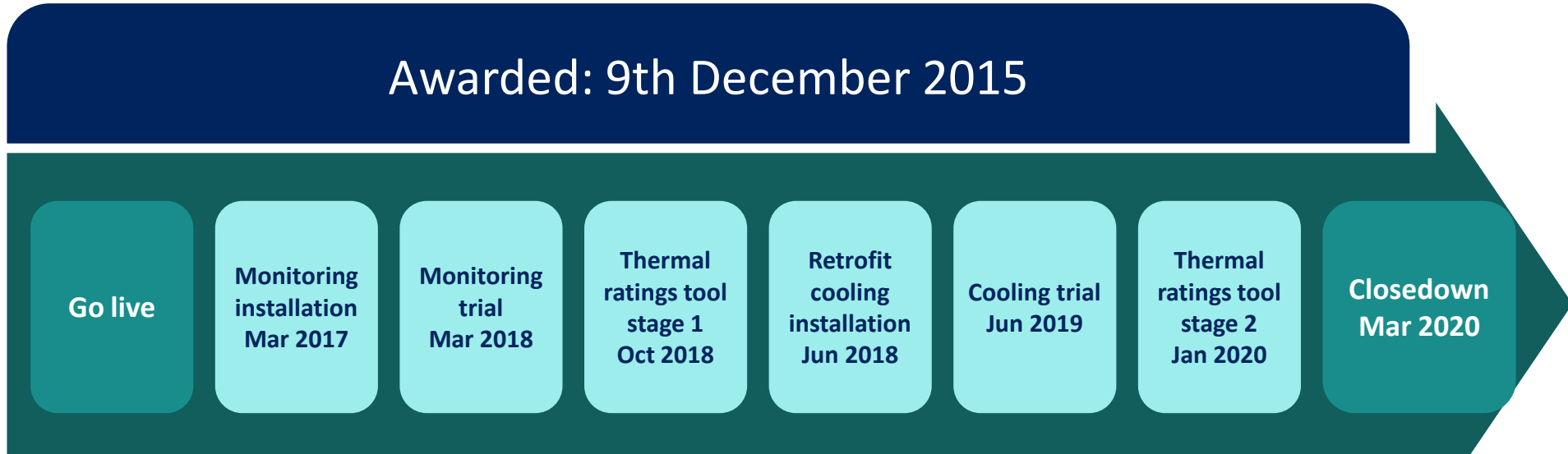
Customer



Next steps

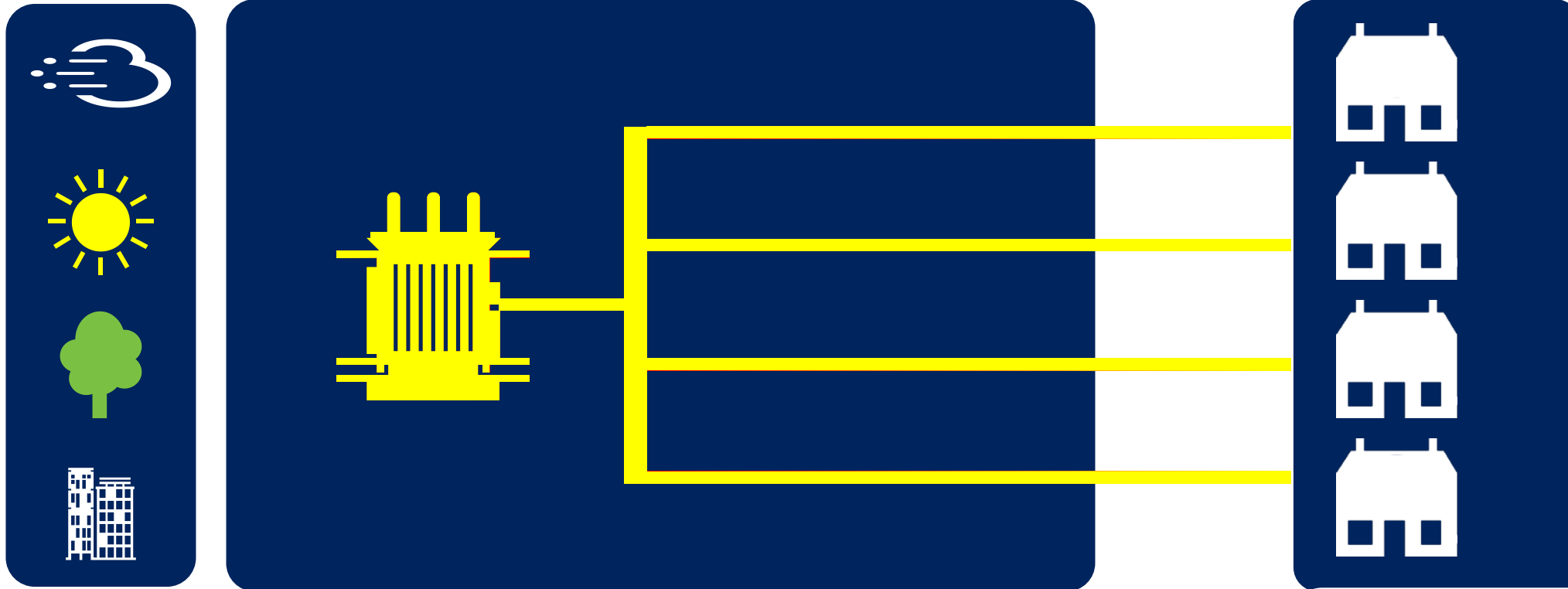


Awarded: 9th December 2015



 <p>Investment</p>	<p>£5.5 million</p>	<p>Up to £583m across GB by 2050</p>	 <p>Financial benefits</p>
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The problem



