Islington and the AZP

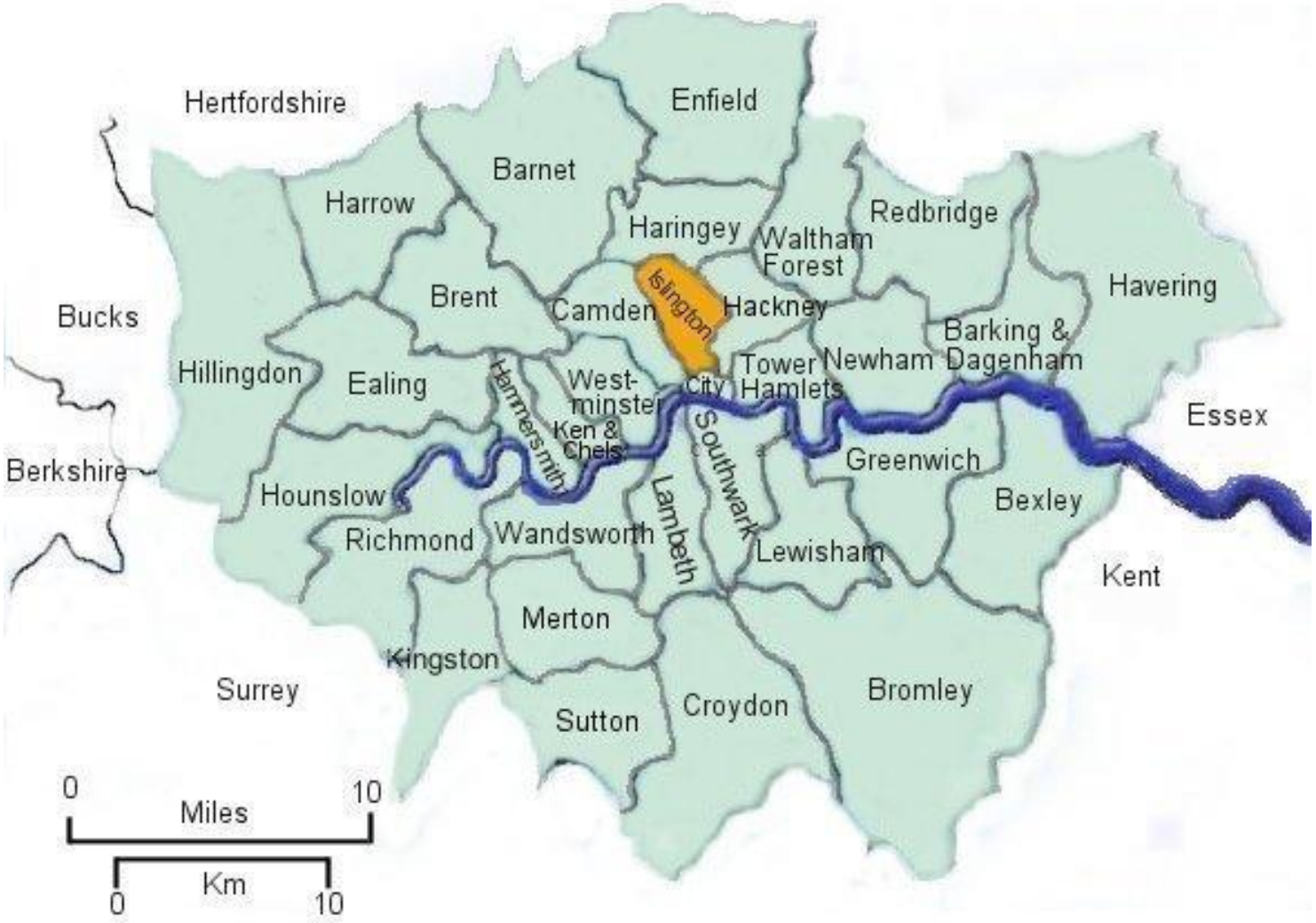
APSE Energy Event

Richard Martin, Strategic Lead for Climate Action

ISLINGTON

Islington background

- Population density in Islington is one of the highest in the UK
- 83.6% live in flat, maisonette or apartment
- 71.7 % rented, 40.2 % social
- Ranked one of the most deprived Local Authorities with significant child poverty
- Local Government financial crisis, austerity, covid, energy crisis, cost of living, adult social care, homelessness etc
- Fair funding review



Bunhill Heat and Power Network





Operational heat network

- Designed, Building, Financed, Operated and Maintained (DBFOM) by Islington Council
- Two energy centres (EC1, EC2)
- 15 connections + two planned
- 1500 homes, 2 leisure centres, school, some commercial
- 2.4 km pipework
- Peak network demand: 6.7MW



