

Financing Energy Efficiency: Brussels Conference

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LONDON
ENERGY
EFFICIENCY
FUND



EUROPEAN UNION
Investing in Your Future
European Regional
Development Fund 2007-13

AMBER
GREEN
Sustainable Capital

Amber – Sector Focus



Amber has the skills and expertise to expand its current capabilities into markets with similar characteristics.

It has within its portfolio over 120 projects and ~£8bn of assets under management.

Public infrastructure



New energy markets



Specialist real estate



Selected opportunities

- Expansion of PPP globally as a delivery method for public infrastructure
- Development of cities/local infrastructure
- Growth of new markets (eg. US)

- **Energy Efficiency (inc EVs)**
- **Decentralised Energy**
- **Renewables**
- **Storage**

- Specialist care homes
- Student accommodation
- PRS
- LA Housing

Drivers of opportunities

- Population growth
- Urbanisation
- Decarbonisation
- Ageing infrastructure
- Correlation of infrastructure investment to economic growth

- Increasing cost of energy to consumers
- Increase in energy demand globally
- Increased domestic and corporate focus on energy efficiency to reduce cost
- Decarbonisation

- Rising demand for residential accommodation generally
- Age demographic shows need for housing solution for elderly
- Forecast government spending
- Government asset realisations

Amber's competitive advantage

- Long track record
- Strong relationships with contractors and service providers
- Financial structuring expertise

- Existing energy efficiency funds
- Relationships with renewable developers
- Ability to cross sell with existing business

- Strong relationships with public sector
 - NHS Lift Framework
 - BSF LEP Frameworks
 - PPP clients across the portfolio
- In-house skills to develop and manage

UK Energy Efficiency Market Development

- Government / European Policy and Legislation
- Incentives & CRC
- Rising Energy bills
- Obsolescence
- Financial savings inc: FM and lifecycle
- **ESCO / EPC market**
- Frameworks
- Private / Public / European funding
- **Refurb / lifecycle**
- **More and better EE data / case studies**
- Improved M&V
- New technology
- Passionate market!!



- Apathy
- Energy cost a small %
- Complexity / Technology issues
- Lack of standardisation
- Payback – too high and too wrong!
- (Public sector) ‘red tape’
- Financing (borrowing rules, risk appetite)
- Small deal size
- **Refurb / lifecycle**
- Risk-Return disconnect
- **More and better EE data / case studies**
- Transaction costs
- **ESCO / EPC market**
- **Principal – Agent issue**

The Benefits of EE (*official EU view*)

