

# Progress in WP 2.3

## Heat capture

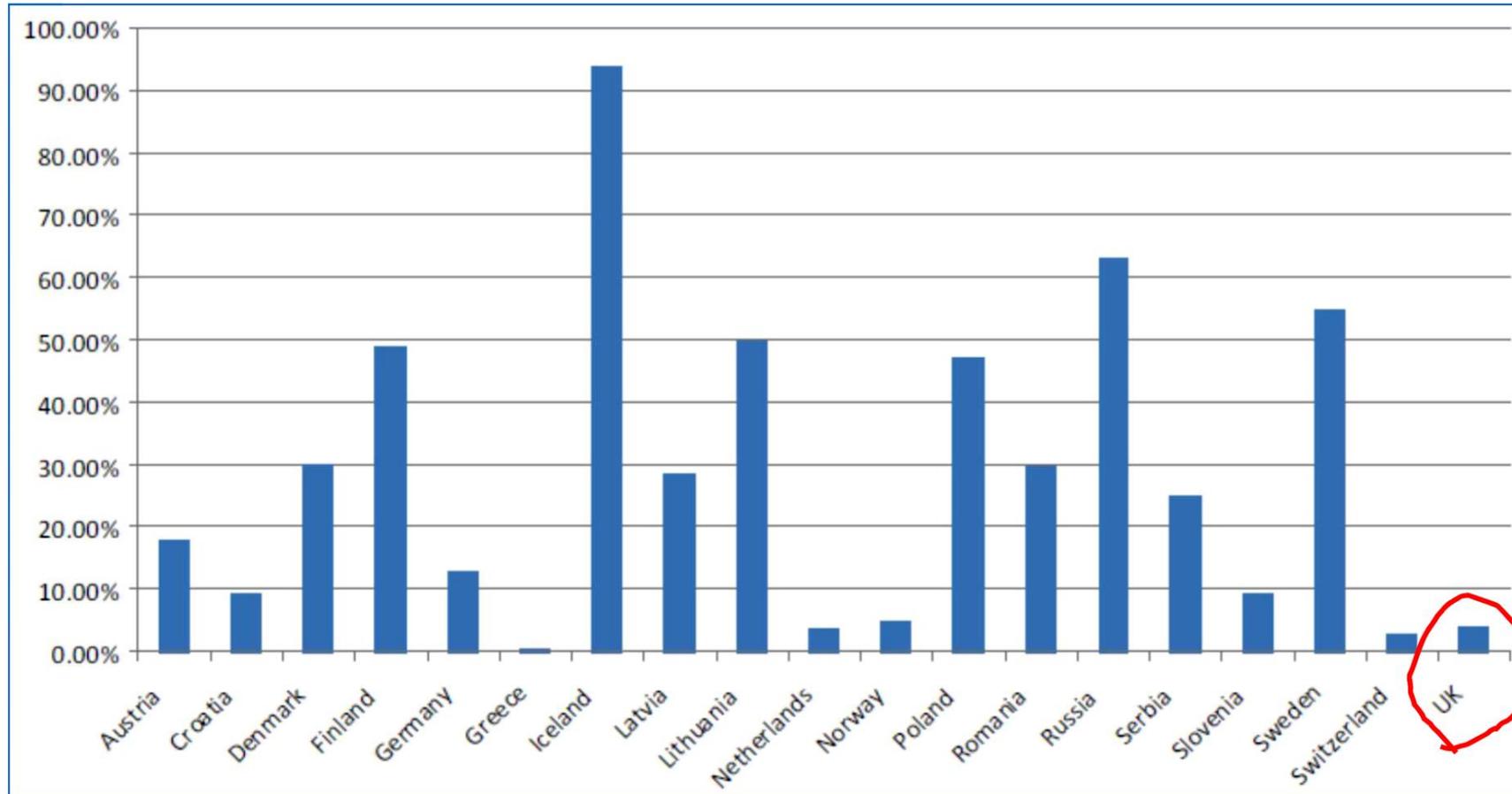
Akos Revesz, Gareth Davies, Catarina Marques, Henrique Lagoeiro,  
Graeme Maidment

