



MAYOR OF
LONDON'S ENERGY
EFFICIENCY FUND
supported by European Regional Development Fund

MAYOR OF LONDON'S ENERGY EFFICIENCY FUND (MEEF)

PREPARED FOR ROYAL BOROUGH OF KENSINGTON & CHELSEA

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AMBER
INFRASTRUCTURE GROUP

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European Union
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2. MEEF OVERVIEW

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AMBER

Amber is a leading equity investor, debt arranger and one of the largest independent investment fund managers in Europe.



INTERNATIONAL
PUBLIC
PARTNERSHIPS

SUBSTANTIAL TRACK RECORD IN UK LISTED INFRASTRUCTURE INVESTMENT

- Established in 2006, FTSE 250-listed infrastructure investment company
- Invests in long-term infrastructure assets with stable yields and returns
- Focused on availability-based infrastructure, including utilities and social infra

£2.4bn market cap



NATIONAL
DIGITAL
INFRASTRUCTURE
FUND

FIRST DIGITAL INFRASTRUCTURE FUND IN THE UK

- New investment fund dedicated to UK 'full fibre' infrastructure
- Established in partnership with HM Government following public tender
- First close in July 2017 with HM Treasury as cornerstone investor in the fund

£400m investment
target



LONDON
ENERGY
EFFICIENCY
FUND

FIRST DEDICATED ENERGY EFFICIENCY FUND IN THE UK

- Established in 2011 through the European Commission's JESSICA initiative
- Invested into energy efficiency and decentralised energy in London
- Funding provided by the EIB and Greater London Authority

£420m mobilised



SCOTTISH
PARTNERSHIP FOR
REGENERATION IN
URBAN CENTRES

LARGEST INDUSTRIAL/BUSINESS REAL ESTATE INVESTOR IN SCOTLAND¹

- Established in 2011 through the European Commission's JESSICA initiative
- Invested into CHP, district heating and regeneration across Scotland
- Funding provided by the ERDF, EIB and Scottish governments

Up to £94m of public
managed funds



MAYOR OF
LONDON'S ENERGY
EFFICIENCY FUND

APPOINTED TO MANAGE SECOND LONDON ENERGY EFFICIENCY FUND

- Appointed to manage a new low carbon fund with investment focussed on energy efficiency, renewables and decentralised energy
- ERDF funding provided by the Greater London Authority

£500m investment
target

AMBER
INFRASTRUCTURE GROUP

OVER £1BN OF ASSETS DEVELOPED OR UNDER DEVELOPMENT

- Developed or developing over £1bn of assets, including in specialist accommodation, sustainable energy and retirement living
- Preferred bidder on a number of communal heat networks

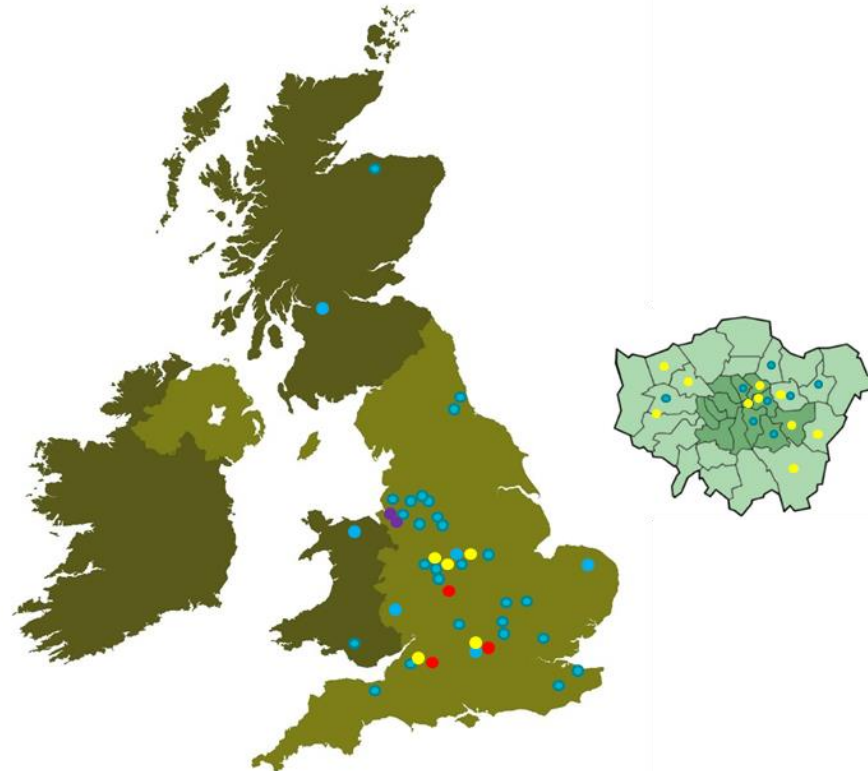
>£1bn assets either
developed or in
development