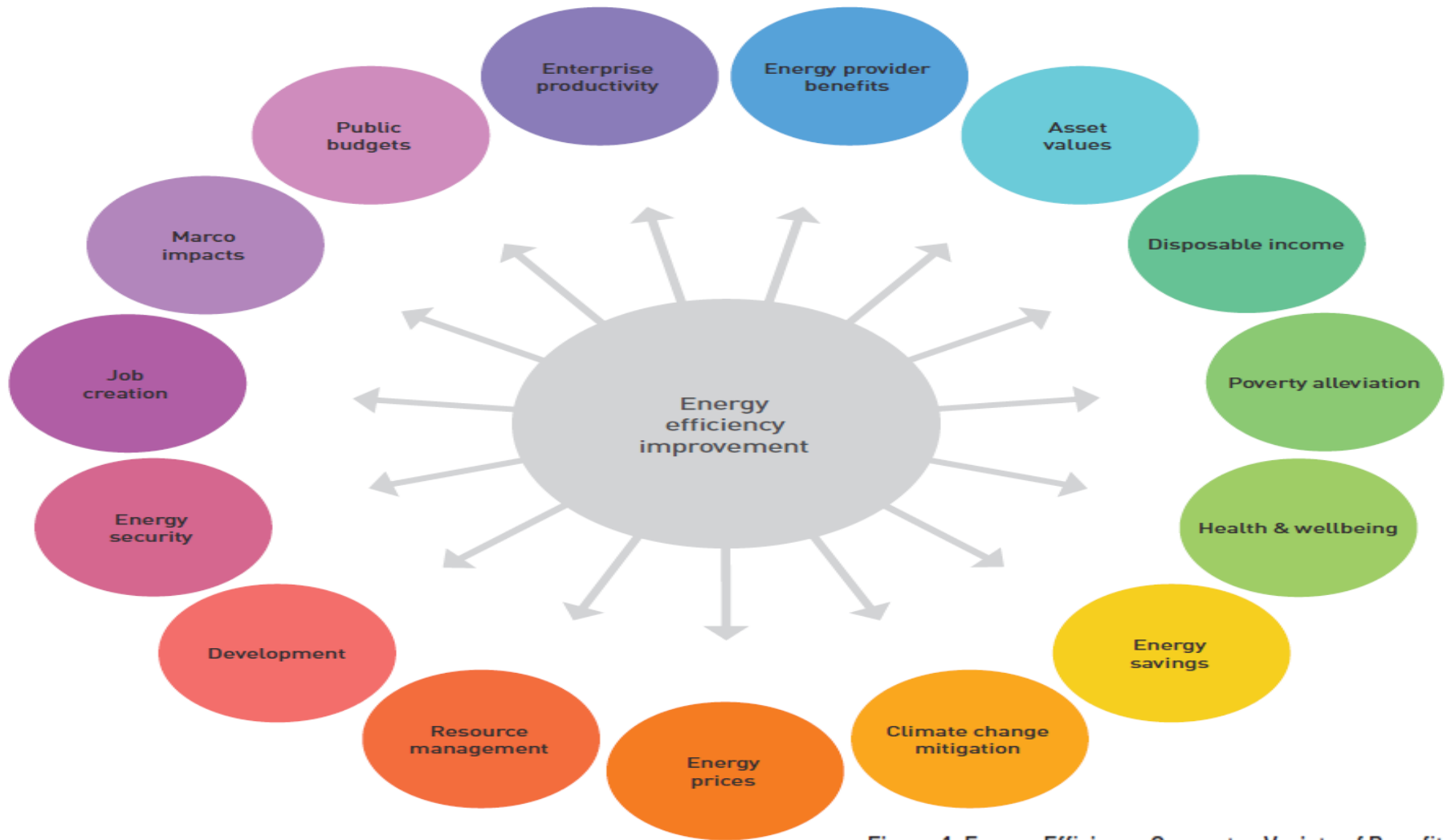


Figure 1. Energy Efficiency Generates Variety of Benefits (IEA 2014)

LEEF – A Success Story?

Backed **7 major** carbon saving projects



Invested **throughout the Capital** (76 buildings across 9 London Boroughs)



Supported **1,600 construction and operational jobs**



Committed **£67 million** of capital



Saved 20,000,000 kWh of **energy**; the equivalent of **1,100 homes**



Reduced annualised CO2 emissions by 35,000 tonnes; equivalent to taking **32,000 cars off the road**



Mobilised £350m external finance through our capital



Case Studies – LEEF: THE REFURB

£20m – Tate Foundation

- ❖ Off balance sheet to the Tate Gallery
- ❖ Flexible, low cost financing solution, using public and private sector capital
- ❖ Forecast energy savings of 26% p.a. (7.7GWh)
- ❖ Forecast CO2 savings: 2,500 tonnes
- ❖ Carbon neutral new-build extension
- ❖ Energy Conservation Measures include: pioneering transformer waste heat recovery; River Thames bore-hole cooling; passive measures to fabric; ‘gallery standard’ lighting, metering and controls



