



# Green Smart Community Integrated Energy Systems

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# What is GreenSCIES?

- Is a new project developed in partnership with London South Bank University, TfL, E.On and several other partners, with the objective of creating a new Energy System to reduce carbon emissions, reduce the cost of energy (heat and power) and facilitate the electrification of the urban transport in the local area.
- The Energy System is based on an ambient-loop heat network, that integrates different energy uses:
  - Space heating
  - Cooling
  - Local renewable power generation
  - Mobility: EV chargers, Vehicle to Grid (V2G)

# What is GreenSCIES?

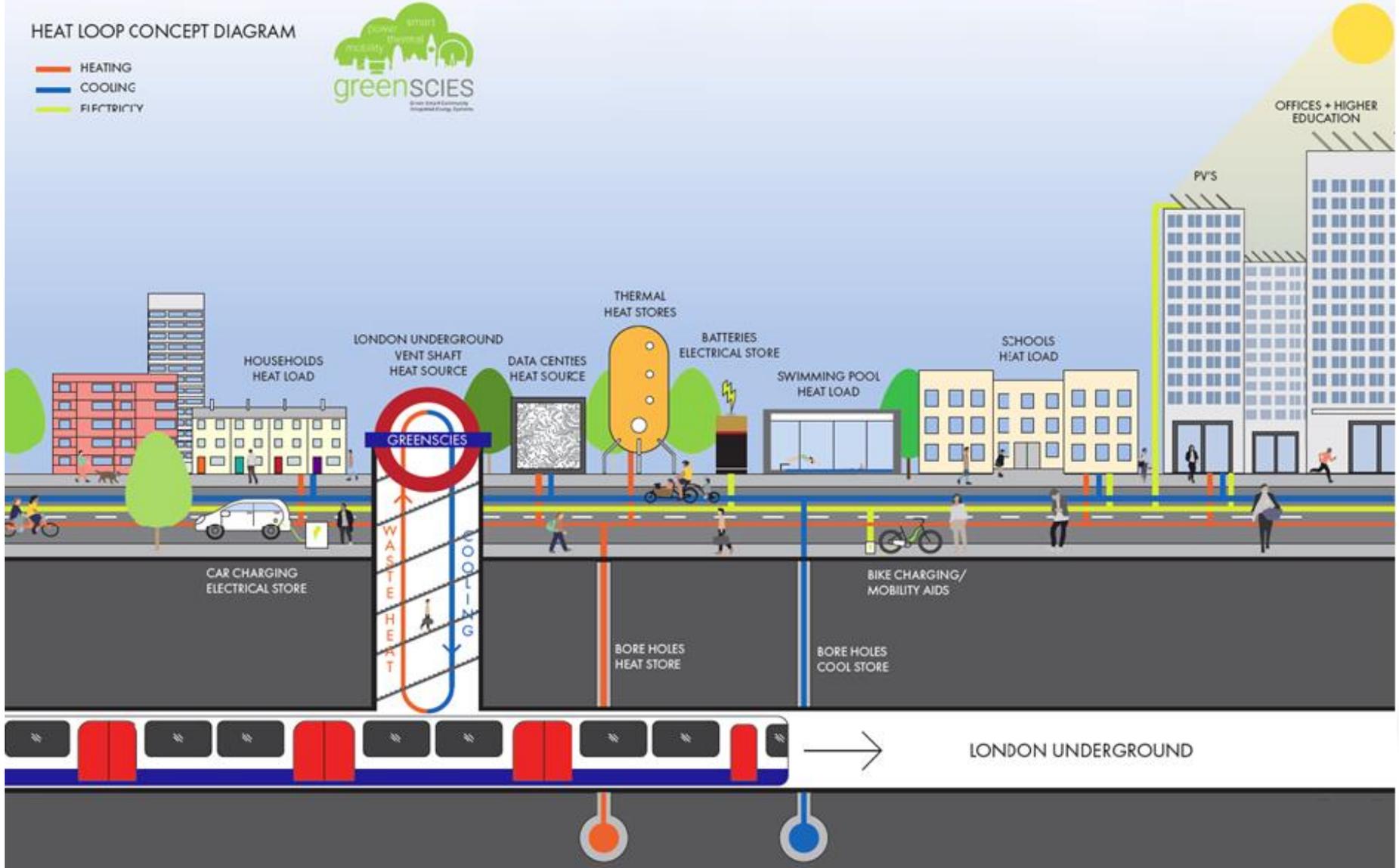
- It takes advantage of waste heat and renewable heat and power sources and will not use any fossil fuels.
- The project has been led by London South Bank University with Islington as the main partner and sole client.
- The entire development of the project has been funded by Innovate UK