Distribution
substation

Customers'
LCTs

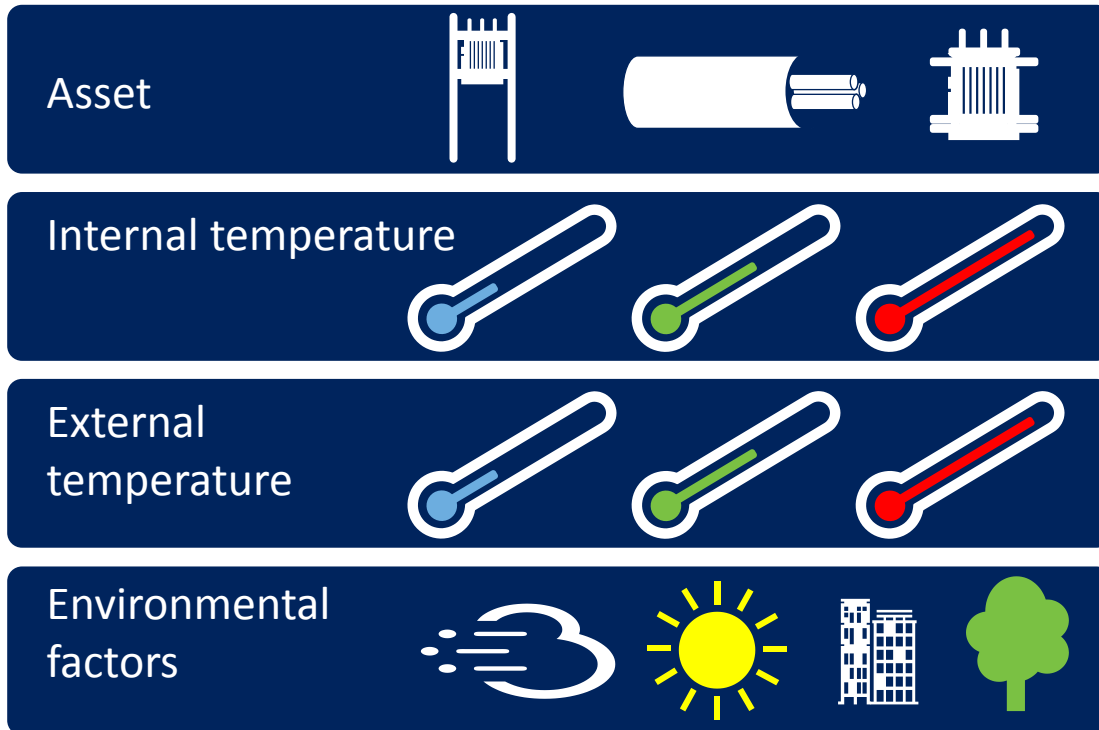
Step 1: Fit thermal monitoring



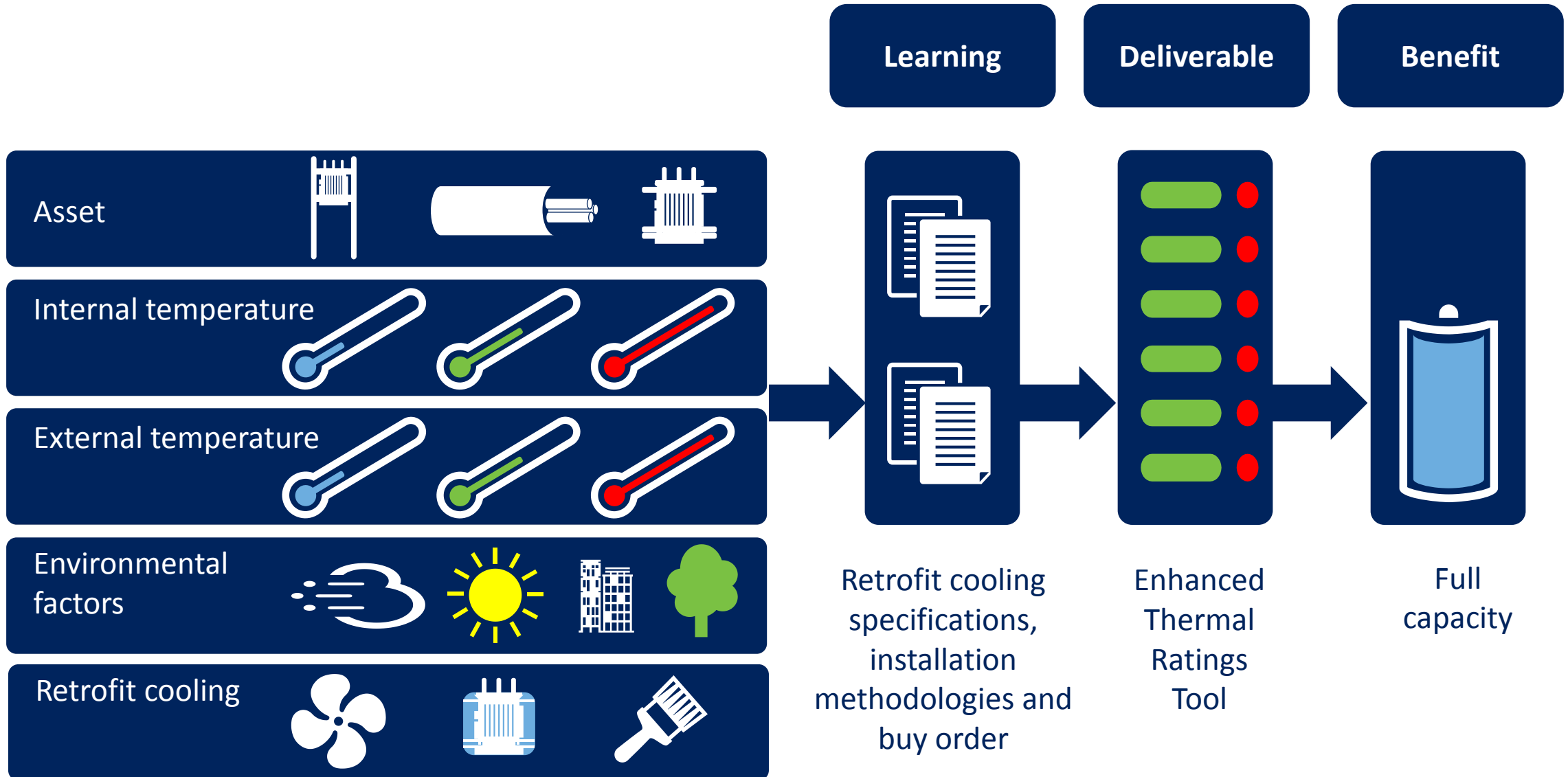
Learning

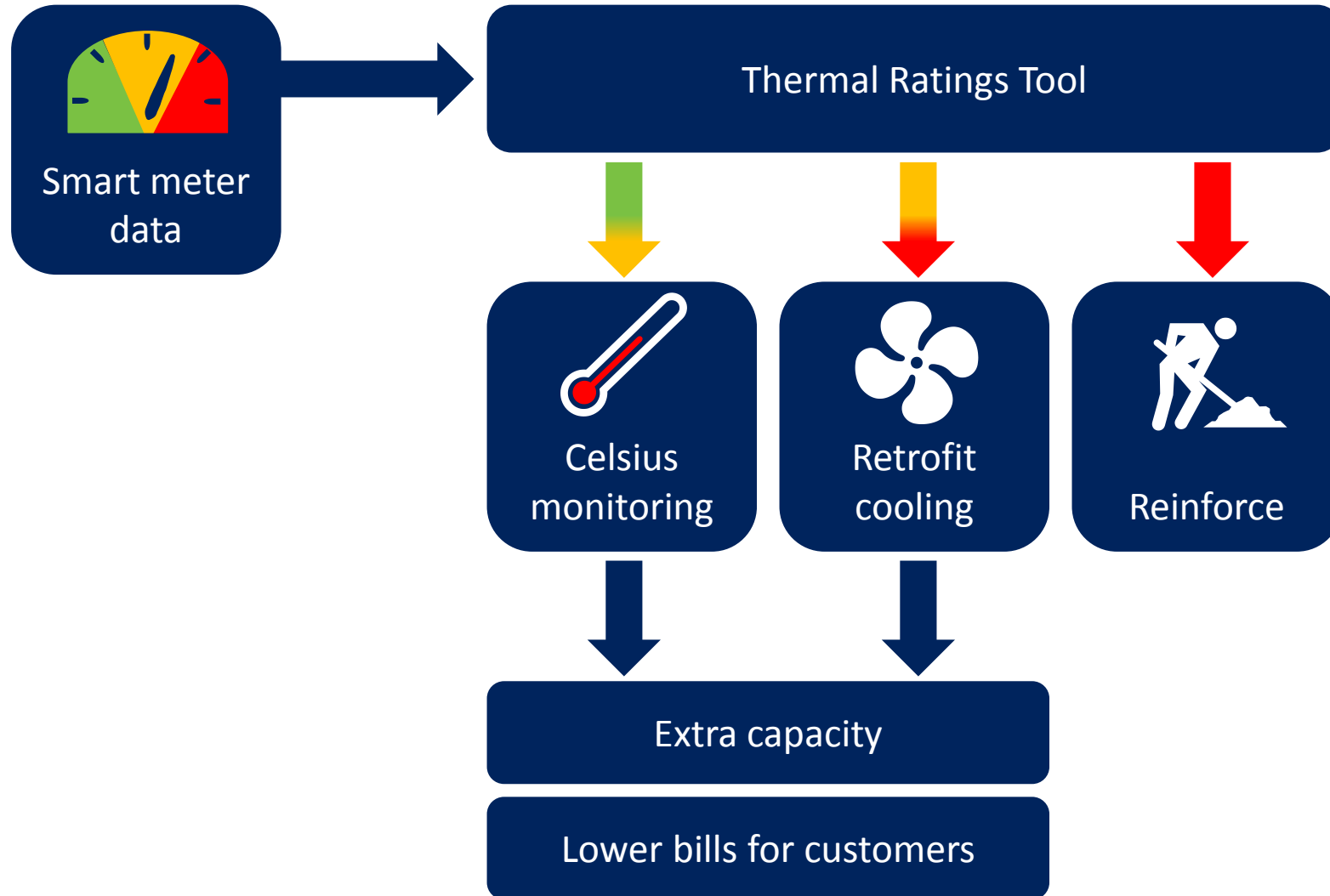
