



# Heat Networks to Achieve Low Carbon Developments

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## **Presentation Overview**

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- SSE background
- What is our target market for heat networks?
- What is the ESCo approach?
- How do the finances work?
- Customer service – award winning

## SSE Group Profile

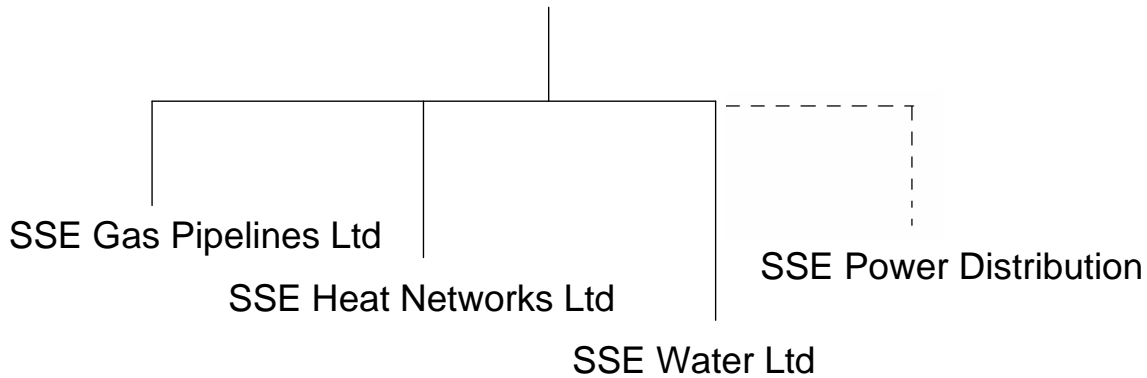
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- FTSE 30
- Energy-related businesses:
  - generation, transmission, distribution, supply of electricity
  - storage, distribution and supply of gas
  - telecommunications
  - contracting
  - home services
  - multi utilities

## Sustainability

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- Largest renewable energy generator in UK
- In excess 2,000MW capacity: hydro, wind, biomass
- Supply & install renewable technologies
- Invest in new technologies
- Decentralised energy (heat, cooling, power)



- Long Term Contracts 25 to 40 Years
- Capital investment to date of £50million

## Our CHP Portfolio

- SSE's portfolio of small CHP, 20 sites:
  - Hospitals
  - Leisure centres
  - Hotels
  - Glasshouses
  - Residential / Commercial
- SSE provides a complete package: all elements of O&M and customer service, risks (technical, energy market, customer debt)

## Target Market for Heat Networks


- New build property developments
- Typically 400 residential units plus
- Developers with some form of obligation via the planning system
- It is rare for heat networks to be installed for “green reasons” alone

## Residential / Commercial ESCos

- **Royal Arsenal, Woolwich.** Phase 1, 2 and 3 with 450, 290 and 250 units respectively, served from one energy centre. Berkeley Homes.
- **Merchant Square, Paddington.** 200 units and 25,000sqm commercial. At full build-out 850 units and 50,000sqm. European Land & Property
- **Orchard Village, Havering.** Four phases totalling 550 units. Old Ford Housing Association
- **Haggerston and Kingsland.** Two adjacent sites, separated by canal. 450 and 350 units respectively. London and Quadrant.


## SSE Responsibility

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- Plant in the energy centre
  - Heat mains to buildings
  - Heat distribution within buildings (risers & laterals)
  - Hydraulic interface units for residents
  - Heat exchangers / substations for commercial
  - Heat meters & data collection systems
  - All aspects of O&M
  - Customer service (and debt)
  - Replacement of plant (an account held on trust)
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## Approach to Design & Build

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- Flexible approach according to Client's commercial and organisational needs.
  - Design, build and operate contract directly with Principle Contractor / Developer
  - Design input (to client's M&E Engineers), supervise/monitor build/commissioning, adopt
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## Financial Model

- Revenues from fixed & variable charges for heat, export of electricity, Renewable Heat Incentive (RHI), feed in tariff.
- SSE responsible for all fuel costs, O&M costs, metering, customer service etc.
- Our capital contribution is based on discounted net revenues over 25+ years term (flexible)
- Model shared with Developer, to inform negotiation of commercials

## Our Heat / Cooling Charges

- Principle for commercial and residential: our energy charges deliver a saving versus conventional
- Comparison takes all energy purchase, O&M, replacement costs into account.
- Charges have three components:
  - Variable Charge (metered), based on gas tariffs
  - Fixed Charge – indexed to RPI
  - Capital Replacement Fund Charge – RPI

## SSE Customer Service

- 10m customers – electricity, gas i.e. regulated
- Consistently ranked best-in-sector in surveys, such as USwitch.com and JD Power
- SSE sign up to and deliver Guaranteed Standards



## Energy Strategy

- Single CHP, heat led (no heat dumping)
- Sizeable thermal store, to allow optimal running from commercial & operational perspectives
- Phased install of plant (cashflow)
- Single energy centre (minimise capex, fixed costs)
- Simple, robust systems
- Focus on reduced DH losses
- Focus on maximising  $\Delta T$
- Renewables – possibilities are PV, wood pellets, bio-methane, ground source heat pumps, other?
- Flexible approach