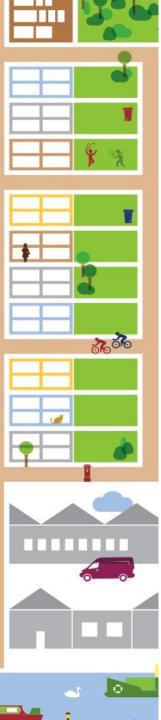


Mandate for change

District Heating Network with a potential geothermal heat source

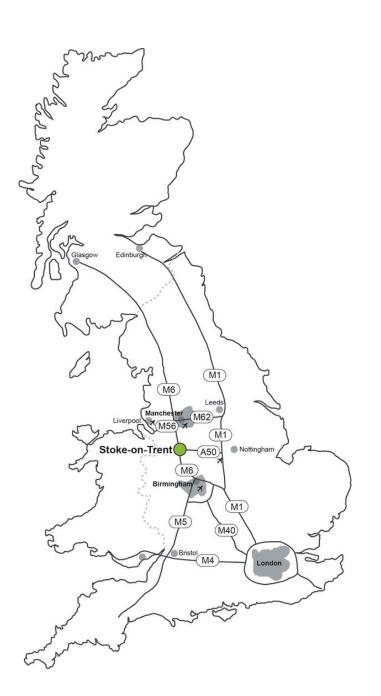


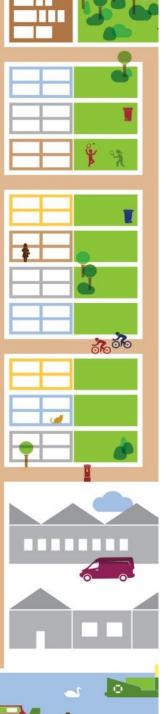


Stoke-on-Trent

Connected Stoke

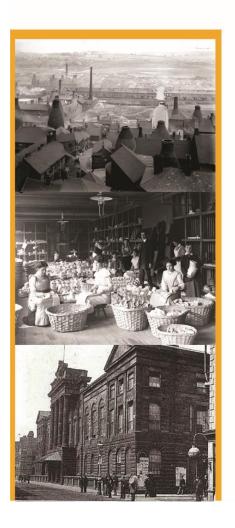
Railway network Motorway network 4 airports – 1 hour

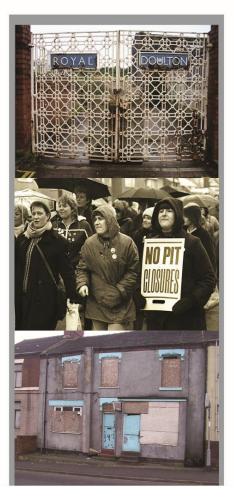




Stoke-on-Trent

The three lifetimes







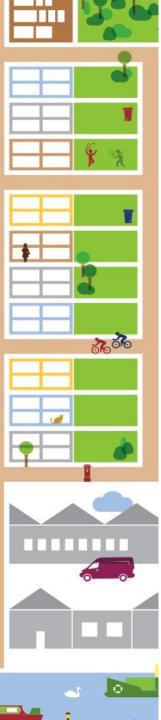


Vision

Stoke-on-Trent Energy

The city council sees Stoke-on-Trent becoming a leading city for the production of decentralised energy.

The city council aims to develop local energy to ensure security of supply for our businesses and community, and to provide insulation from the wider international supply market. This is to be at prices that are predictable to encourage inward investment and affordable in order to address fuel poverty.

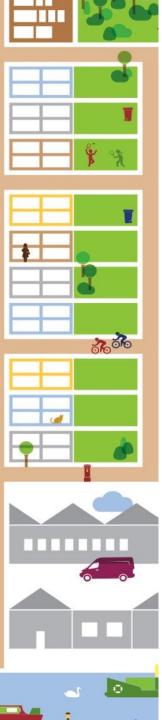


Background

Nationally, after **power generation**, the next largest potential contributors to energy/carbon savings are domestic property and public sector buildings

EU roadmap, requires a **40% domestic carbon** reduction by 2030

Space heating represents **67%** of the energy for a typical domestic property

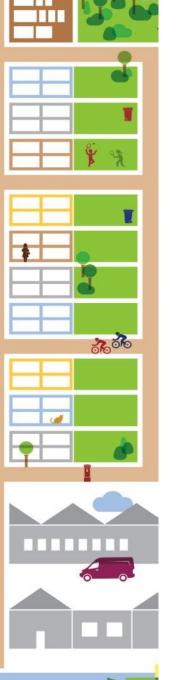


What will make a difference?