Deliverable

Benefit



Step 2: Retrofit cooling







Thermal analysis (step 1)



Internal asset
temperature

=

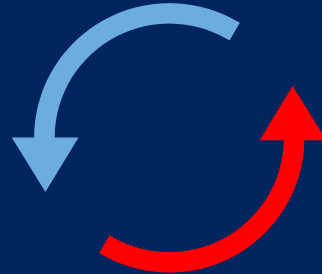
Thermal
coefficient

×



External asset
temperature

Thermal flow study (steps 1 & 2)



Research into heat and air flows for
optimal substation design

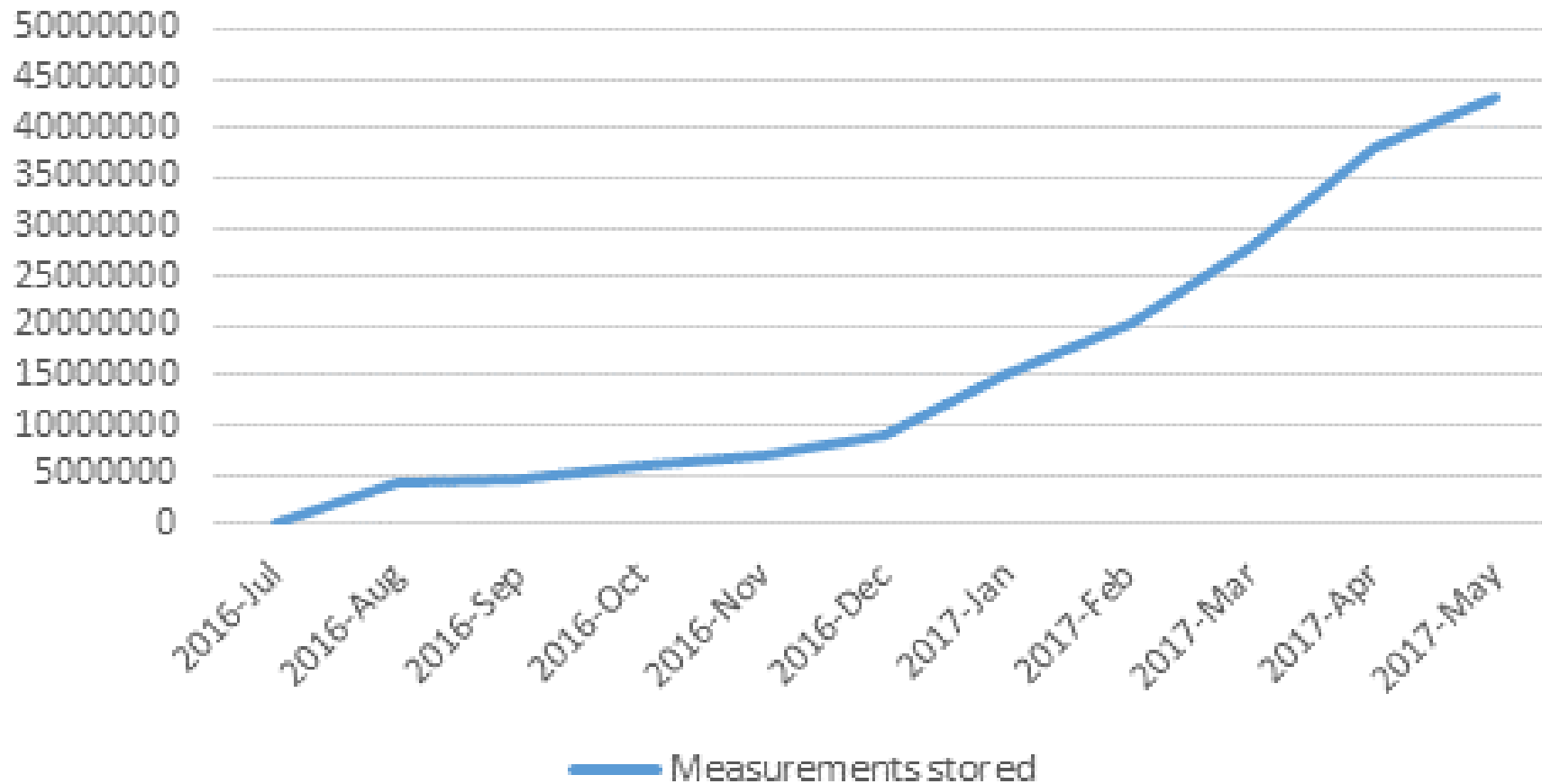
Asset health study (steps 1 & 2)