Phase #1 – Combined Heat and Power

Aims

- Reduced heating costs
- Long-term, flexible and expandable
- Reliable and secure energy supply
- Generate income for Council

Contract and Funding

- D+B Contract - £3.7m
- LDA (GLA) Grant - £2.3m
- Council capital - £1.9m

Delivery

- Purchasing utilities on the open market
- Selling electricity or generating, storing and selling heat – flexible marginal costs
- Internal supply and recharge agreements
- Private connection heat supply agreements

Specifications

- 2.2 MWe gas-fired CHP engine
- 115 m3 thermal store

Phase #2 – Air Source Heat Pump

Aims

- Celsius Smart City Programme
- Innovate UK funding
- Low temperature waste heat
- Reduce carbon emissions

Contract and Funding

- D+B Contract - £6.2m
- Celsius Grant - £1.4m
- Council/HRA/Connection/S106 ~£8.3m



City Road Station in 1915

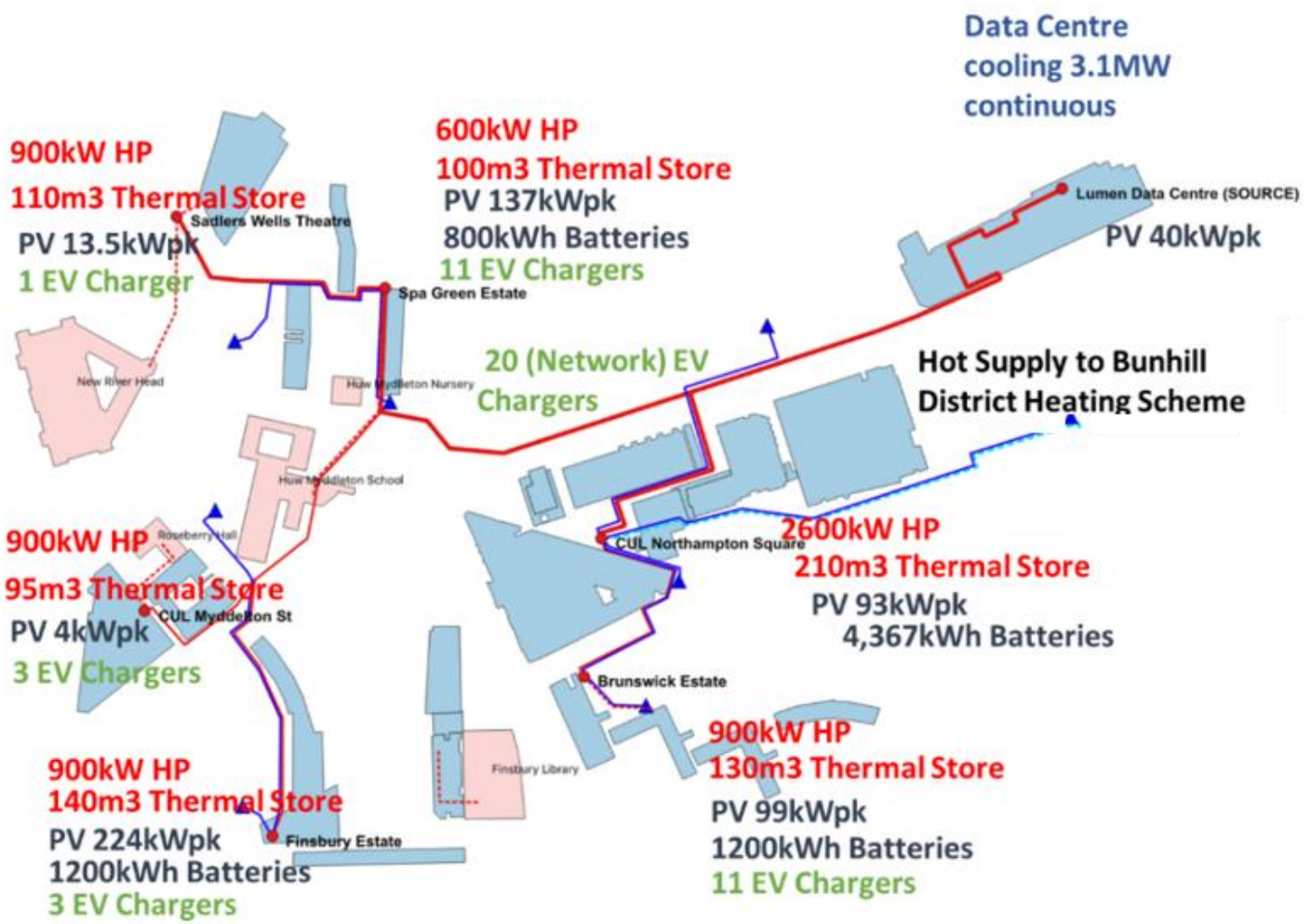


TfL Vent in 2004

Specifications

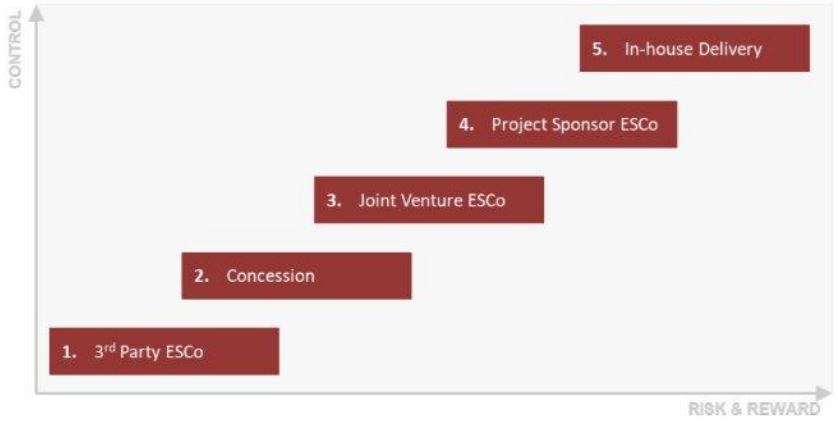
- 1 MWe ASHP heat pump and 2x 450 kWe CHP gas engines
- 50 m3 thermal store