London  
18<sup>th</sup> of September 2019

**London South Bank**  
University

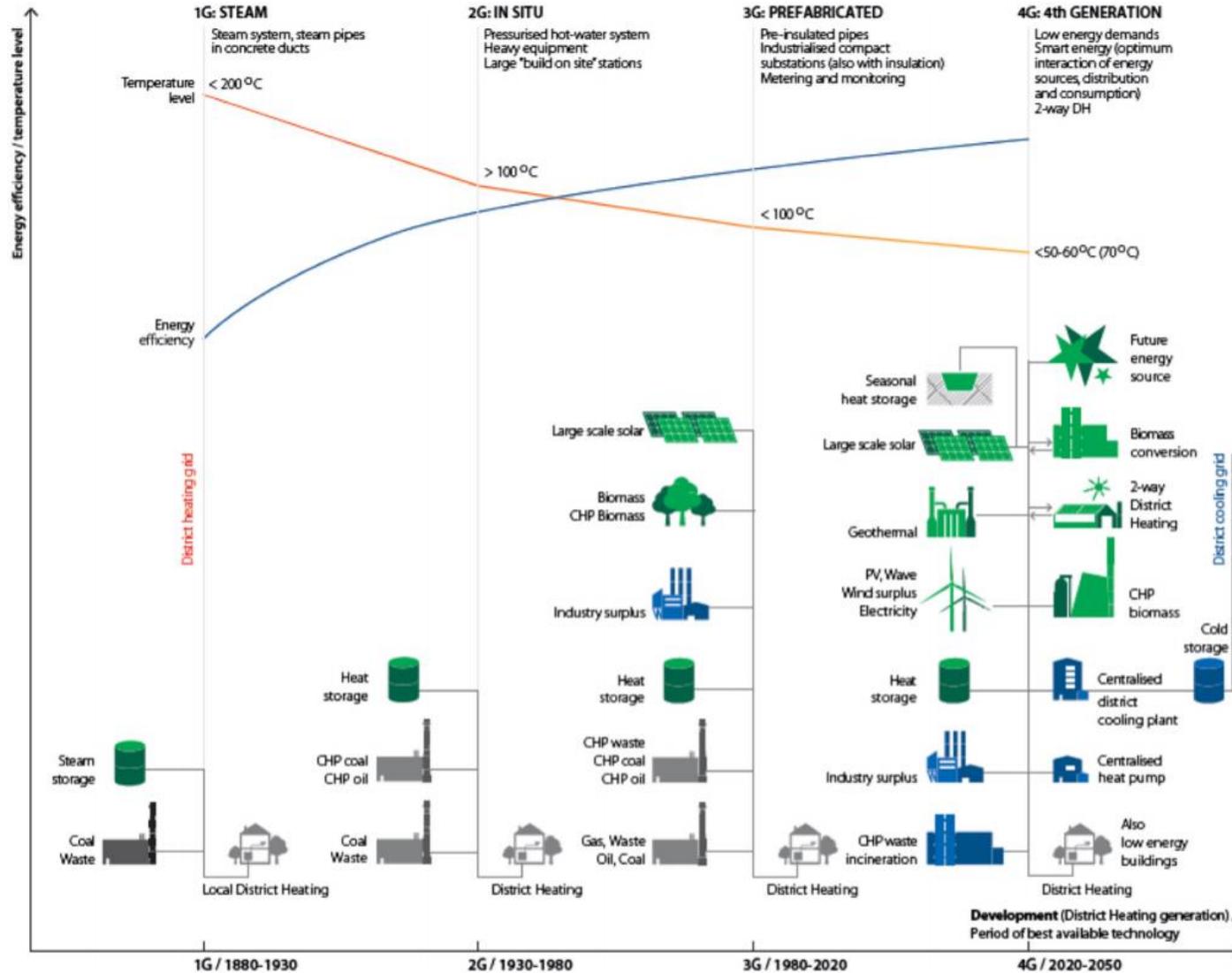
# Content

- 1) Background
- 2) Recent activities
- 3) Key outputs
- 4) New PhDs

