

Michael King

Associate

**Combined Heat & Power Association
Chairman**

**London Energy Partnership
Community Heating & CHP Taskgroup
Chairman**

**Aberdeen Heat & Power Co
Chairman**

Solent Sustainable Energy Ltd

Energy Services Companies

Energy Services Markets



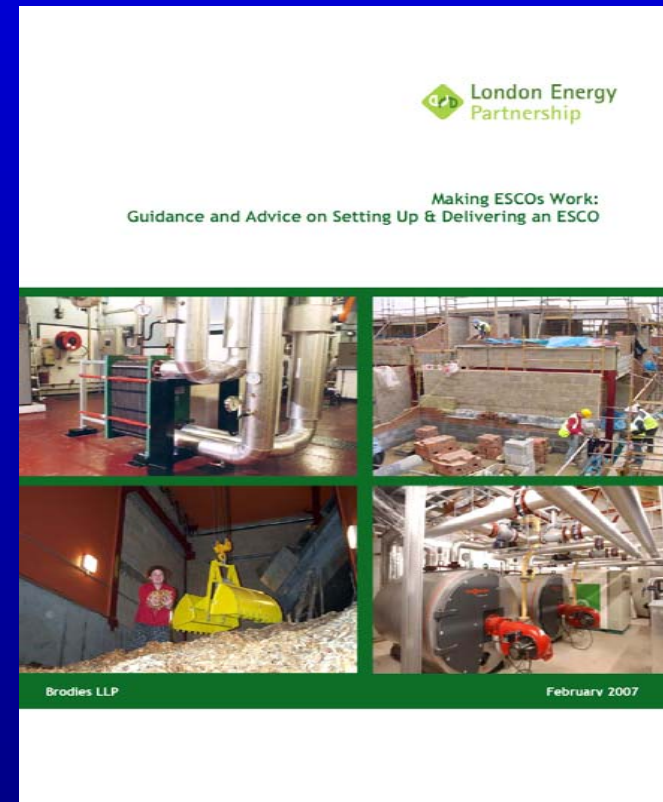
Energy Services Companies

No clear definition of the term. Generally used to describe an entity established to deliver:

- energy efficiency
- energy savings
- sustainable energy
- affordable warmth
- carbon savings

Need not be a company formed and incorporated under Companies House. Maybe an industrial and provident society, trust or even an unincorporated body. But usually a company limited by shares or a company limited by guarantee.

www.lep.org.uk



Energy Services Companies

Can be:

- wholly public sector
- public sector driven with private sector design & build
- public sector but procured and operated by private sector but not on EPC principles
- public or private sector and operated on EPC principles
- private sector driven - contract energy management

Structure will be determined by the attitude of the host organisation to risk.