Case Studies – SPRUCE: BIOMASS IN THE CITY

£5m – Cube Housing Association

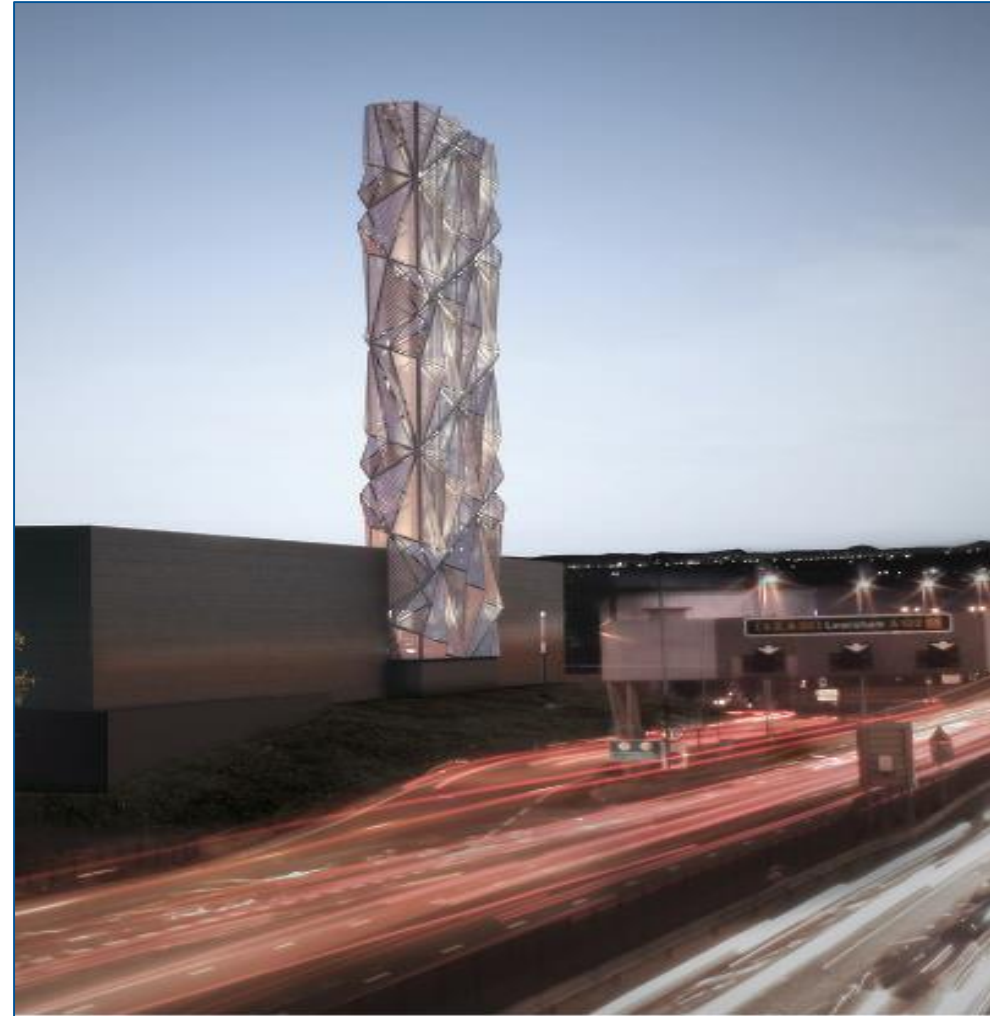
- ❖ Financing of a DE and building fabric improvement project for all the multi-story stock at Cube's Broomhill and Gorget Estates (702 properties)
- ❖ Substitution of existing electric systems with a wet network centrally fuelled by a gas & biomass mixture
- ❖ Additional support comes from a British Gas ECO grant of £5.6m
- ❖ Highland Wood Energy provides the O&M and feedstock
- ❖ Supply side CO₂ reductions (predicted to save 2,000 tCO₂ p.a.) plus demand side ECMs; with significant fuel poverty alleviation



Case Studies – LEEF: DISTRICT HEAT & POWER

£14.5m – Greenwich Peninsula ESCo

- ❖ Loan to fund an energy centre and district heat network serving the Greenwich Peninsula regeneration
- ❖ 15,000 residential units and 3,500,000 sqft of commercial space to be served by the CHP and heat network
- ❖ Significant leverage of private sector investment
- ❖ Substantial (20,000 tonnes p.a.) carbon savings over scheme's life
- ❖ Regeneration of the 190 acres site will take 20 years; costing over £6bn
- ❖ Largest public sector land development currently under construction in the UK