AMBER AND LOCAL AUTHORITIES

The extent of Amber's relationships with UK Local Authorities is illustrated in the map below.

United Kingdom INPP Existing Projects

- Building Schools for the Future Portfolio – 40 investments (96 schools)
- Tower Hamlets Schools
- 33 NHS-Lift assets
- Abington Police Station
- Bootle Government Offices
- Norfolk Police HQ
- North Wales Police HQ
- Strathclyde Police Training Centre
- Priority Schools Aggregator
- Liverpool Library
- Moray Schools
- St. Thomas More Schools
- Northamptonshire Schools
- Maesteg Schools
- Calderdale Schools
- Derbyshire Schools Phase 1
- Derbyshire Schools Phase 2
- Derbyshire Courts
- Hereford & Worcester Courts
- Henley on Thames Health Campus
- Balsall Common Assisted Living
- Chippenham Care Village



● Education ● Justice ● Public Accommodation ● Retirement / Care ● Health

Other Amber Assets

- UK Digital infrastructure
- Specialist Property:
 - Aged Living (public & private);
 - Care Facilities;
 - Specialist Health Facilities (e.g. step down); and
 - Build to Rent.
- Sustainable Energy
 - Decentralised Energy
 - Energy Efficiency
 - Battery Storage
 - Electric Vehicle Charging Infrastructure
 - Data Centres



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INTRODUCTION TO MEEF



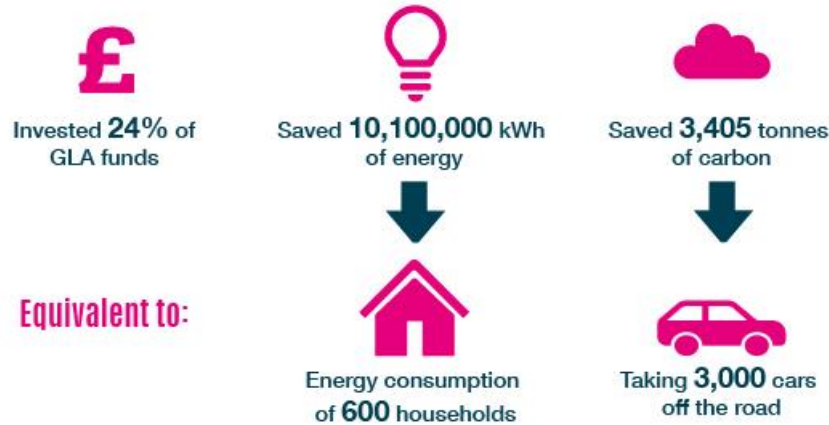
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- A new **investment fund** established by the **GLA** and managed by **Amber**
- A **flexible** and **competitive funding** source offering **debt** and **equity**
- A **long dated fund** to allow for payback periods up to **19 years**

MEEF progress to date



Sectors



Education (Higher & Further)