EPC - Energy Performance Contracting

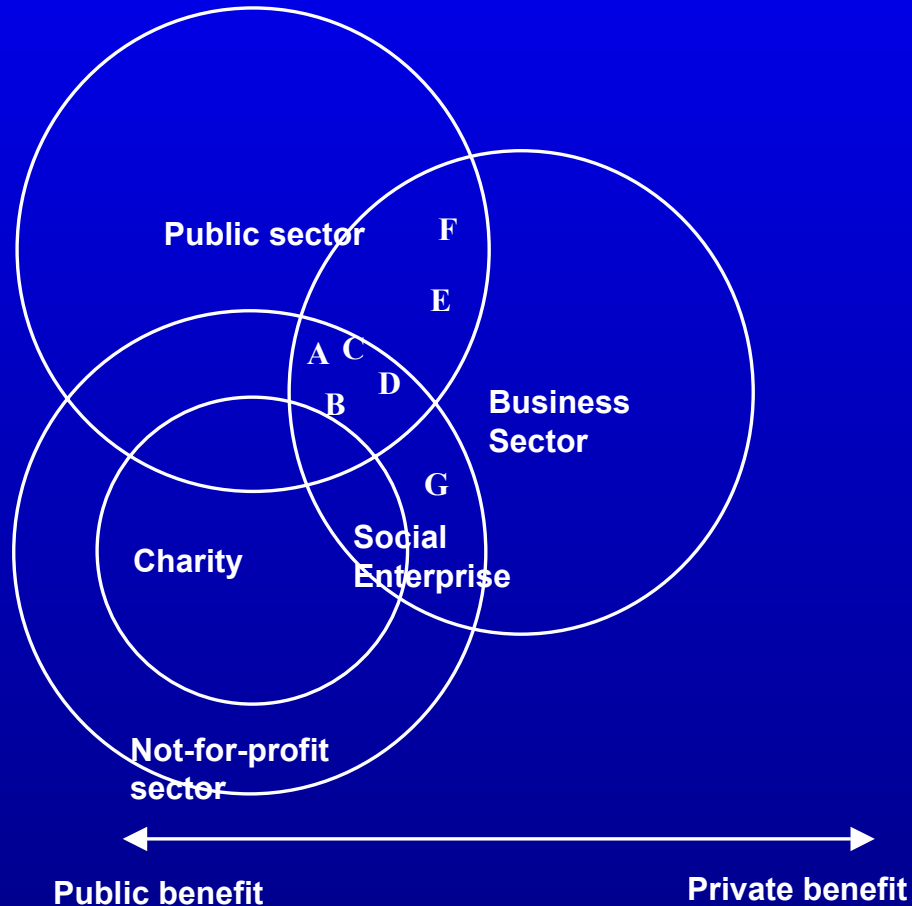
ESCO's in UK

- Southwark - - entirely in-house
- Aberdeen - - arm's length not-for-profit company limited by guarantee but embedded within Council
 - private sector involved in design and build
 - light touch
- Wick - - modelled on Aberdeen but has private sector partner
 - contains EPC output specification
 - based on biofuels
- Southampton - - modelled on Aberdeen
 - Millbrook - - private sector design, build operate
 - partial private sector finance
 - greater transfer of risk
 - based on biofuels

ESCO's in UK

- Southampton - Company limited by shares
City - owned and operated by Utlicom
- joint co-operation with City Council
- Barkantine - Company limited by shares - owned by EDF
- appointed by LB Tower Hamlets after tender process
- PFI for energy services
- Woking - revolving fund within Council
- set up Thameswey Ltd to be contractor
- TW sets up TW Energy private/public joint venture
- private wire network
- Titanic Mill - private development
- Set up Mill Energy Services Ltd - co limited by shares
- will be transferred to residents
- owns, operates, maintains system

ESCO Structures



- A Southwark
- B Aberdeen/Wick
- C Woking
- D Southampton Millbrook
- E Southampton City
- F Barkantine
- G Mill Energy Services

Source: London Energy Partnership
www.lep.org.uk

Public/Private Sector ESCO Spectrum



Source: London Energy Partners
www.lep.org.uk

Aberdeen multi storey blocks



Aberdeen City Council

- **Feb 1999 adopts Affordable Warmth Strategy**
 - Policy to target the least thermally efficient homes
 - Found to be multi storey flats
- **Commissioned study of all 59 multi storey blocks**
 - Structural survey
 - Ground conditions survey
 - Energy issues - affordable warmth, reduced CO₂ emissions, affordable to Council, speedy delivery
- **Will provide a strategy for future investment in these blocks**

Aberdeen City Council

- **Interim report:**
 - **Focused on one cluster of 4 multi storey blocks**
 - **Stockethill cluster**
 - 19 storeys
 - total of 288 flats
 - electric storage heating
 - precast panel, cavity construction
 - **Considered range of options**
 - **Recommended CHP**

Aberdeen City Council

- Council had the technical answer but how to do within financial constraints?
 - Appointed specialist CHP consultant
 - Established independent, not-for-profit company
 - Company to raise capital
 - Contract between Council and company
 - Business Plan and cash-flow forecast
 - Enables the Council to spread capital payments over a number of years
- *Without external funding Council could only afford one development every 10 to 12 years!*