The Investor Confidence Project

- The ICP is an EC Horizon 2020 project that aims to unlock access to finance by standardizing how energy efficiency projects are developed, documented and measured

- **On Site Power Generation for a London based private sector office**
- ESCO pays for and installs a CCHP
- Off-taker purchases power at less than the grid price
- Payback period longer than with which banking market is comfortable
- Refinancing risk too great for the ESCO and Offtaker
- **LEEF will address market failure given assurances on system performance and savings**



<http://europe.eepformance.org/>

What's Coming Next?



Contact Info

For further background / general information:

www.leef.co.uk

www.ambergreenspruce.co.uk

www.amberinfrastructure.com

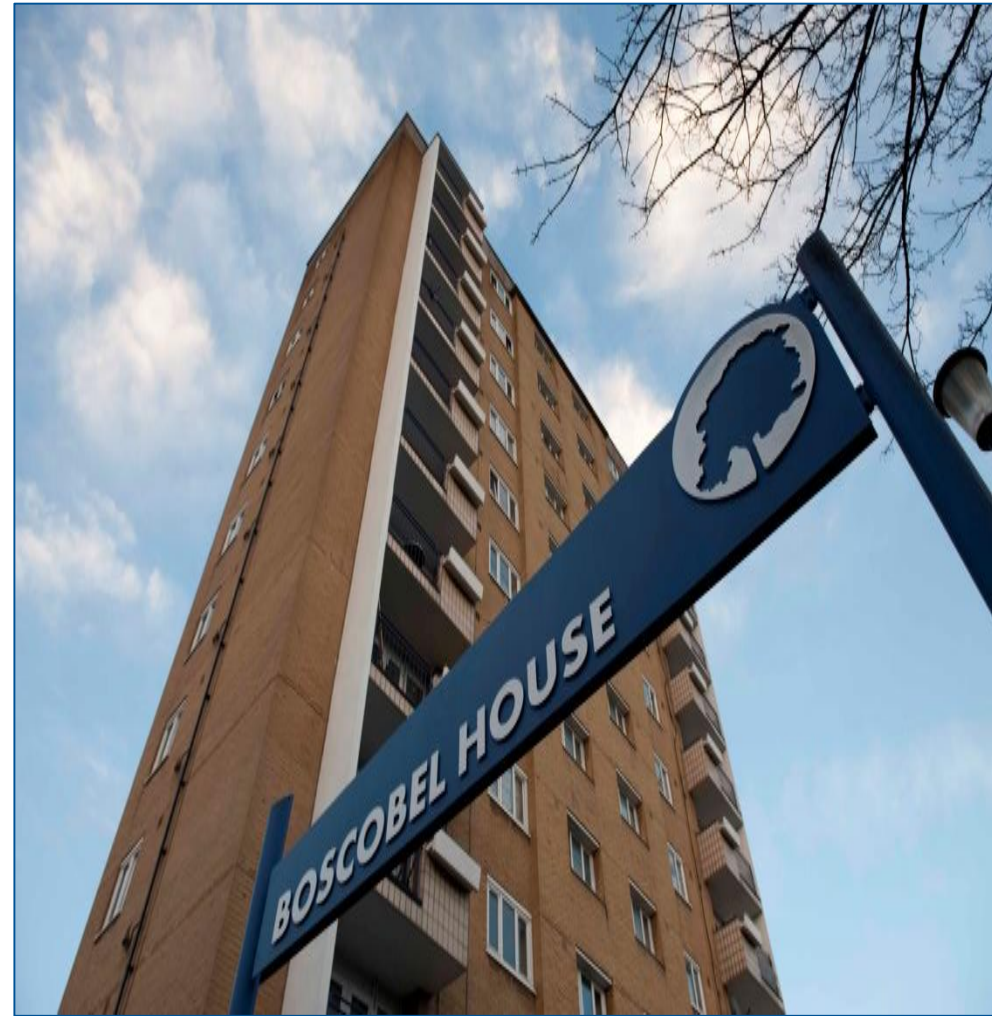
For project / funding specific information:

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Case Studies – LEEF: THE FUEL SWITCH

£4.6m – London Borough of Hackney

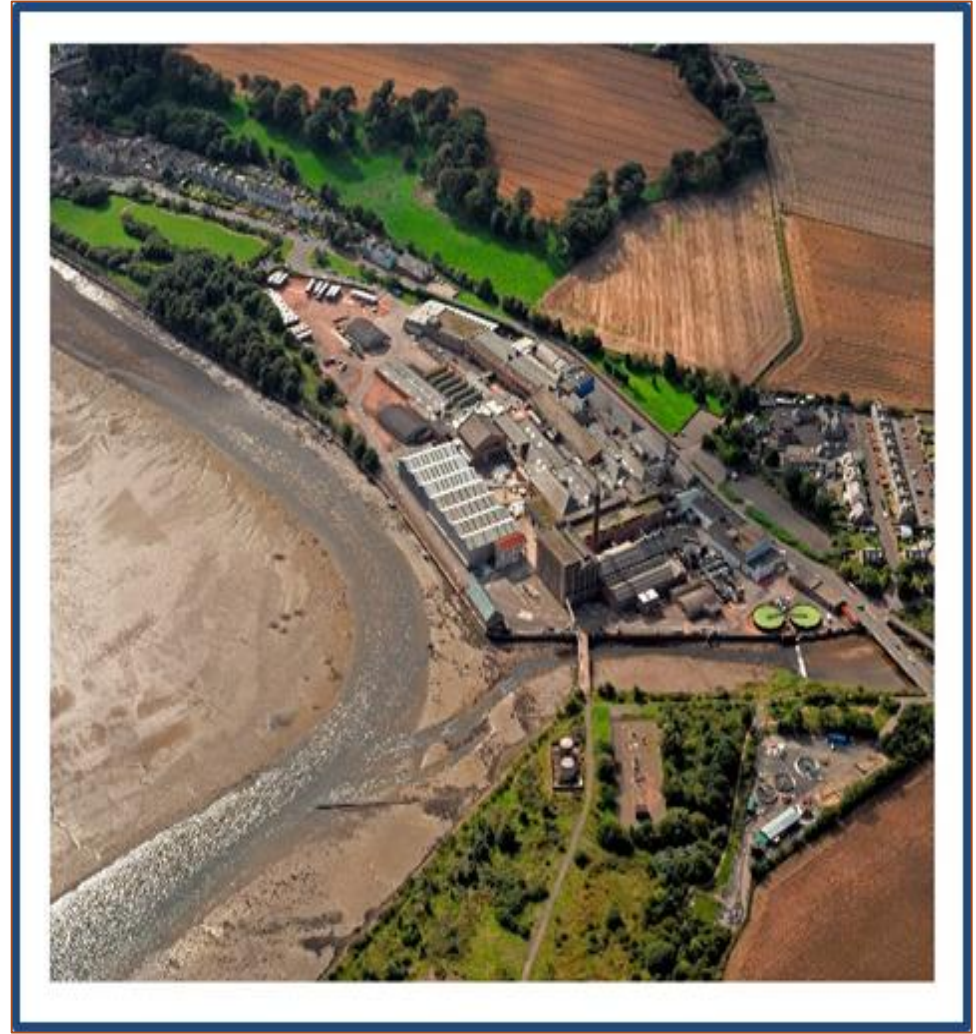
- ❖ Installation of a communal heating system in ten social housing blocks; significant fuel poverty alleviation
- ❖ Procured via the GLA's RE:NEW framework
- ❖ Provision of energy to 1,500 social housing tenants; average energy bill reduced by 56% (£980)
- ❖ Potential 40% CO2 savings due to fuel switch
- ❖ Private sector finance, in the form of Npower ECO grant; for domestic works
- ❖ LBH benefits from lower maintenance costs and O&M contract with ESCO