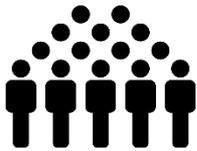
# Concept Design

HEAT LOOP CONCEPT DIAGRAM

- HEATING
- COOLING
- ELECTRICITY



# Scope



> 10,000  
residents  
benefitting



Potential of  
low carbon  
heating and  
cooling to  
more than  
3,000 homes



Renewable power  
generation enough  
to supply nearly  
500 homes



> 100 new EVs  
connected to the  
smart energy  
network

Estimated total carbon savings up to **10,000 tonnes**

Operational revenue > **£1,000,000/year**

Aimed to reduce energy costs by **25%**

# GreenSCIES partnership



# Stages

- GreenSCIES is divided in three stages:



**Total Funding: £200k**  
**Islington Funding: £12k**

**Total Funding: £3M**  
**Islington Funding: £250k**

**Total Funding: TBC**



# Where in Islington?

- GreenSCIES will develop two independent systems:

## Scheme A

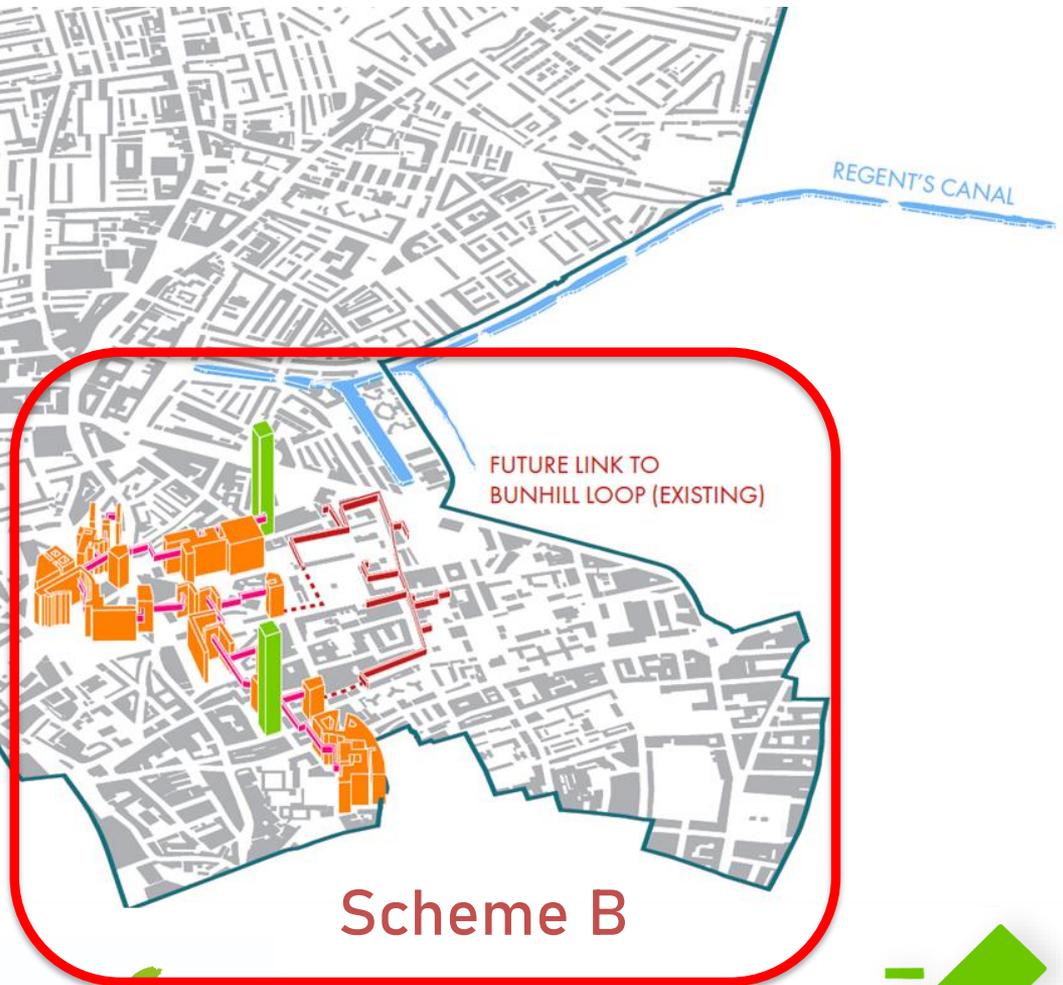
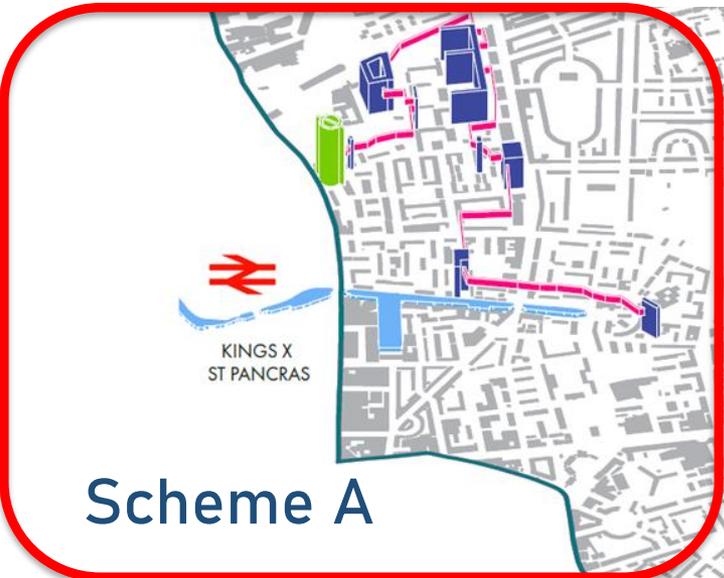
- Powered by waste heat from the tube vent shaft in York Rd.
- Some potential buildings connected:
  - Delhi Outram estate
  - Bemerton estate
  - Cally Pool
  - Copenhagen Primary School
  - Half Moon Crescent Estate
  - Blessed Sacrament School.