Examines effects of increased load
and cooling techniques on assets



Measurements stored



Latest metrics

289,477 inbound requests handled

43,292,611 measurements stored

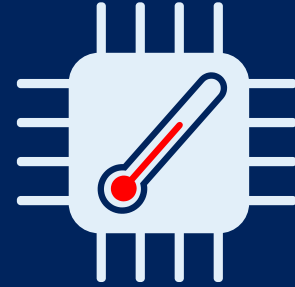
72,081 lines of code



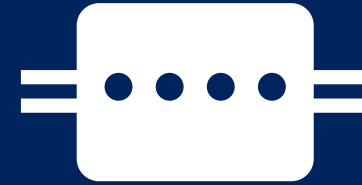
Data gaps through GPRS connection



Data gaps caused by backend algorithm and timestamp handling



Firmware upgrade to the KTSO1 wireless temperature sensor



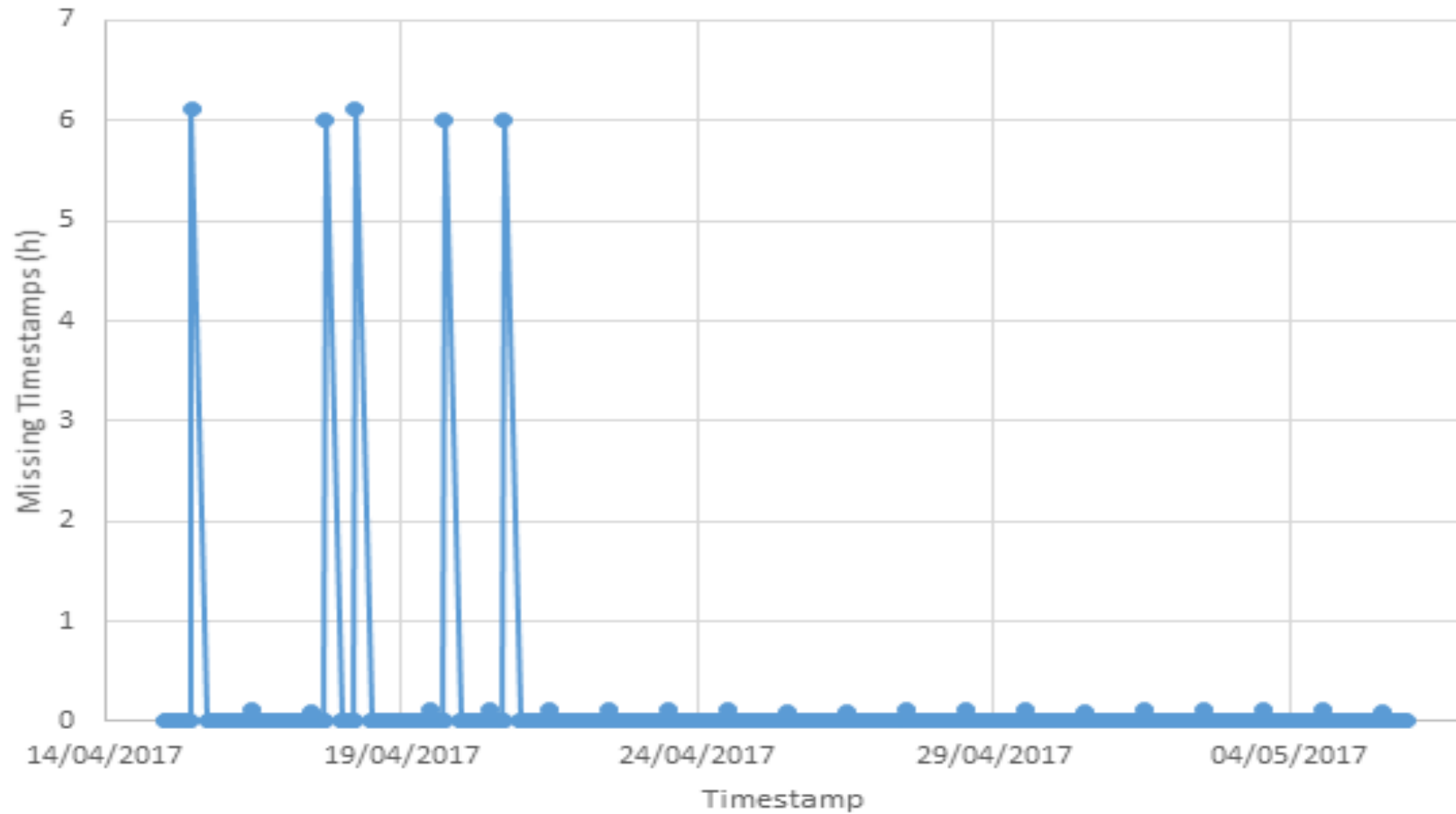
Firmware upgrade to HEX



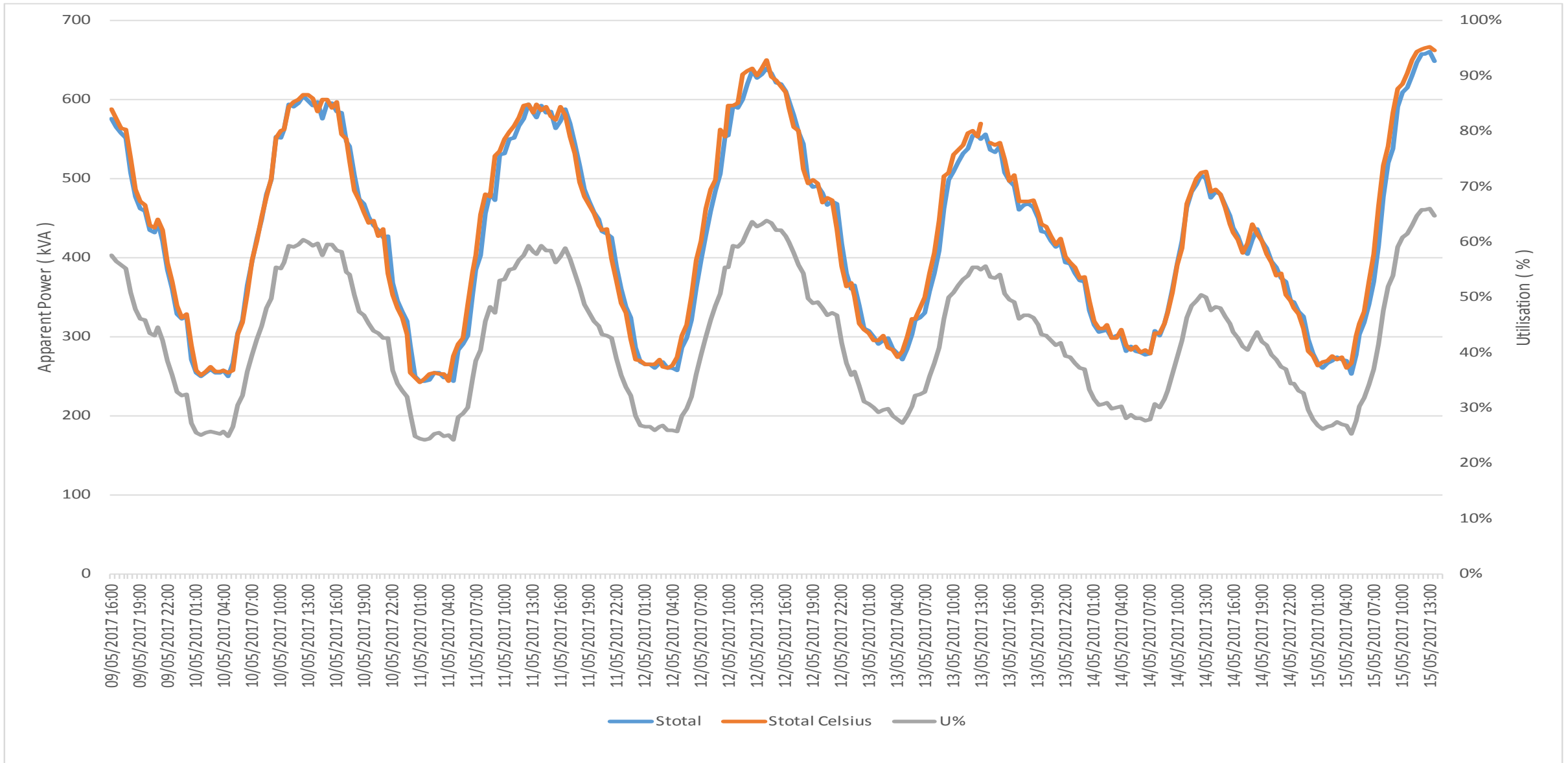
Firmware upgrade to HUB (OTA)