GreenSCIES – New River Network

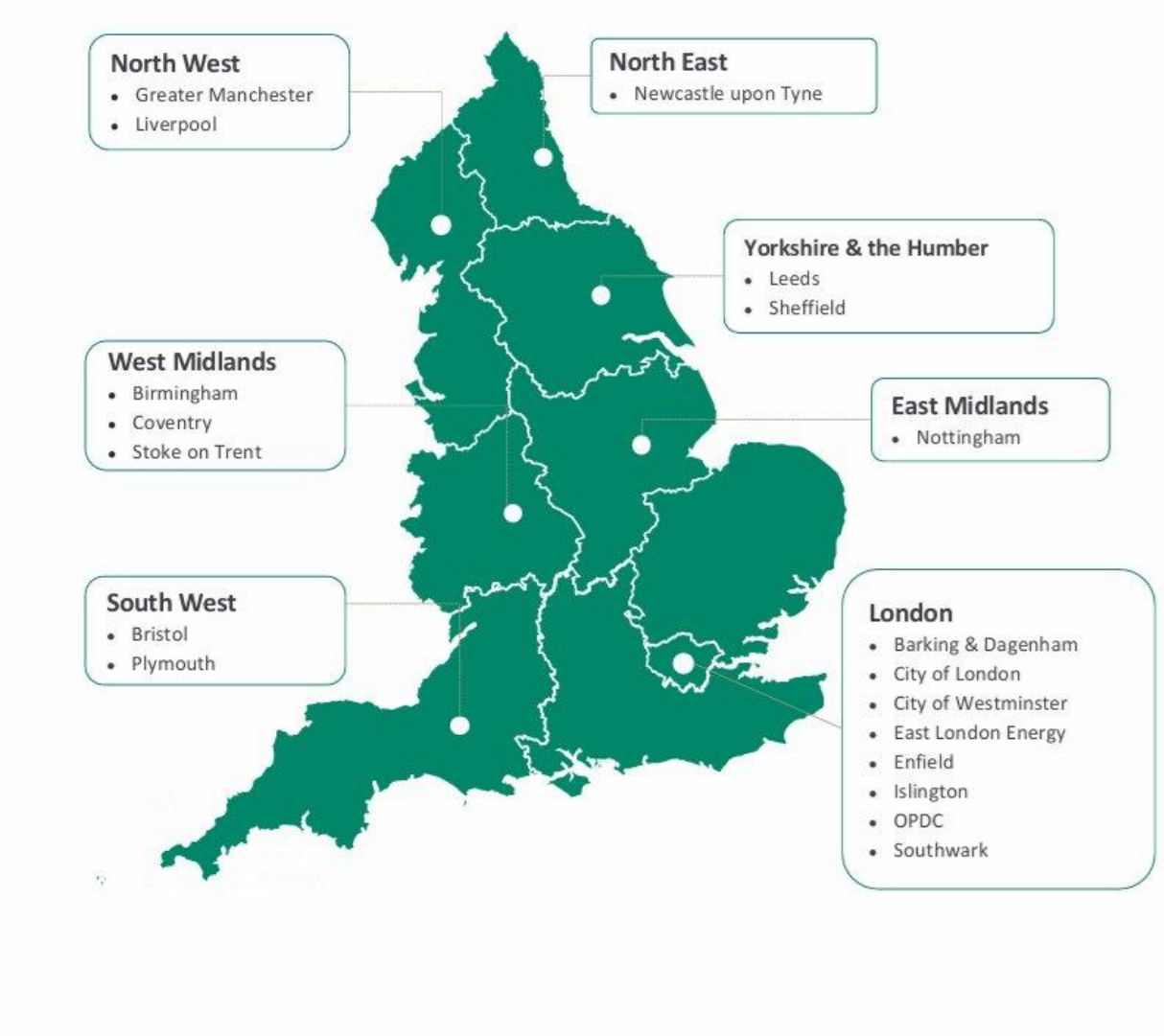


Smart system proposal

- Waste heat from data centre
- Anchor heat demand – City & St. Georges University, Saddlers Wells and LBI housing
- Solar PV, battery storage, EV charging, heating, cooling and thermal stores
- Proposed commercial structures



Advanced Zoning Programme