Registered providers



Not-for-profit



Health



Local authorities



SMEs

Technologies



Energy efficiency



Decentralised energy



ESCOs



Energy storage



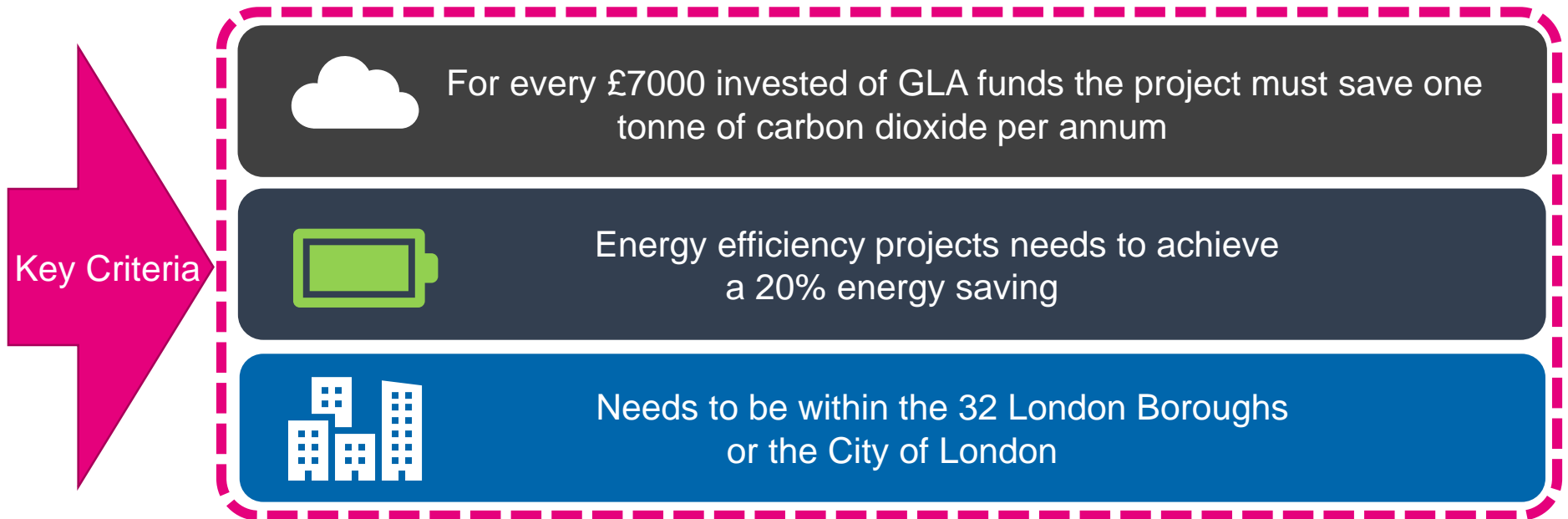
Small-scale renewables



Regeneration projects (with low carbon credentials)

Fund size	£500m
Investment	£1m+
Term	19 years
Funding	Senior/Mezzanine Debt and Equity
Key criteria	For every £7,000 invested, one tonne of carbon needs to be saved, and energy efficiency projects need to achieve a 20% energy saving

INVESTMENT CRITERIA



MEEF is **targeting investments** from **£3m to £20m** but will consider investments **£1m+**