District heat schemes can help protect consumers against rising fossil fuel prices, provide significant carbon reduction opportunities and bring significant health benefits by providing:

secure, price predictable, low carbon heat

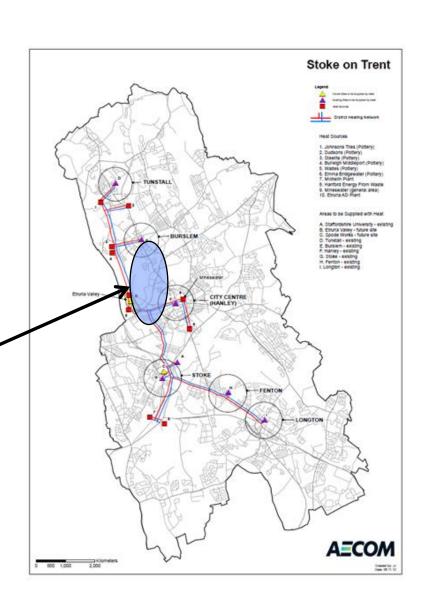
But have high upfront capital costs need to focus not only on ROI but CO², local air quality/needs, local and wider legislation so designs are pragmatic a trade off against environmental and economic impacts.



City Deal, a strategic approach

Total current heat demand in City Council area = 1907GWh from DECC National Heat Map

Identifiable useful heat load in primary area identified is **170GWh p.a.** 9% of total city heat demand.



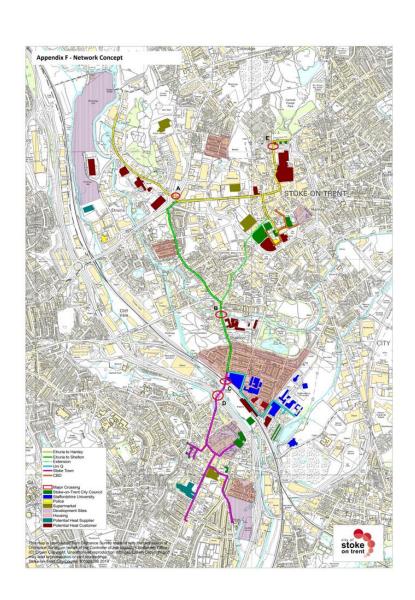


Demand led development

Potential demand identified along the route of the City Centre Spine

To make the project viable for the first geothermal well 45 GWh p.a demand is required.

An anchor load of 31GWh can be provided by the public sector.





Heat?

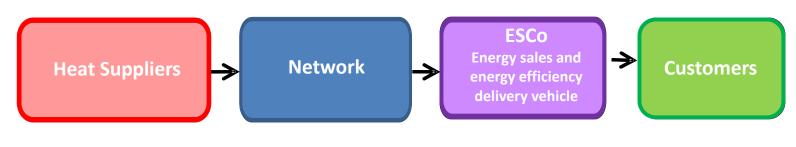
Clay and Coal

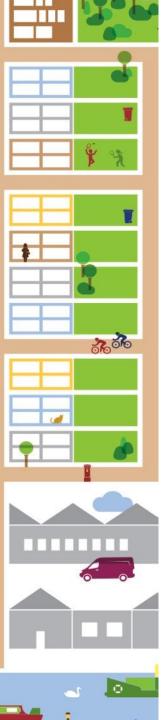




A whole system DHN scheme

- 1. Heat Suppliers
- 2. Network
- 3. Energy Supply Company (ESCo)
- 4. Customers





Addressing market failure

Economic decline



Energy policy?

State Aid......

Patient money?



What's the role of SoTCC?

Heat Co(s)

Heat suppliers growing over time to match demand:

- Geothermal
- W2E?
- 3

Thermal Purchase
Agreement(s) (TPA) to
supply heat into network
from a variety of sources
subject to commercial
constraints via open
market competition(s)

Network Co

11km pipework infrastructure funded by the City Deal, SoTCC owned asset

City Deal £19.75m

ESCo

Private sector investment in connection and sales

Customers

Lease or licence of network to ESCo, Potential for JV partnership subject to economic modelling work and ability of city to invest, procured via open market competition

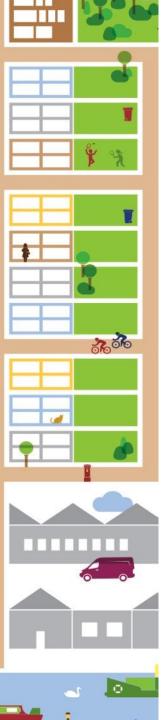


Stoke-on-Trent Scheme Concept

The City Council has secured a grant funding option of £19.75m to invest in the provision of the required energy infrastructure to enable the realisation of the economic, social and environmental benefits.

This will lever an estimated £28.25m of private sector investment required to complete the project.

Economic benefits	Social Benefits	Environmental Benefits
• £99.72m	• £6.13m cost saving	• 11,695 tonnes of CO2 per annum
• 210 direct jobs	for domestic heat	saved valued at £39.6m
• 1350 indirect	• 400 houses and 578	
safeguarded and	flats taken out of fuel	
created jobs	poverty	



Thank you for your attention

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