FOR A MORE EQUAL FUTURE

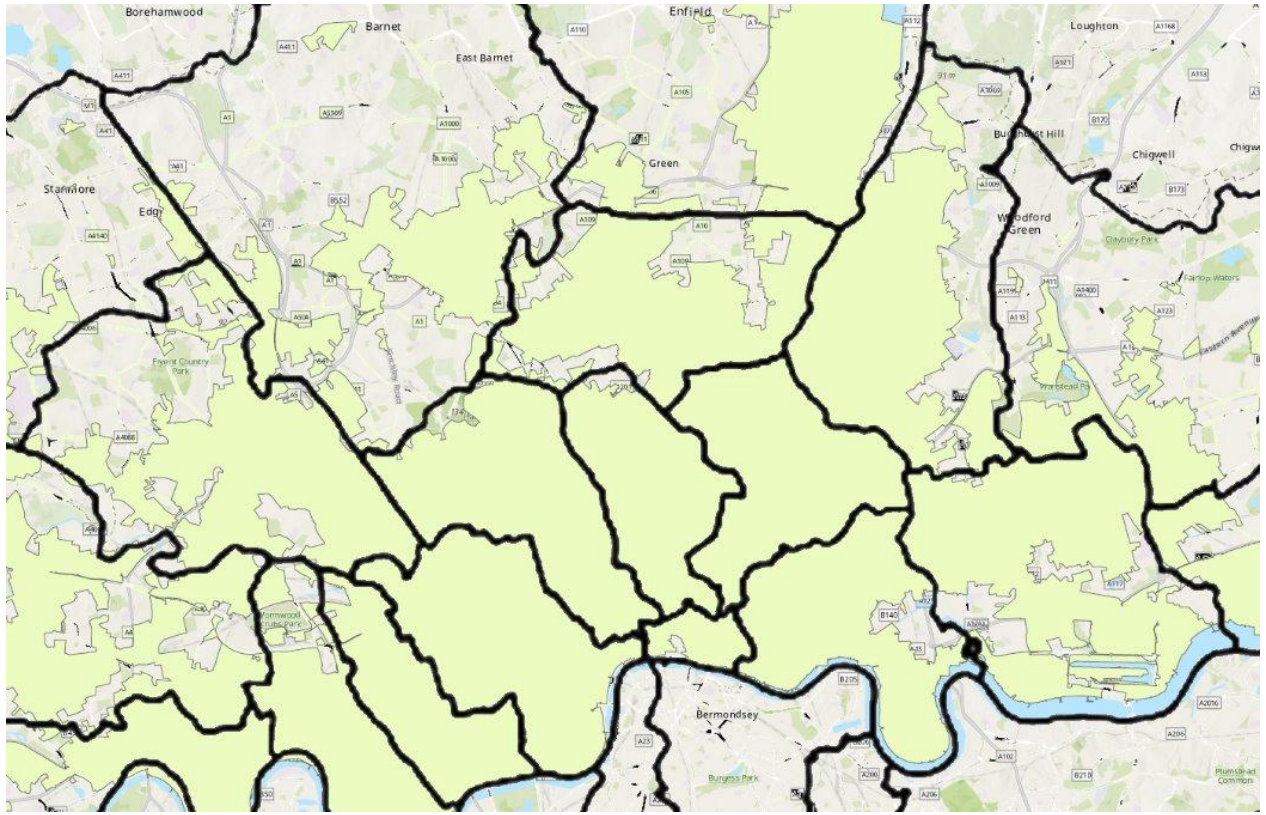
Energy Act (2023) Heat Network zones

Identifying and designating zones where heat networks provide the lowest-cost, low carbon heating option

- Establishing Zone Coordination Bodies
- Zone Development Areas
- Zone development rights (monopoly)
- Required to Connect buildings

➢Statutory Instrument (2026?)