THE ADVANTAGE OF MEEF



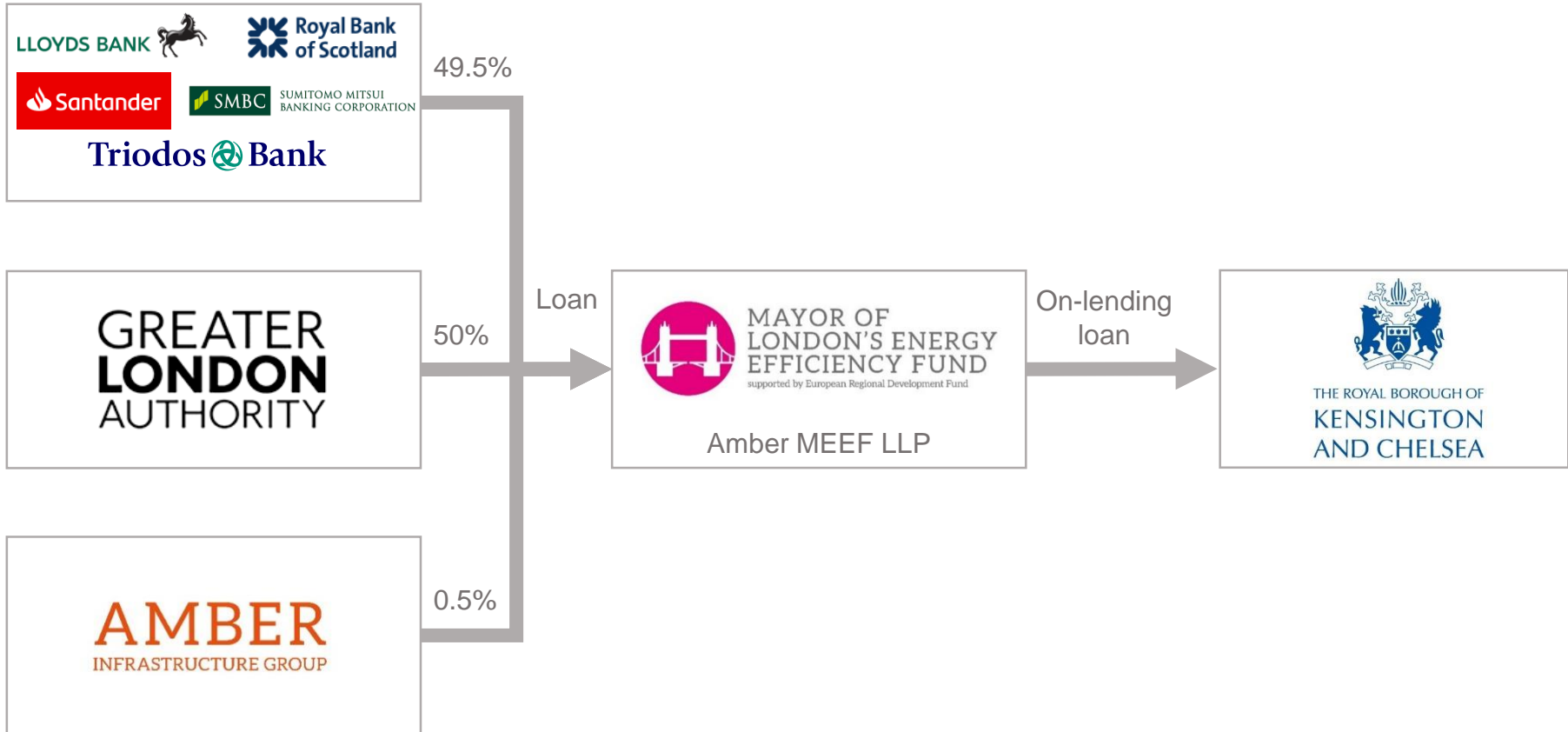
	Interest Rate	1.09%	1.33% ¹	Provides competitive financing at low interest rates by utilising state aid compliant measures.
	Tenor	Up to 19 years	Up to 50 years	Long dated loans with flexible repayment profiles
	Carry Cost	No	Yes	Minimise interest costs by allowing monthly drawings against the expenditure profile during construction or quarterly
	Framework	31 May 2023	N/A	Initial documentation can allow for funding to be drawn against numerous projects over a period to 31 May 2023
	Early Repayment Cost	Capped	100%	Incentivises early repayment with reduced early repayment costs when compared to traditional sources and provides the Local Authority with a known maximum early repayment cost
	Commercial Assistance	Amber	None	Independent review of the business case from a commercial, environment, technical and state aid perspective providing the Project with further assurance
	Marketing	High publicity	No publicity	A GLA developed programme that has high level stakeholder engagement within the GLA