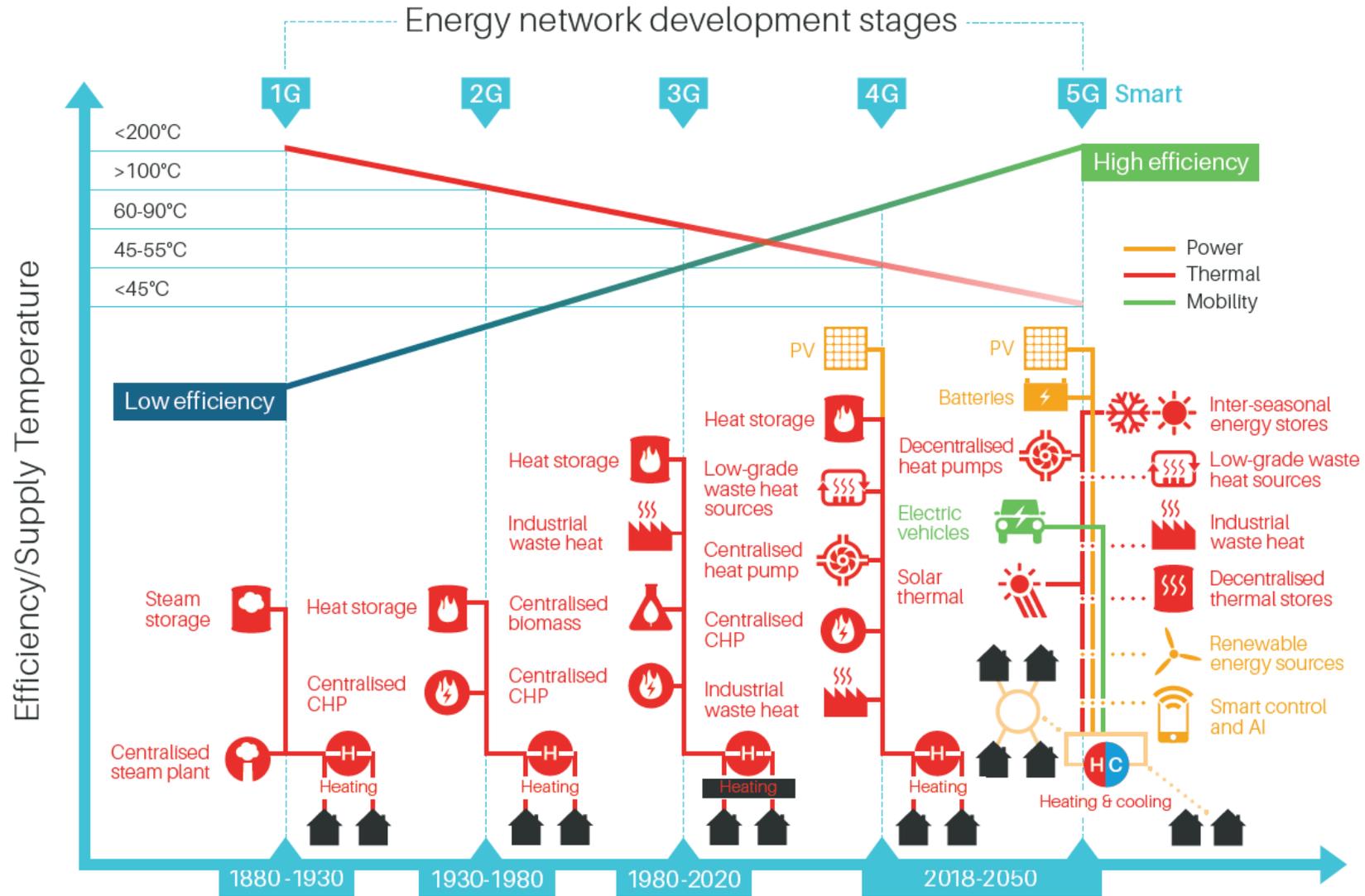


- Currently supply only 2% of heat demand in UK by district heating  
<https://setis.ec.europa.eu/system/files/JRCDistrictheatingandcooling.pdf>