Stockethill Cluster

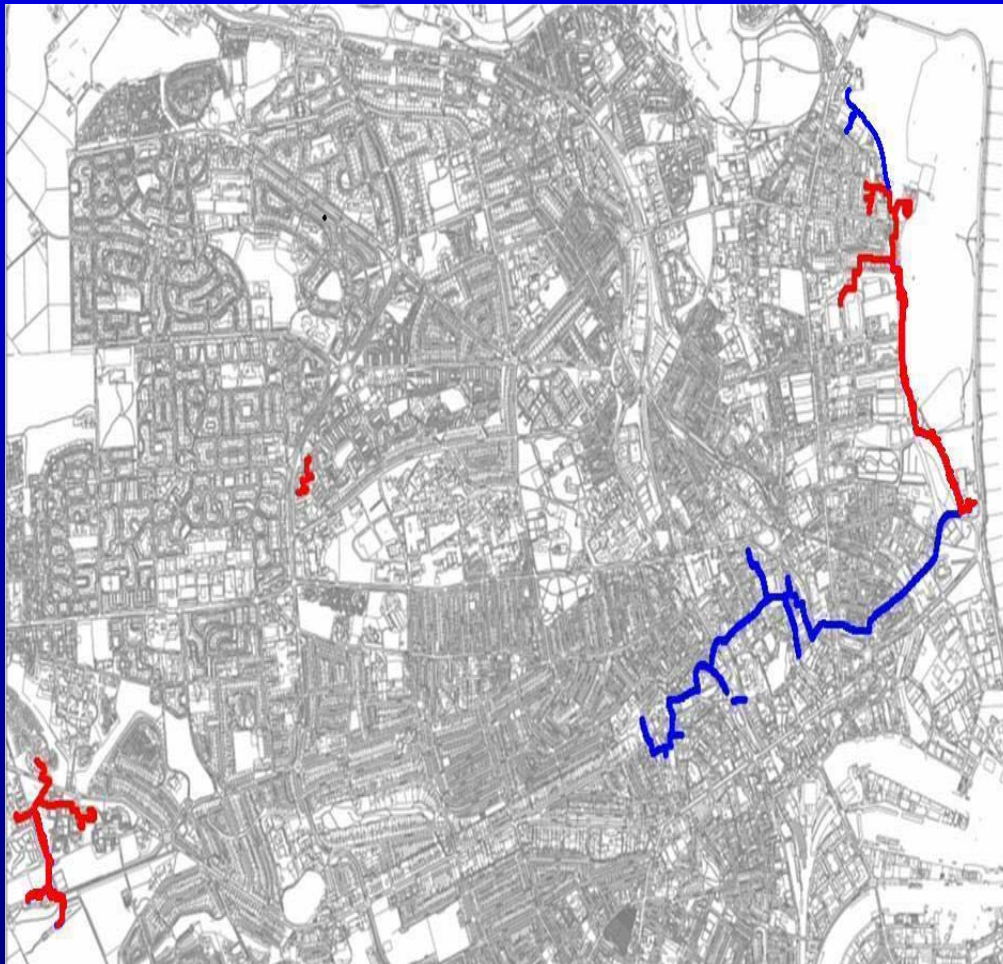


- Total project cost - £1.6 million
- Community Energy Programme
 - £730,000 grant for capital costs
 - **CHP plant**
 - **Distribution system**
 - **Internals**
- Bank financing of up to £1 million based on income from Council of £215,000 per annum
- Energy Efficiency Commitment (EEC) money to offset costs of heating systems within leaseholder flats.
- Surplus generated by independent company will provide capital to start work on next cluster