Case Studies – SPRUCE: THE UK'S LARGEST BIOMASS NETWORK

£11m – St Andrews University

- ❖ A facility to finance the Guardbridge Energy Centre, a new £25 million biomass plant and heat distribution network
- ❖ Additionally, a district heating network that will deliver heat and hot water to the western end of the town
- ❖ St Andrews intends to become the UK's first carbon-neutral HE body
- ❖ Savings of up to 8,500 tCO₂ p.a. by using locally-sourced wood stock from the Scottish forestry market
- ❖ Contractor Vital has stated that it is presently the largest project of its kind in the UK



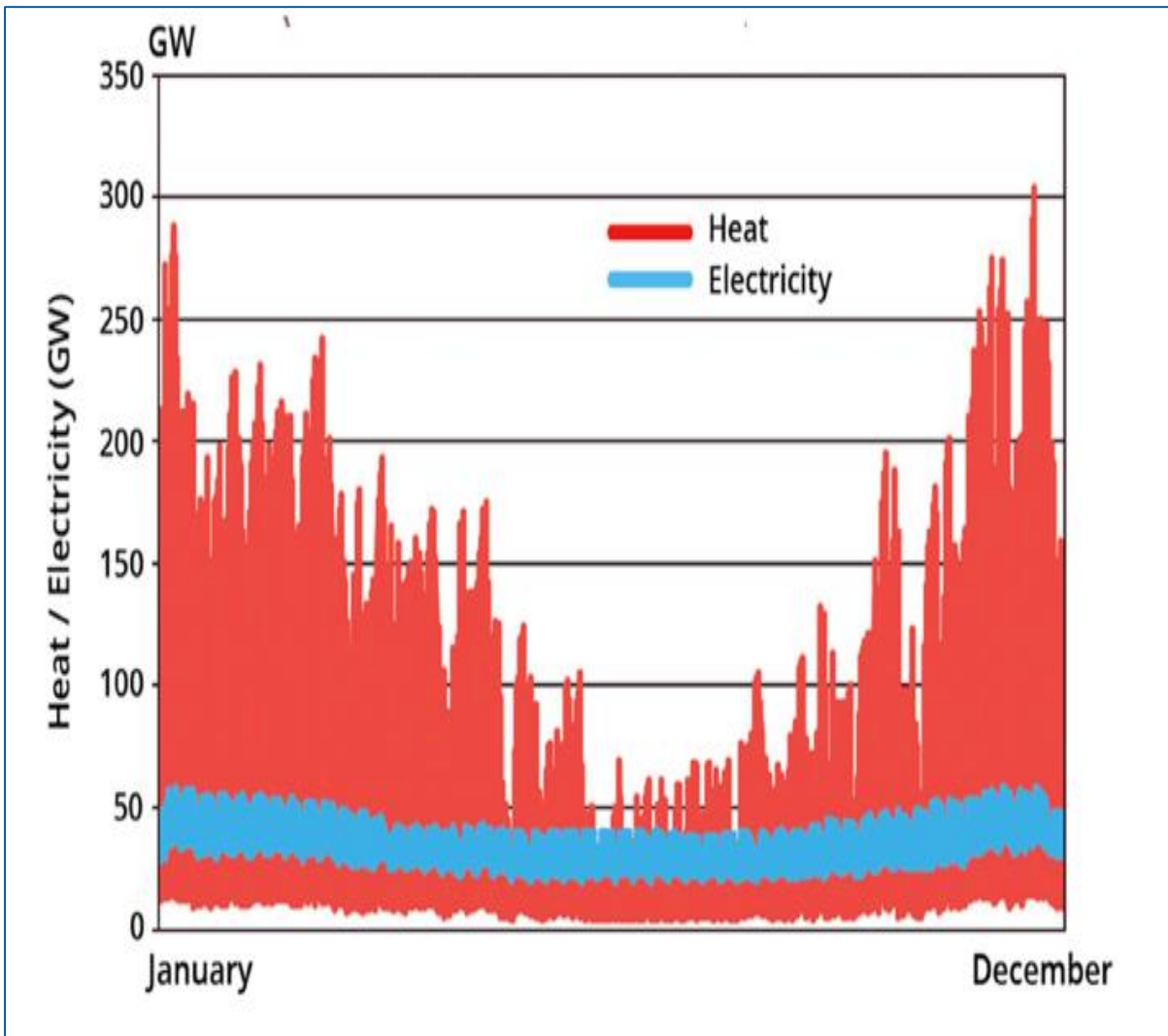
Case Studies – LEEF: THE DE SCHEME

£6m – London Borough of Enfield