# State of the art in low temperature networks

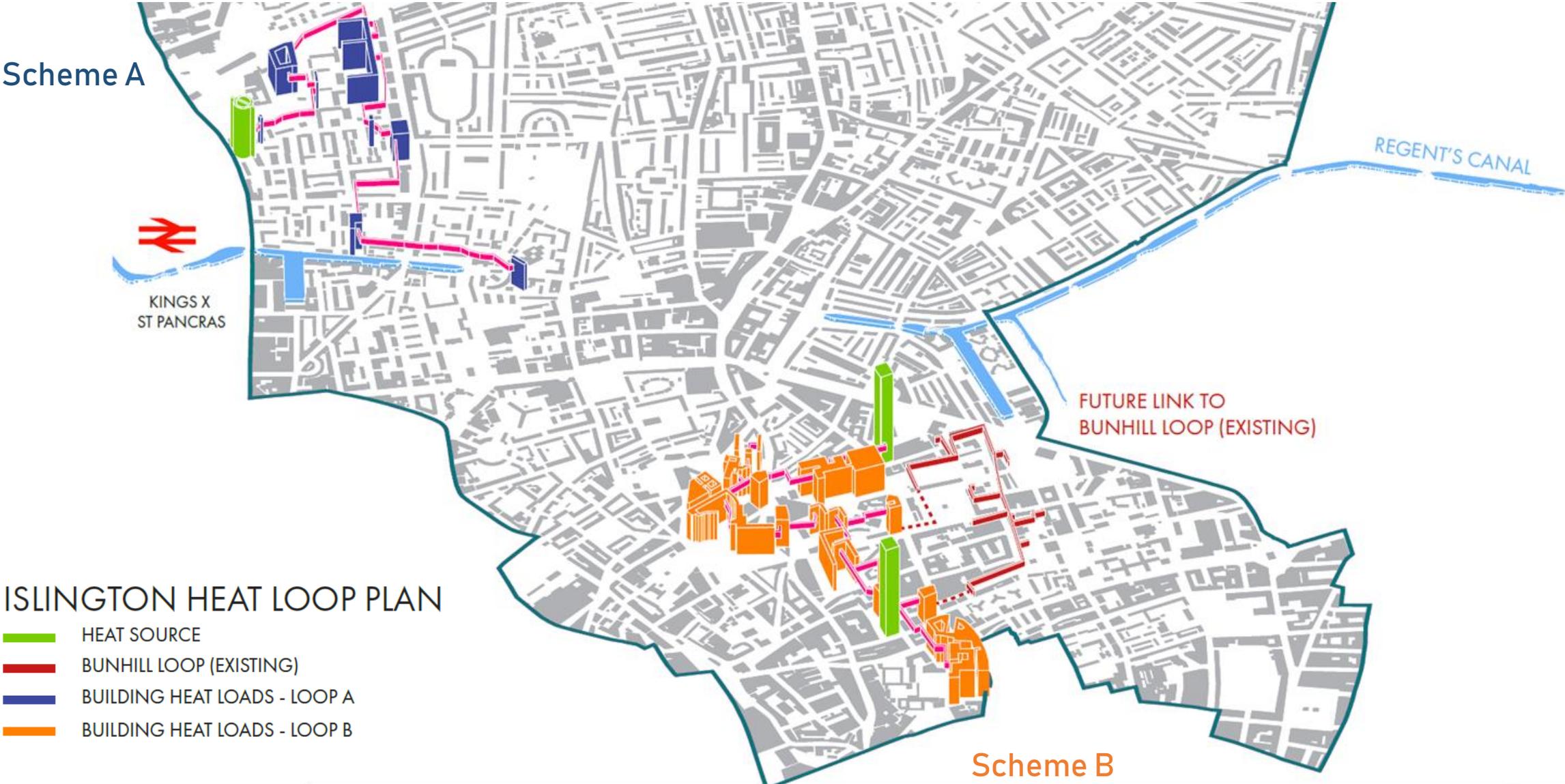


# Concept for an integrated energy system



Revesz et.al. 2019

# Islington case study – Two independent schemes



# Concept