Aberdeen Heat & Power Co

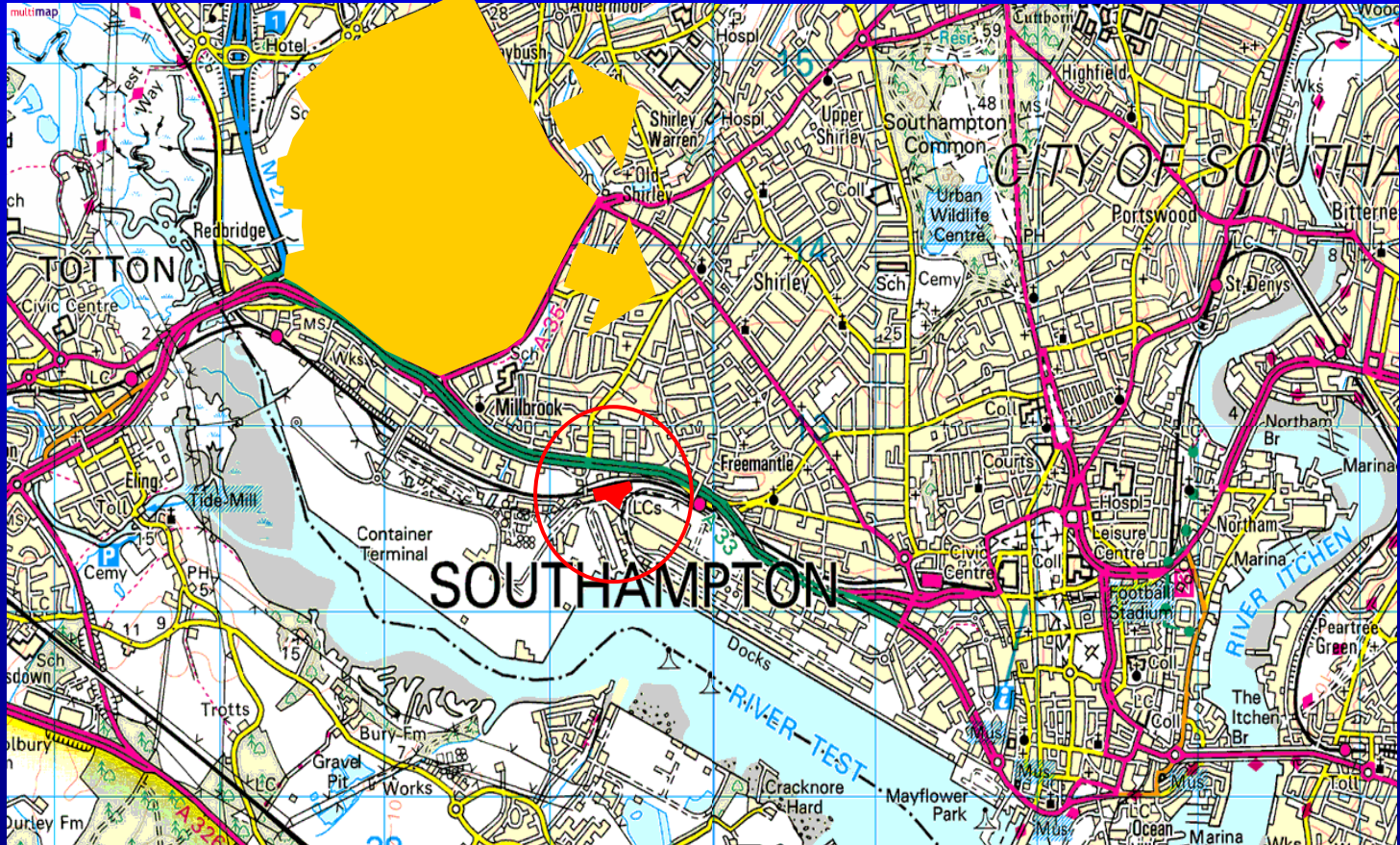
- **Arms length not-for-profit co limited by guarantee**
- **Membership structure instead of shareholders**
- **Sales arrangements**
- **Consultation on resident preferences**
 - Flat rate charge for heat
 - Tenants – heat with rent
 - Owner-occupiers – direct debit established
- **Electricity sales – via consolidator**
 - to residents
 - to housing association
- **Development of further projects**