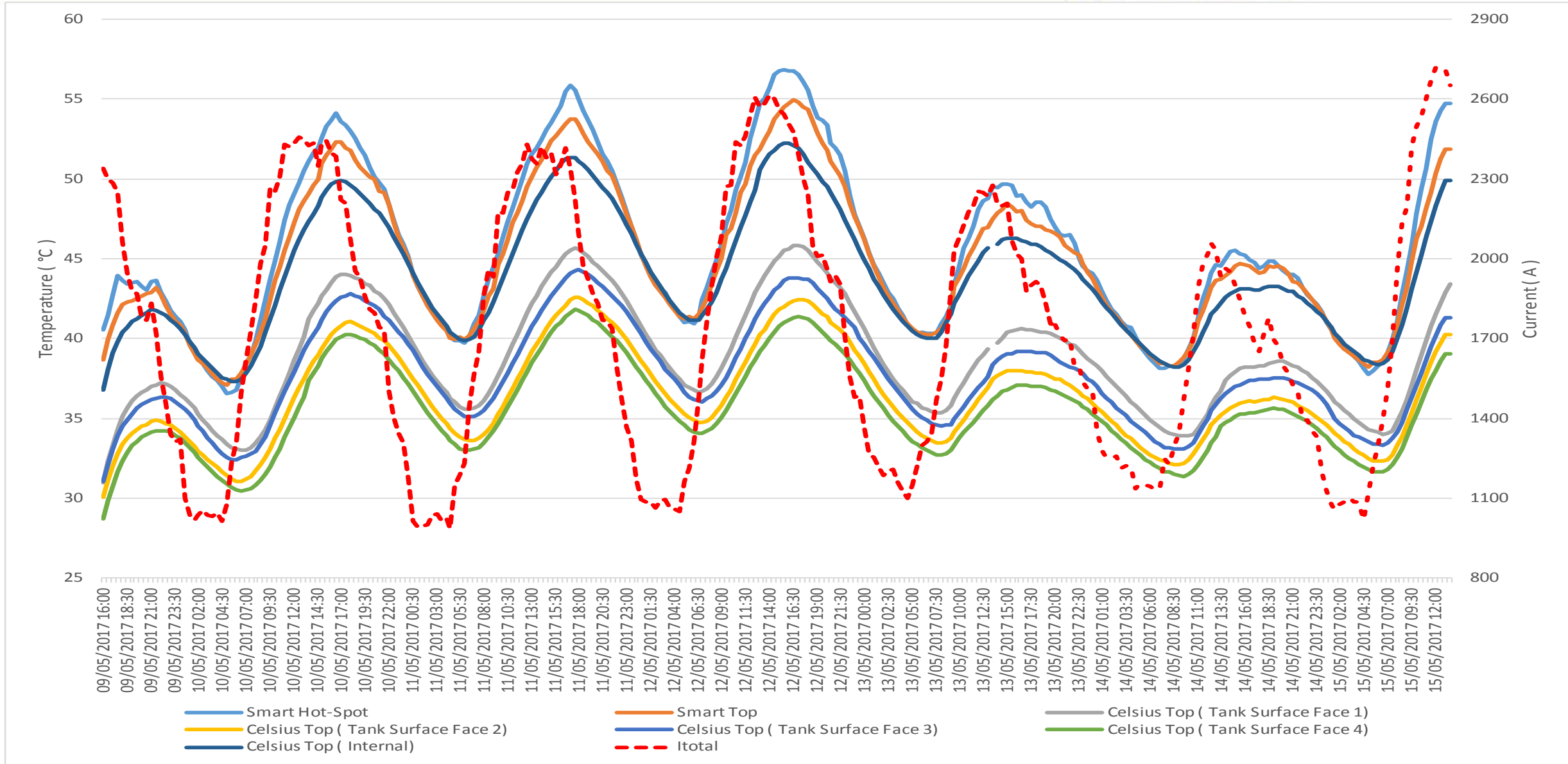
Ramillies Avenue



Smart Tx vs Celsius: power



Smart Tx vs Celsius: temperature





Customers in the Celsius trial areas will find the implementation of innovative retrofit cooling techniques as acceptable as traditional reinforcement