design for an integrated smart energy system in Islington



Low carbon heating and cooling to more than 3500 homes, 10,000 residents

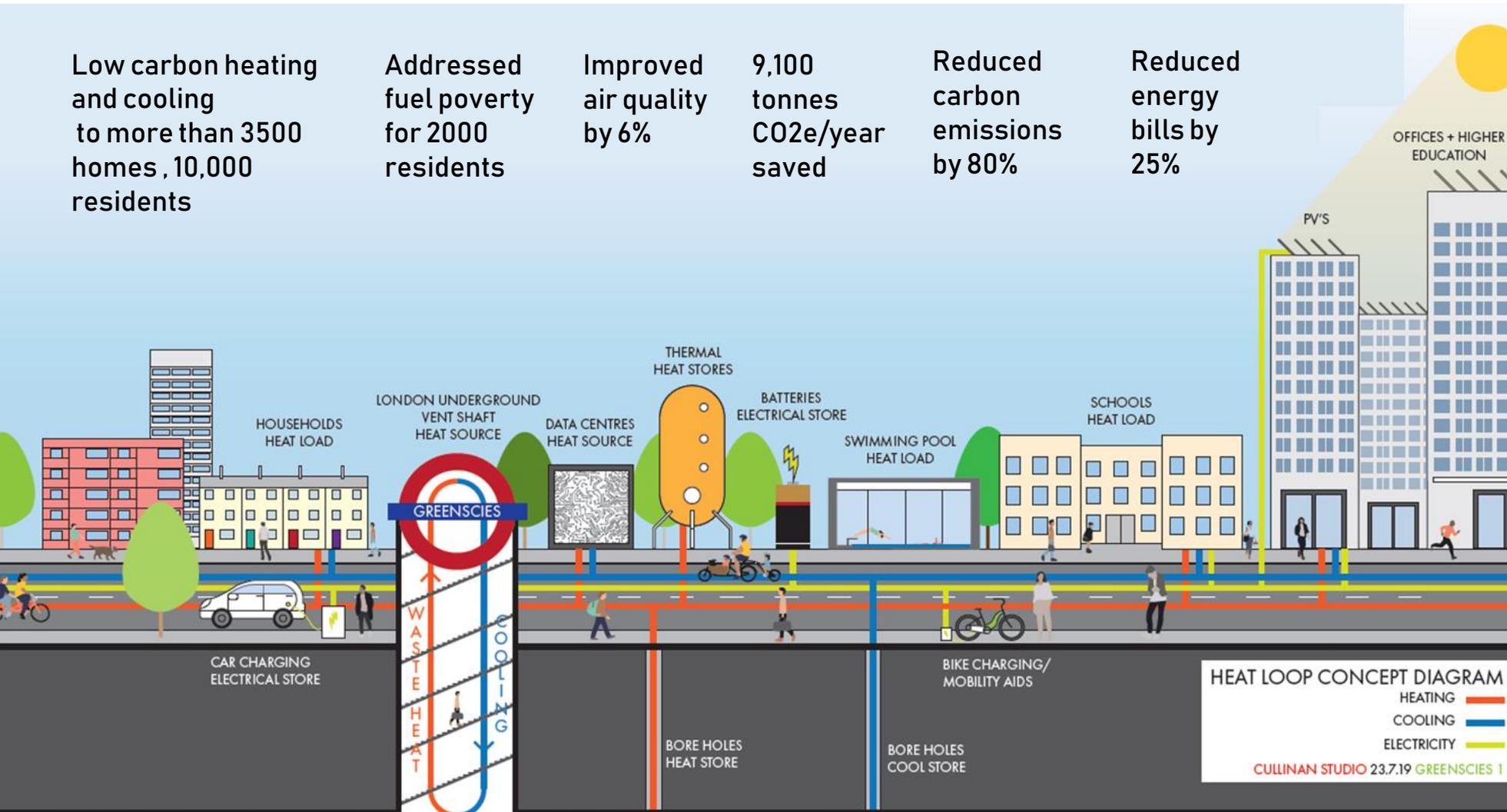
Addressed fuel poverty for 2000 residents