Future Development

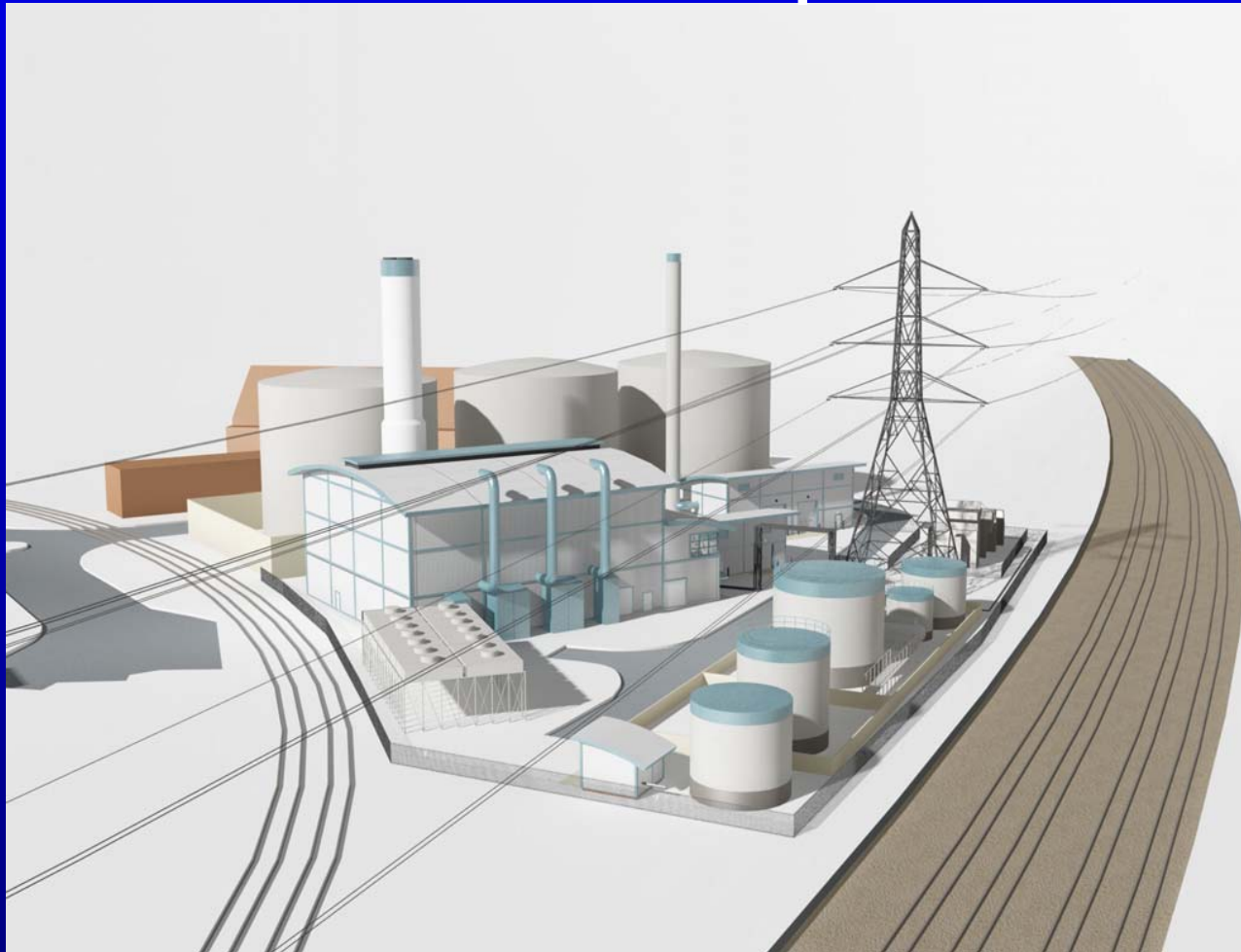


- Hazlehead completed - (4 blocks 180 flats, 50 sheltered units + school with swimming pool)
- Extension to Hazlehead sports facility completed
- Seaton Phase 1 (6 blocks - 500 flats) completed
- Seaton Phase 2 - planned, incorporating biomass plant
- Link to regional sports facility completed
- Beachfront complex (ballroom, i rink, leisure centre) completed
- City centre network to link blocks of flats planned