## Scheme B

- Powered mainly by waste heat from data centres in Bunhill and Clerkenwell wards.
- Some potential buildings connected:
  - City University
  - Spa Green Estate
  - Finsbury Estate
  - Brunswick Estate
  - Rosebery Hall (LSE Student accommodation)
  - Level 3 Data Centre
  - Volta Data Centre



# Where in Islington? cont.



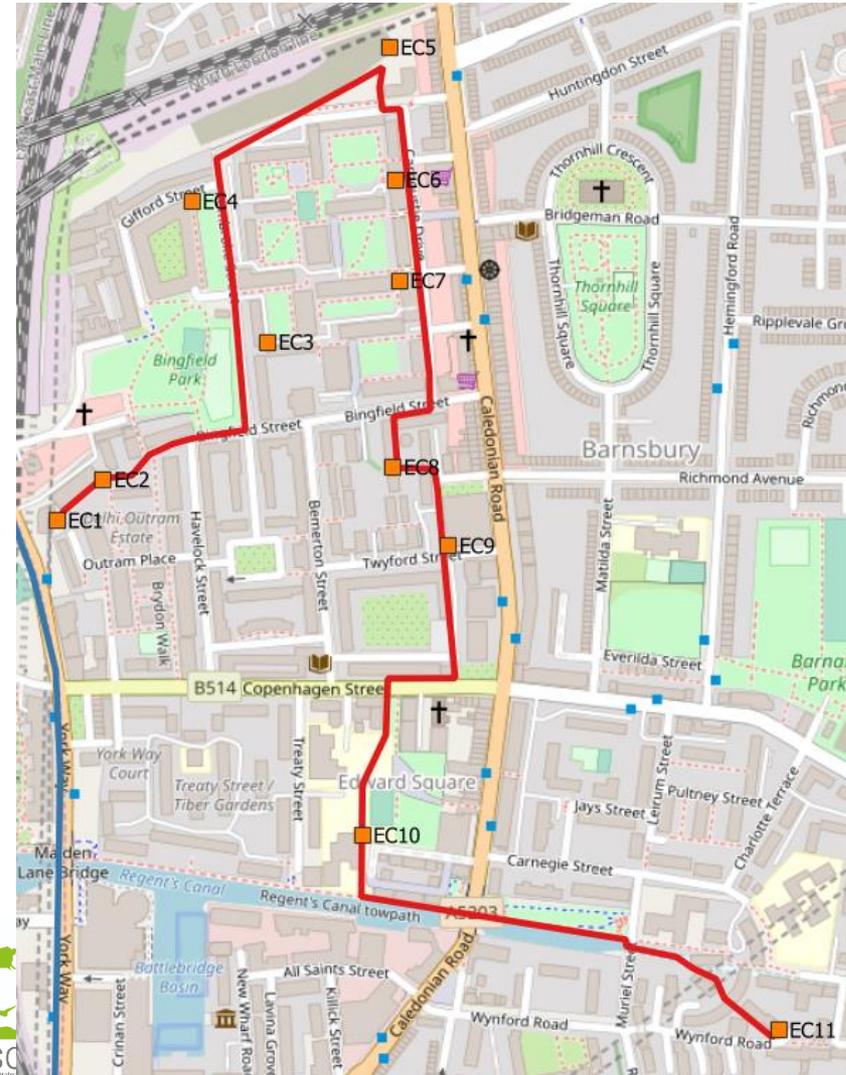
## ISLINGTON HEAT LOOP PLAN

- HEAT SOURCE
- BUNHILL LOOP (EXISTING)
- BUILDING HEAT LOADS - LOOP A
- BUILDING HEAT LOADS - LOOP B

# Network outline designs

## Scheme A

- 9 housing estates
- 3 non-residential
- Peak heat demand: 6MW
- Total PV capacity: 0.9 MW



# Network outline designs

## Scheme B

- Main heat source: Data centres and boreholes
- 8 housing estates
- 7 non-residential
- Peak heat demand: 15MW
- Constant cooling demand: 5MW
- Total PV capacity: 0.8 MW



**ON ENERGY**

 ISLINGTON

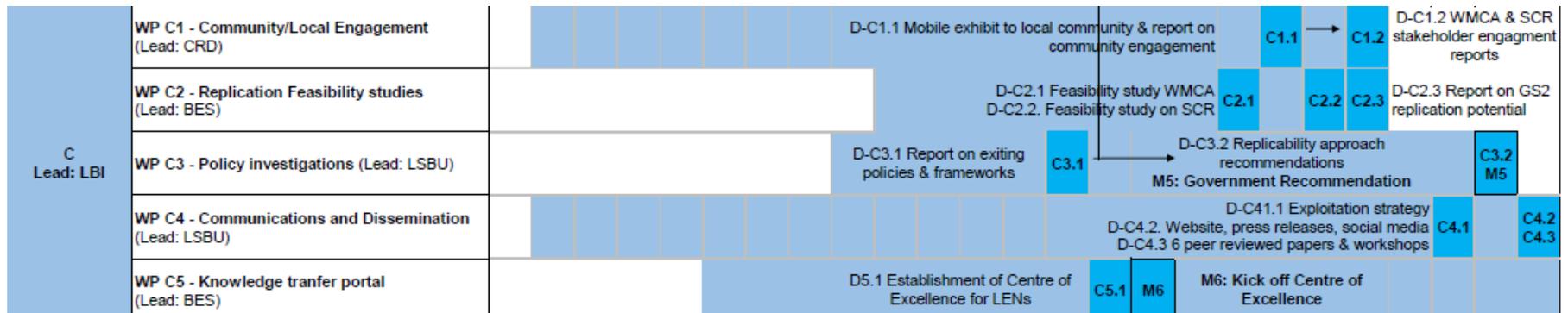
 green energy  
smart  
power  
mobility  
thermal  
small  
local  
integrated  
energy  
systems

# Islington's role in GS2

- The Council's role is to ensure the GreenSCIES partnership is delivering on fuel poverty alleviation, reduction of impact on the environment and saving money on the cost of living, as per the Council's Corporate Plan pledges inline with our Energy Strategy.
- The Council oversee the development of each stage of the process and will lead on the commercial and legal development, aimed to have a "shovel ready" project once the detail design is complete.
- Ensuring that the project meets our commitments of tackling fuel poverty and net zero carbon by 2030.



# Timeline, Deliverables and Approach



# Next Steps

Stakeholders mapping, engagement and feedback

Information gathering

Bunhill lessons learnt

Facilitate the communication between institutional stakeholders and GS partnership

Communication and dissemination

# Questions?