1. PWLB Comparison data taken on 23/09/2019

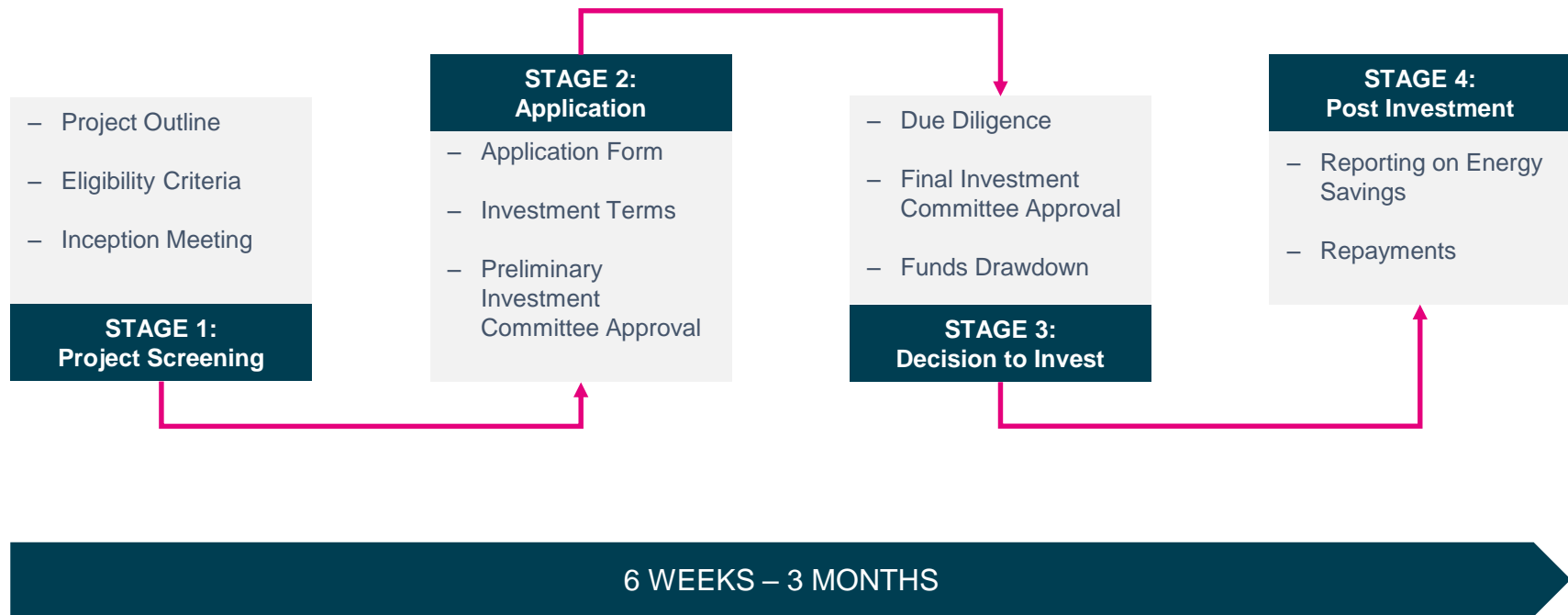
ELIGIBLE TECHNOLOGIES

Category	Eligible measures	New build	Refurbishment
Building envelope	Insulation	×	✓
	Windows and doors	×	✓
	Other building related thermal measures (including passive systems)	×	✓
Building systems	Space Heating	×	✓
	Domestic Hot Water	×	✓
	Ventilation Systems	×	✓
	Cooling (active)	×	✓
	Lighting	×	✓
	Building automation and control	×	✓
	Connection to energy supplies (grid or storage)	✓	✓
	Decentralised energy systems based on energy from low carbon sources	✓	✓
Small-scale renewables	Typically less than 5MW	✓	✓