- ❖ Seed-capital for a substantial, path-finding district heating network
- ❖ Waste energy from the Edmonton (EfW) Eco Park, plus additional heat sources, to serve over 10,000 homes and businesses
- ❖ First project in the UK to be ‘match-funded’ through collaboration between the EIB and a JESSICA Fund
- ❖ Potential 50% CO2 savings compared to standard alternative (8,000t p.a.)
- ❖ Project advised by DEPDU, the GLA’s Decentralised Energy Project Delivery Unit



The Case for Heat

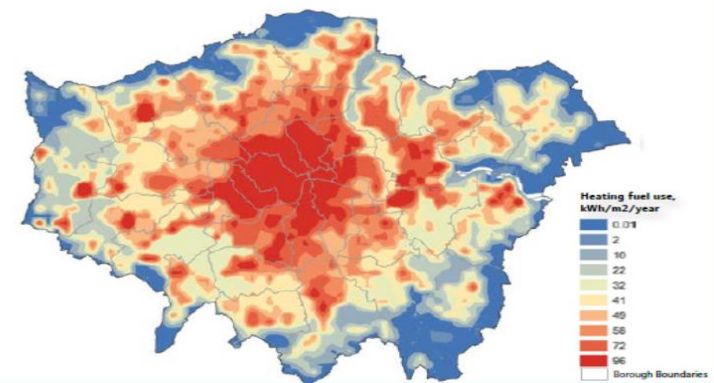


Peak Gas Demand

- 5x level if spread evenly over seasons
 - 12x the Summer max
- 6x current peak in electricity system

... allowing for the fact that this is changing!