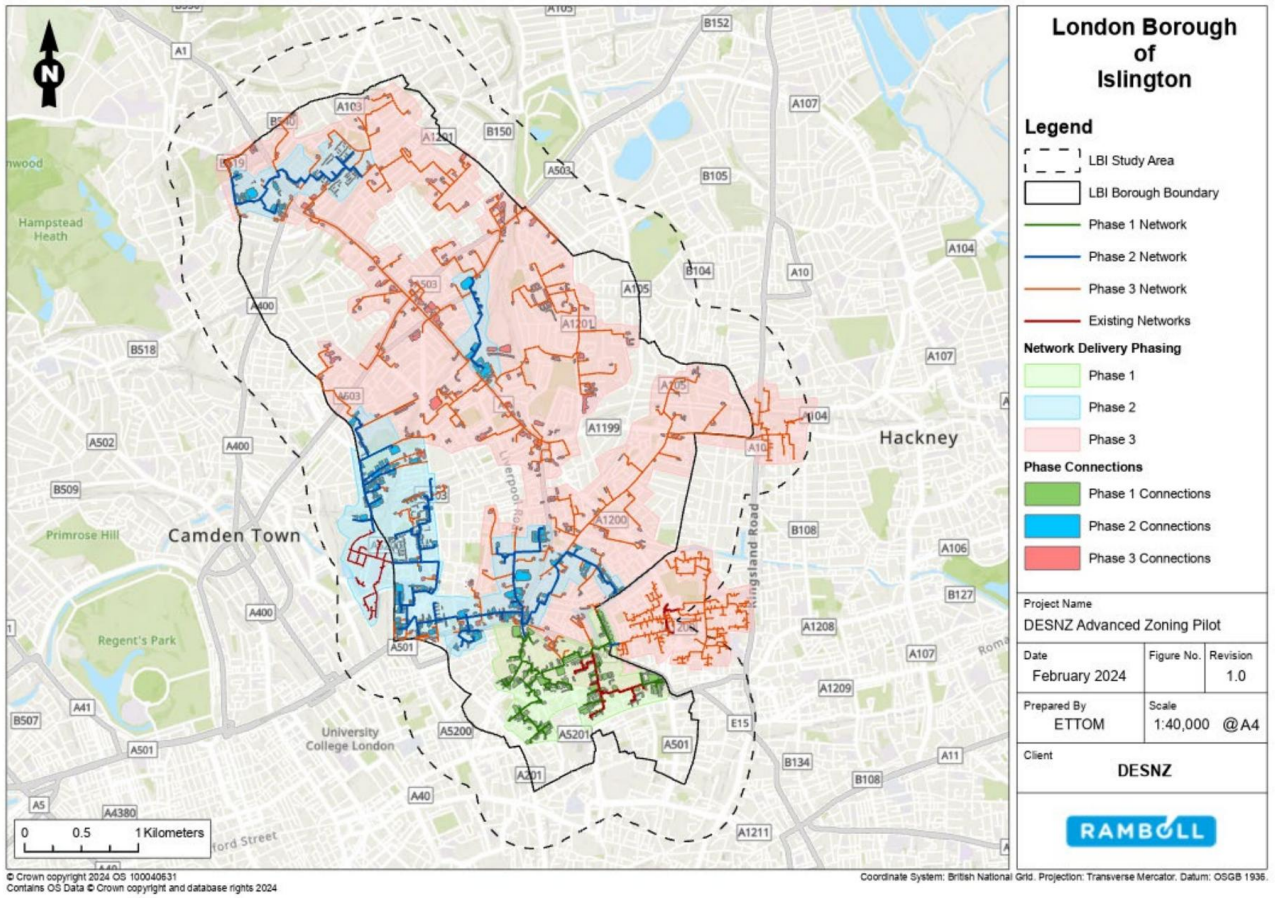
➢Energy Independence Act (2027?)