MEEF FUNDING STRUCTURE



MEEF APPLICATION PROCESS





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CASE STUDIES



MEEF: BUILDING ON LEEF'S SUCCESS



Backed 11 major carbon saving projects



Committed £89m of capital



Reduced CO2 emissions by 40,000 tonnes



Equivalent to taking 36,500 cars off the road



Supported 2000 construction and operation jobs



Saved 34,000,000 kWh of energy; the equivalent of 2000 homes



Mobilised £420m of external finance through our capital



Invested throughout the capital (80 buildings across 9 London Boroughs)

LEEF's Projects:



Tate Foundation – Retrofit



Salters Livery Company – Refurb



London Borough of Hackney – Heat System



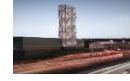
St George's NHS Trust – EPC Contract



London Borough of Croydon – Retrofit



London Borough of Enfield – District Heating



Greenwich Peninsula ESCO Ltd – District Heating



Confidential Data Centre – Energy Efficiency



University of Roehampton – Energy Efficiency



London Borough of Croydon – Retrofit



Epsom Hospital – EPC Contract

EPSOM & ST HELIER UNIVERSITY HOSPITALS NHS TRUST



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LONDON
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FUND



MEEF and LEEF provided a competitive finance option for two fully funded Energy Performance Contracts (EPC)

£21.6m – Epsom & St Helier University Hospital NHS Trust

Project / Financial Highlights

- The funds have helped to support the regeneration of the Trust's sites
- The refurbished buildings will help to improve mental wellbeing of staff and patients
- The EPC contractor, BREATHE, selected through the GLA's RE:FIT programme
- The CHP unit will not have an impact on the local air quality
- The estimated savings from the EPC are over £1m per annum
- The EPC will reduce the NHS estates cumulative carbon emissions while providing a financial benefit to the Trust

Technical Highlights

- Forecast Energy savings of 26% per annum (7.6GWh) for Tranche I and a 21% saving per annum for Tranche II
- Forecast first year CO2 savings:
 - Tranche I 5258 tonnes
 - Tranche II 1252 tonnes
- Energy Conservation Measures include CHP, lighting retrofits, pipework insulation, motor replacements and controls, HVAC system and building controls.



LONDON BOROUGH OF HACKNEY



£4.6m – London Borough of Hackney (LBH)

Project / Financial Highlights

- Match funding sourced from the Council and additional ECO grant from npower (total project cost: £8m)
- Provision of energy to 1,500 social housing tenants (over 600 properties); average energy bill reduced by 56% (£980)
- Addresses fuel poverty by replacing electrically heated systems with a more efficient gas alternative
- Part of a broader Borough-wide social housing regeneration

Technical Highlights

- Estimated 40% CO2 savings due to fuel switch
- Project managed by Cenergist and constructed by Lakehouse
- Created 100 construction jobs
- The Heat Networks have been designed to link with other local networks and potential heat sources
- LBH benefits from lower maintenance costs and O&M contract with ESCO

Installation of communal heating systems for ten high-rise blocks owned and managed by Hackney Homes; the LBH social housing management provider

LONDON BOROUGH OF CROYDON RETROFIT



Finance for a selection of Energy Conservation Measures, to be integrated over the short-to-medium-term. Over 50 separate sites to be extensively retrofitted, including: schools, libraries and civic buildings

£3.6m – London Borough of Croydon Retrofit

Project / Financial Highlights

- Croydon secured a number of positive outcomes including significant financial, energy and CO2 savings, reduced maintenance and a more comfortable internal environment for building occupants
- The project supported the council's objective of becoming a more efficient organisation
- The project feeds into a broader, Borough-wide regeneration that may eventually include district heating and additional energy efficiency upgrades

Technical Highlights

- Forecast energy savings of between 10% and 30% per building
- Bouygues, the Energy Services Company ('ESCO'), were procured under the GLA's RE:FIT scheme which included the benefit of an energy savings guarantee
- Addresses fuel-poverty and affordable-warmth
- ECMs include: Fabric improvements; Renewable energy integration; Boiler and chiller upgrades; LED lighting

LONDON BOROUGH OF CROYDON FAIRFIELD HALLS



Arts, entertainment and conference centre located in Croydon, London containing a theatre and gallery, and the large concert hall that has been regularly used for BBC television, radio and orchestral recordings