Improved air quality by 6%

9,100 tonnes CO2e/year saved

Reduced carbon emissions by 80%

Reduced energy bills by 25%



**London South Bank University**

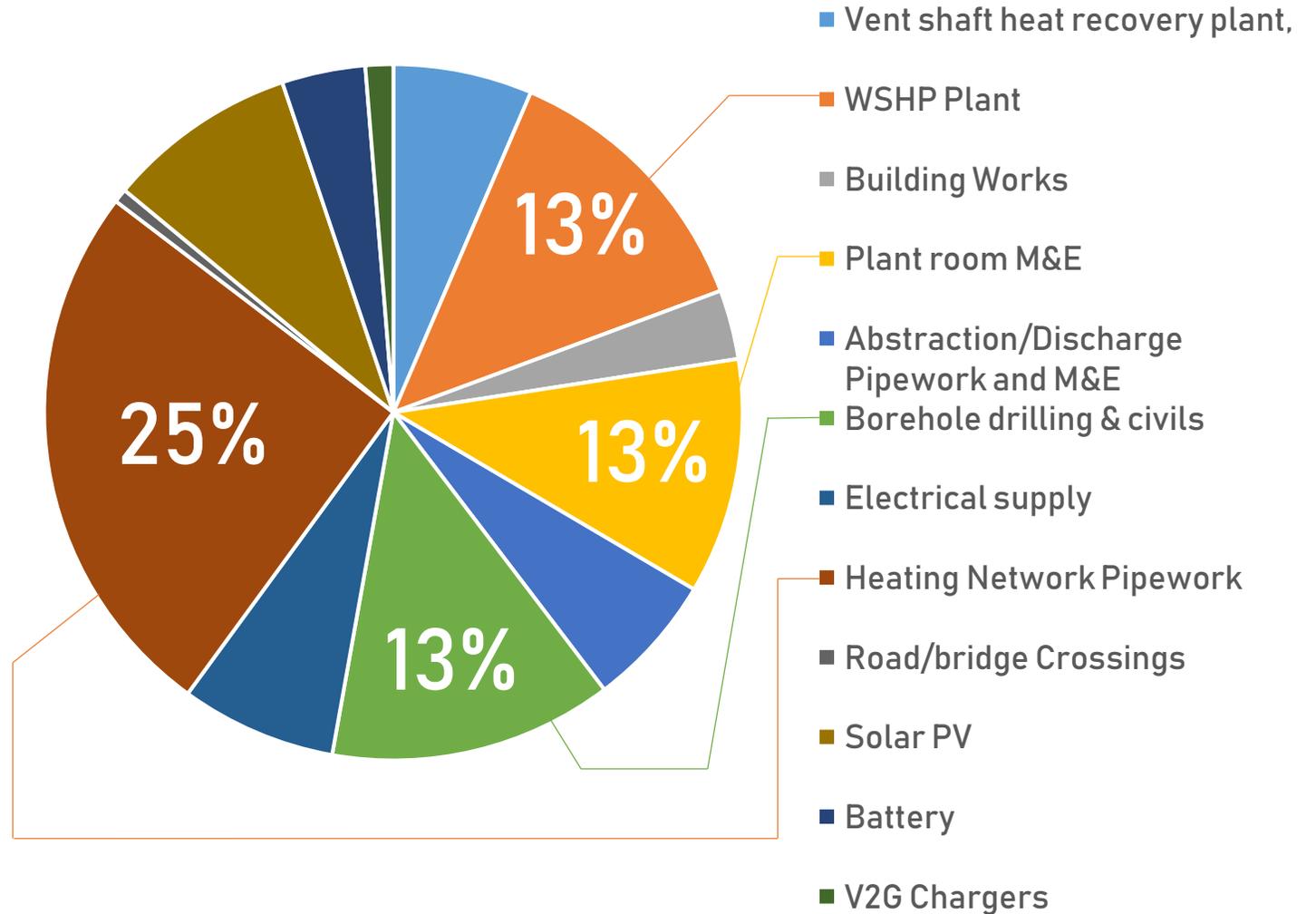
# Concept design for an integrated smart energy system in Islington