Heat Network – National Model Run 1.0 Sept 2023

AZP phase #1 – technical study

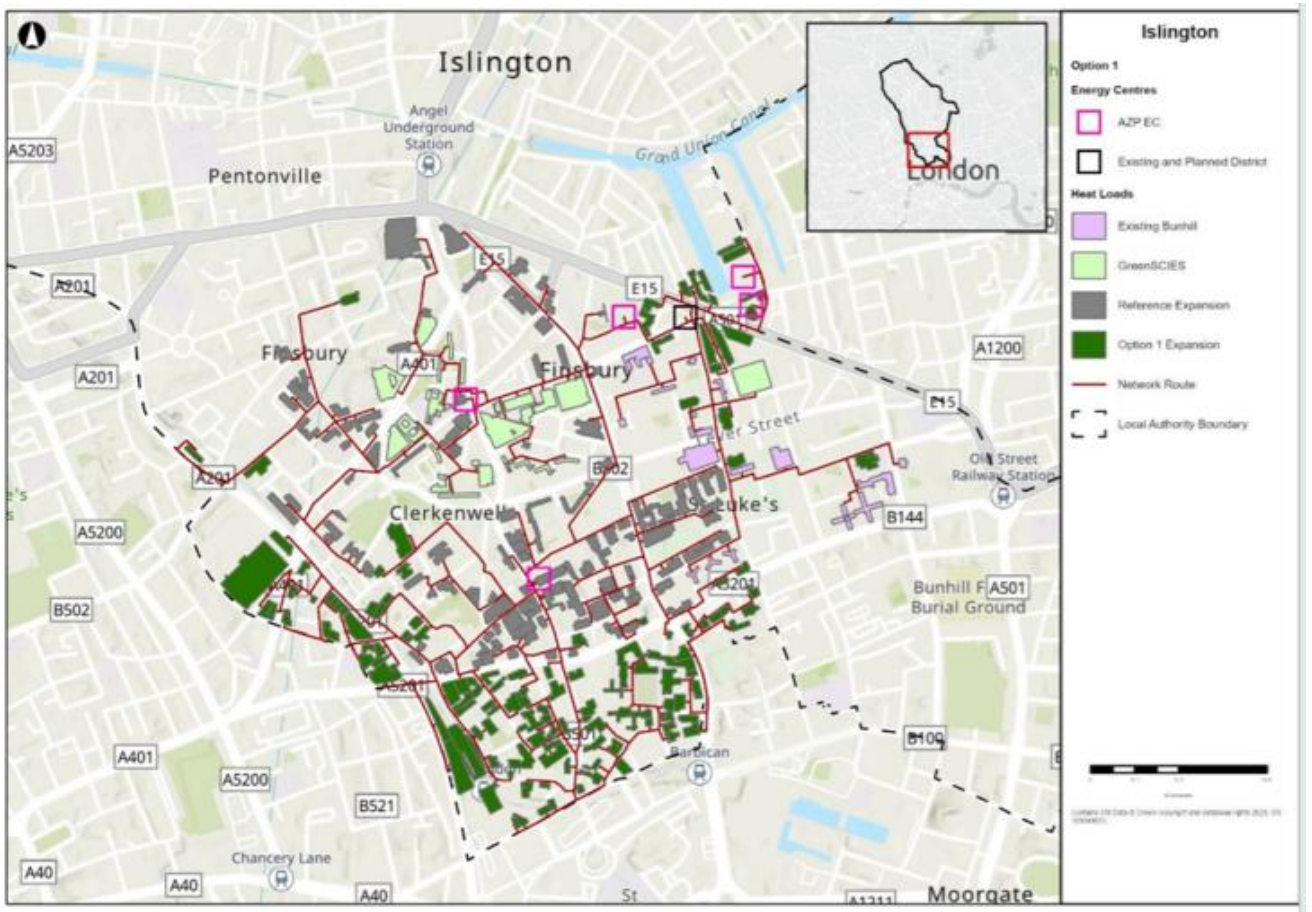
- Refinement of heat master plan (2014)
- £930 million investment opportunity
- Phase #1 South Islington ~ £93 million
- Phase #2 Four clusters ~ £226 million
  - South Islington expansion
  - Cally Road and Kings Cross
  - Highbury, Arsenal and Harvist
  - Archway and Whittington hospital
- Phase #3 interconnections



Map 3. Priority Project and illustration of wider zonal network opportunity in Islington. Phase 1 Priority Project (in green) estimated at around £97 million capex to set foundations for zonal heat networks.