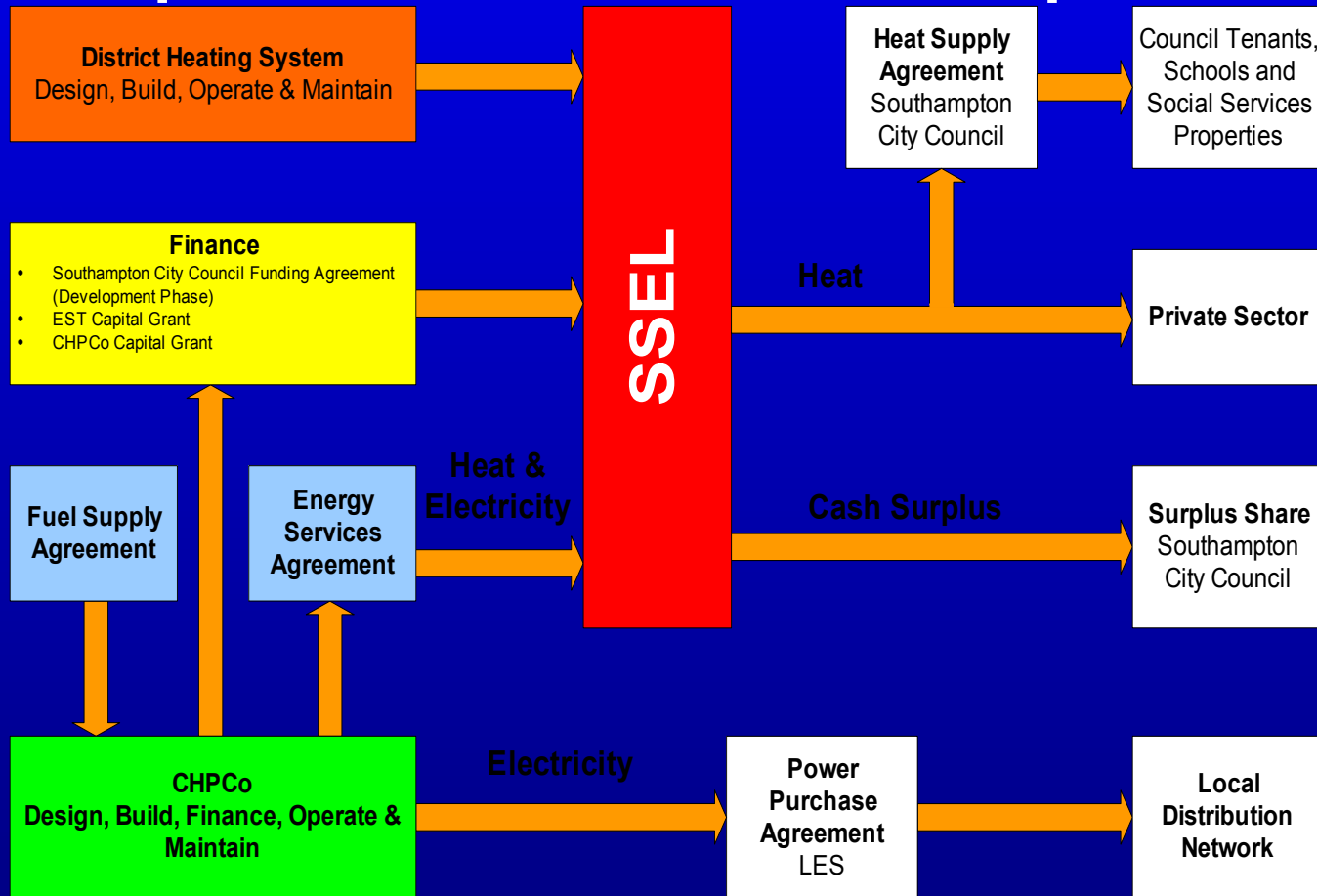
Solent Sustainable Energy Ltd



Proposed Combined Heat & Power Plant Port of Southampton



Solent Sustainable Energy Limited (SSEL) Principle Commercial Relationships



What does the scheme comprise?

- 50 MWe reciprocating engine renewable CHP plant
- Renewable bio-fuel: straight vegetable oils
- Natural gas fired back-up boilers
- 50 km district heating network
- Total project cost: £55m
- Finance:
 - Private Sector : CHP and DH network
 - Southampton City Council: development and dwelling conversion
 - SEEDA £5m: development and dwelling conversion
 - EEC £1.5m: DH network

What are the benefits?

Social

- Affordable heat for end-users - Millbrook and Redbridge are amongst the most deprived wards in the country
- Almost 1600 households removed from fuel poverty
- Over 600 homes brought up to Decent Homes Standards.
- Plentiful heat at a fixed annual cost – provides for properly heated homes
- Improved health and well-being

Environmental

- CO₂ emission reductions – 170,000 tonnes per year
- Potential annual CO₂ emission savings up 250,000 tonnes once available heat is fully utilised
- Contributes 77% to over 100% of Southampton City's CO₂ emission reduction target

Conclusions

- **What has been learnt?**
 - **Approach strategically**
 - **Best-value approach - whole life cycle costs**
 - **Need external specialist assistance**
 - **Needs internal champion to drive the process**
 - **Arm's length company or ESCO enables focussed management and drive**
 - **Gives accelerated progress**
 - **Opportunity for external financing**

Contact

Michael King

Associate

Combined Heat & Power Association

35/37 Grosvenor Gardens

London SW1W 0BS

Tel: 020 7828 4077

www.chpa.co.uk