Customers who are educated as to the need for and benefits of Celsius are significantly more likely to find it acceptable



Customer engagement plan



Baseline survey



Test survey



Focus groups

Website



Video/
podcasts



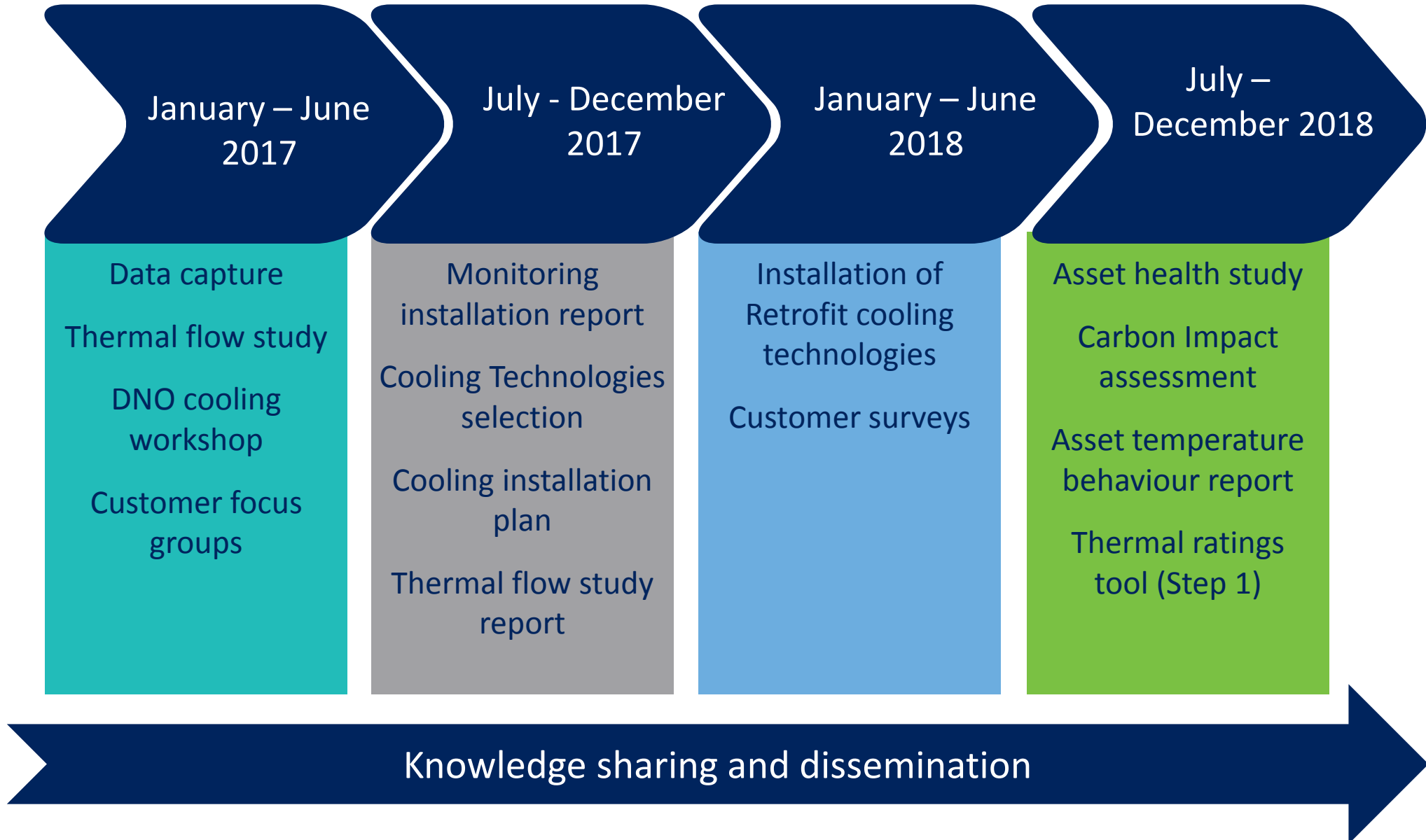
Customer mailing



Social media



Progress and next steps





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Thank you for your time and attention