AZP phase #2 – outline business case

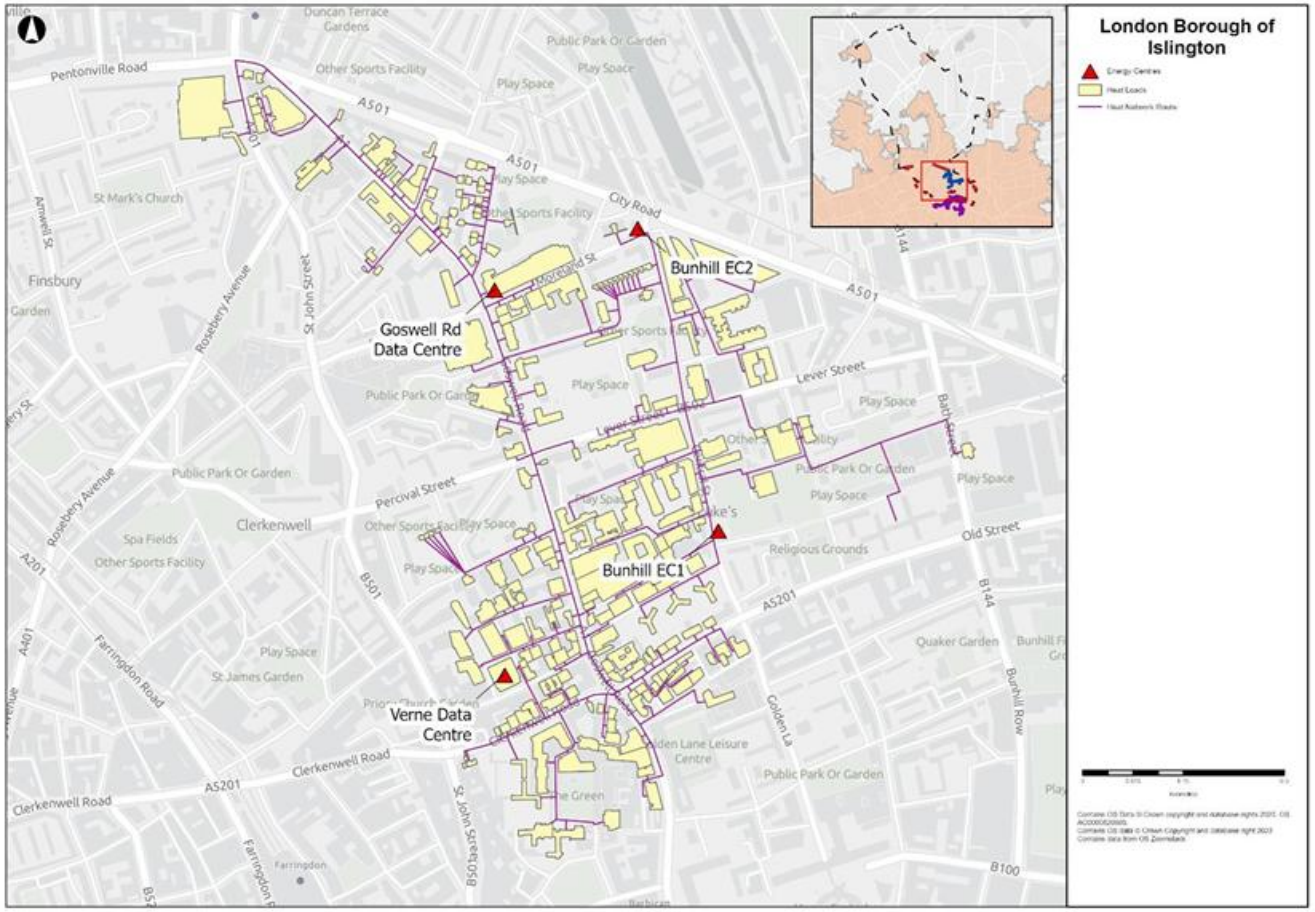
- South Islington heat network
- Economic case
  - CapEx £180 million
  - Levilised Cost of Heat 13.3 p/kWh
  - 131 GW of heat across 270 RtC buildings
  - Internal Rate of Return (IRR) 2.9%
  - Emissions savings 973,000 t CO2e
- Financial case
  - Nominal capital costs £310.2 million
  - IRR (pre grant) 7.64 %
  - Post tax, post grant IRR 9.5% (modelled £26.1 m GHNF)



South Islington opportunity and Required to Connect buildings NRM 3.0

AZP tranche #2 – HN readiness strategy

- Not to proceed to procurement, pre-SI
- Road map to a partnership
- Commercial support to identify offtakers and market soundings
- Updated business case with NRM 5.0 (0.5) indicated higher heat demand
- Revised commercial case
  - CapEx £130million
  - 150 GWh/yr of heat across 341 buildings
  - Levilised Cost of Heat 9.68 p/kWh
  - **Internal Rate of Return (IRR) 13.3%**
  - Emissions savings 1,111,000 t CO2e