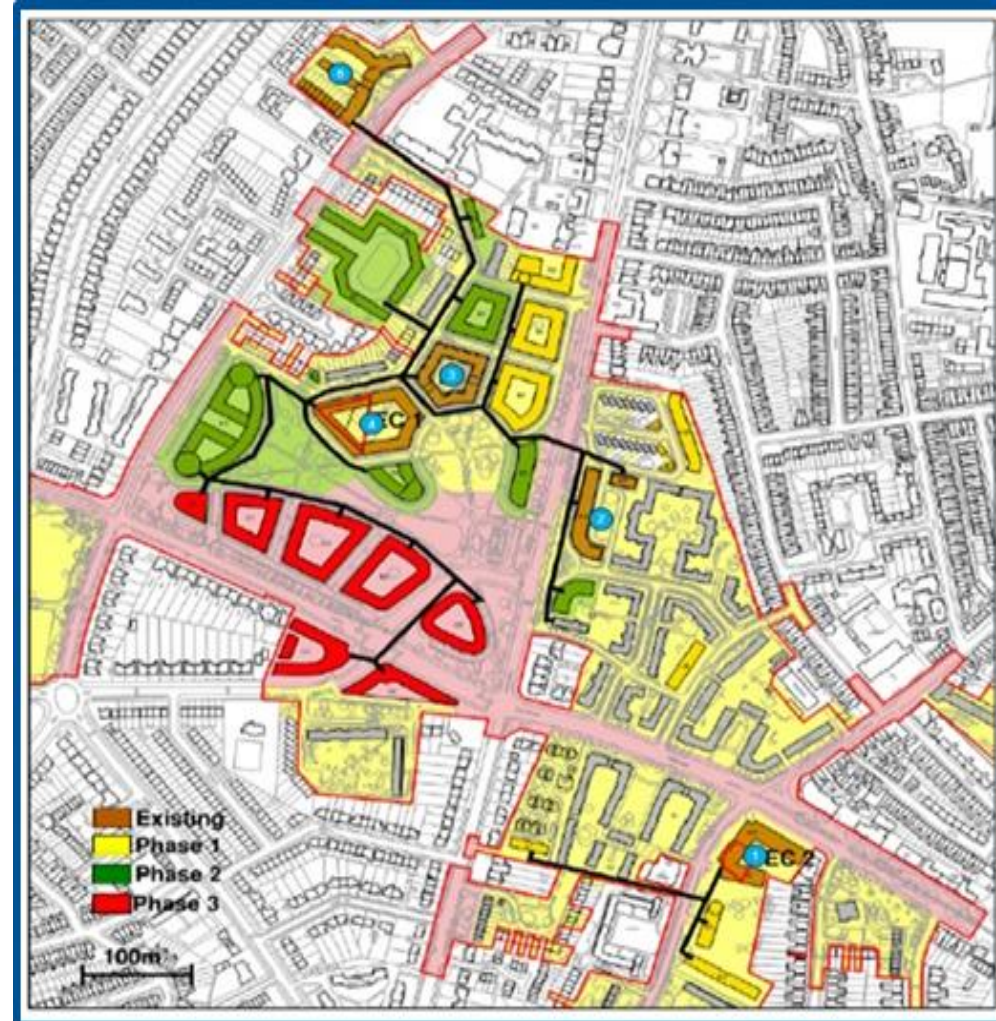
Map 5.1 Heat density in London (relative heat demand based on fuel use kWh/m²/year)



Case Studies – AMBER EQUITY: FULLY FUNDED ESCO

~£10m – Clapham Park Homes

- ❖ Heat network build out in phases to 2025
- ❖ Adoption + DBFO of a District Heating scheme at Metropolitan Housing Trust's estate at Clapham Park
- ❖ Amber selected as PB; projected Financial Close late 2017
- ❖ New SPV to be owned 100% by Amber; DBOM Contractor is Pinnacle Power
- ❖ Technical solution offers residents cost & CO2 savings compared conventional gas boiler
- ❖ Heat network designed to link in other (current and potential) heat offtakers



Case Studies – LEEF: THE ENERGY PERFORMANCE CONTRACT

£13.0m – St George's NHS Trust

- ❖ Installation of a CHP plant, remodelling of an energy centre and broad energy efficiency technology retrofit
- ❖ An innovative source of funding to an NHS entity proceeding through the Foundation Trust conversion process
- ❖ Delivered under an Energy Performance Contract with guaranteed energy savings
- ❖ Provides a long term DBOM contract to the hospital
- ❖ Expected to save 6,863t of carbon and over £1.2m p.a to the Trust



Case Studies – LEEF: THE HERITAGE BUILDING

£4.7m – Salters Livery Co

- ❖ A debt-financed project that will reduce energy consumption by 39%, across two sites: the Salters Livery Hall on the Barbican Campus and an office block on King William Street
- ❖ Improves the rental capabilities of the property
- ❖ Forecast CO2 savings: 592 tonnes
- ❖ One of the first refurbishments in London to reach a BREEAM “Excellent” standard
- ❖ Debt financing
- ❖ ECM upgrades to: lighting; building fabric; space/water heating



Case Studies – LEEF: THE FACILITY

£3.6m – London Borough of Croydon

- ❖ A low cost of finance loan to energy efficiency schemes being prioritised by the Council
- ❖ Over 30 separate buildings being extensively retrofitted, including: schools, libraries, social housing and civic buildings
- ❖ Forecast energy savings of 17% p.a.
- ❖ ESCO procured under the GLA's RE:FIT scheme, which includes the benefit of an energy savings guarantee
- ❖ Wider scheme may leverage European Investment Bank monies