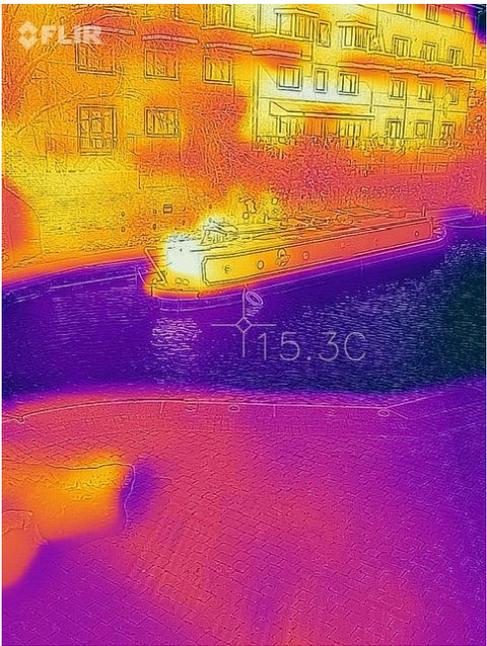
ATES, Solar PV, V2G  
and Bespoke batteries



11 years payback period

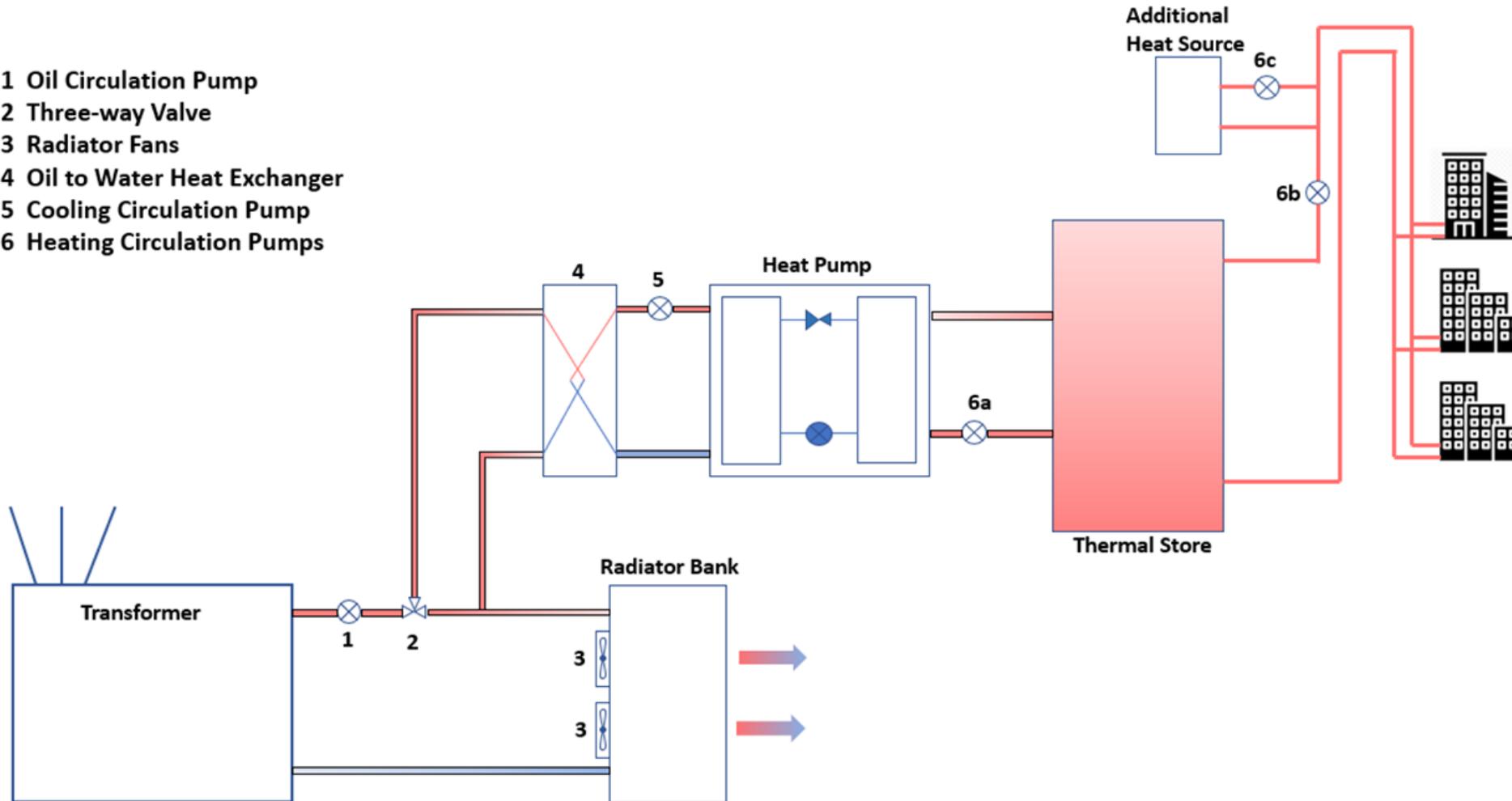


# Site investigations

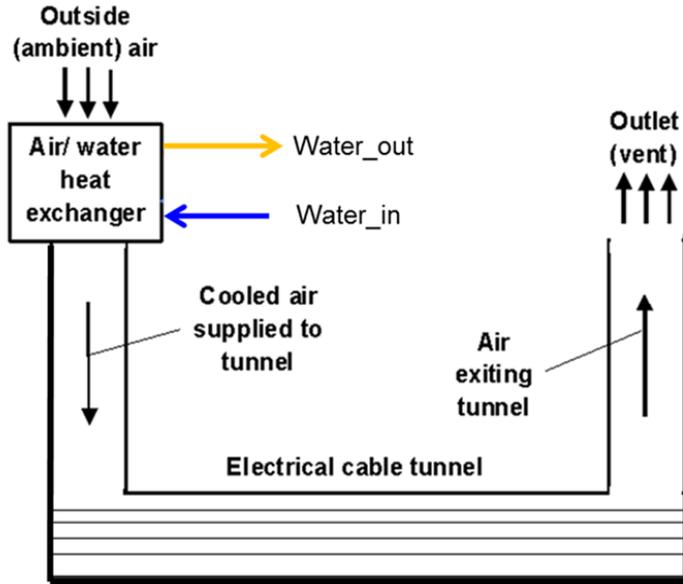


# Substation transformer heat recovery

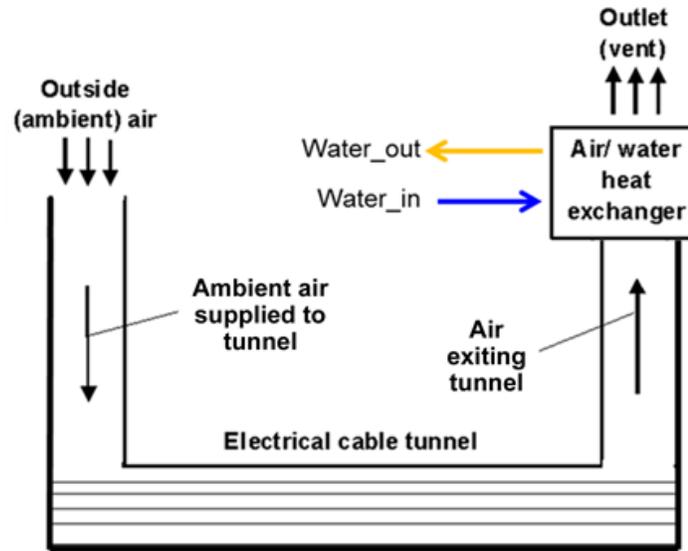
- 1 Oil Circulation Pump
- 2 Three-way Valve
- 3 Radiator Fans
- 4 Oil to Water Heat Exchanger
- 5 Cooling Circulation Pump
- 6 Heating Circulation Pumps



# Cable tunnel heat recovery



(a) Cold led heat recovery from supply shaft (CLHR)



(b) Hot led heat recovery from exhaust shaft (HLHR)



# Real life performance monitoring of Bunhill 2



# Key outputs - Papers and workshops



## ICR 2019

THE 25<sup>th</sup> IIR INTERNATIONAL  
CONGRESS OF REFRIGERATION  
August 24-30 | Montréal, Québec, Canada



RESEARCH  
LINKS

5TH INTERNATIONAL CONFERENCE ON  
**Smart Energy Systems**  
4th Generation District Heating,  
Electrification, Electrofuels and  
Energy Efficiency  
10-11 SEPTEMBER 2019 - COPENHAGEN  
AALBORG UNIVERSITY  
DENMARK



 **Technical  
Symposium  
2019**



1. Combined cooling and heat recovery from data centres
2. Whole energy systems