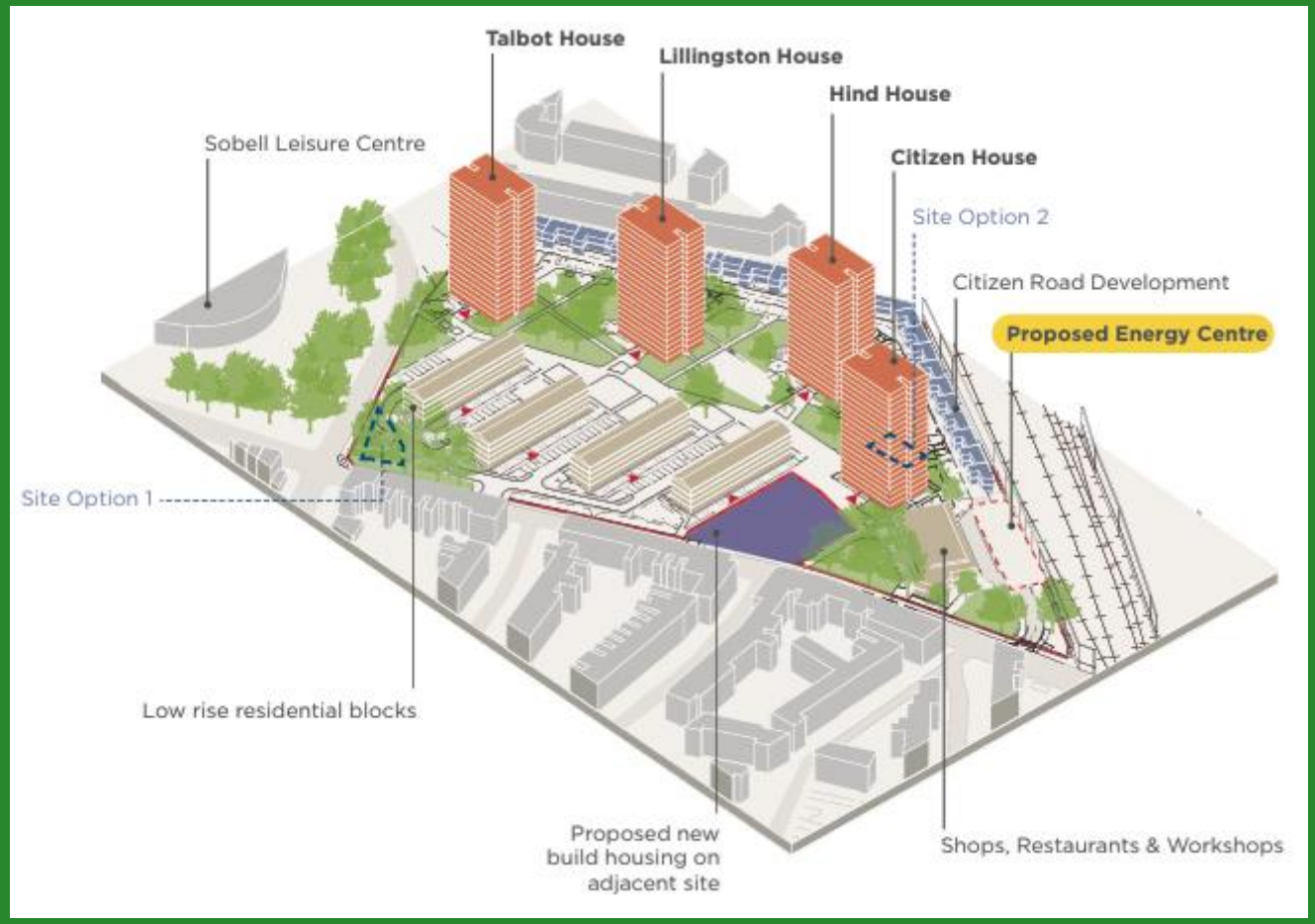


South Islington reference case and Required to Connect buildings NRM 0.5

Next steps and challenges

- EoI in early zone designation and support for preparatory activities
- DESNZ Heat Network pipeline
- Internal resourcing and governance bandwidth in difficult times
- Huge opportunity to accelerate decarbonisation of heat

- Cost of heat to residents (spark gap and green book modelling)
- Payback on any further Council investment
- Compliance and RepEx costs of BAU (Bunhill and secondary systems)
- Zoning useful, but impact tbd, private sector appetite
- Financial case for investment



Proposed new ASHP heat network at Highbury and the Harvist Estate

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