£5m – London Borough of Croydon Fairfield Halls

Project / Financial Highlights

- The Project feeds into a broader, Borough-wide regeneration, including the refurbishment of Fairfield Hall Theatre and development of 240 residential apartments
- Croydon will secure a number of positive outcomes including significant financial, energy and CO2 savings, reduced maintenance and a more comfortable internal environment for building occupants

Technical Highlights

- Aiming to achieve a BREEAM 'excellent' building certification
- Forecast annual energy savings of 29% (5.4GWh)
- Forecast annual CO2 reduction: 1472 tonnes
- Addresses fuel-poverty and affordable-warmth
- ECMs include: Boiler and chiller upgrades, CHP, building management system, lighting, insulation, replacement glazing and heat recovery

GREENWICH PENINSULA ESCO LIMITED



£19.8m – Greenwich Peninsula ESCO

Project / Financial Highlights

- 2 tranches of funding for the Energy Centre and the District Heat Network
- Practical Completion in 2018
- 50% match funding sourced from the Developer
- 15,720 residential units and 3.5m sqft of commercial space served by the CHP and heat network
- At the time of construction, it was the largest public sector land development in the UK
- The regeneration of the 190 acre site will take 20 years with a project cost of over £10bn in total

Technical Highlights

- The Project is expected to save over 20,000 tonnes of carbon per annum once constructed
- The LEEF loan allowed the flexibility for a multi-phase build out
- 4000 jobs were created in the construction phase
- The Heat Network has been designed to link with other local networks and potential heat sources

LONDON BOROUGH OF ENFIELD



Seed-capital for a path-finding DH network: the project will use an existing waste energy heat source that will eventually serve over 6,800 homes and businesses across North London

Project / Financial Highlights

- LEEF offered a low cost and innovative source of finance whilst also providing complementarity to a wider EIB facility
- The network is designed to link with other local heat networks and potential heat sources
- Provision of heat (and potentially power in future) to private and social homes and businesses
- Part of a broader Borough-wide regeneration

Technical Highlights

- Expected 50% CO2 savings compared to standard alternative (3,000 tonnes p.a.) once the network is fully constructed
- Addresses fuel poverty by replacing expensive individual systems
- Project advised by DEPDU, the GLA's Decentralised Energy Project Delivery Unit
- Creation of 140 construction jobs
- LBE benefits from lower maintenance costs and a full Design-Build-Operate-Maintain contract

ST GEORGE'S NHS TRUST



£12m Energy Performance Contract (EPC), one of the UK's largest teaching hospitals. This was supplemented by a further £1.3m for additional measures

Project / Financial Highlights

- This is an example of a low cost and innovative source of funding for an NHS entity that has proceeded through the Foundation Trust conversion process; delivered under an EPC with guaranteed energy savings
- Flexible finance terms allowed the Trust to realise a significantly higher NPV for the project when compared to other funding options
- Part of an extensive Trust-wide regeneration over several years

Technical Highlights

- Installation of a CHP plant, remodelling of an energy centre and broad energy efficiency technology retrofit
- Expected to save 6,300 tonnes of carbon and over £1.2m p.a.
- Project procured through the NHS' Essentia framework (previously the London Procurement Programme)
- The Trust will achieve substantial financial and CO2 savings; reduced maintenance and a more comfortable internal environment for both patients and staff

TATE FOUNDATION



LEEF supported the retrofit and installation of Energy Conservation Measures and innovative Low Carbon Infrastructure at one of Britain's best known tourist attractions

Project / Financial Highlights

- The LEEF facility leveraged private sector finance from RBS, totalling an additional £37m (as part of a ~£250m project value)
- Through combining retrofit activities and a pioneering design to link the energy systems of the site's new and old sections, the entity increased gallery space by 60% without increasing its carbon footprint. The Tate Modern extension has been designed to be 'carbon neutral'.

Technical Highlights

- Forecast Energy savings of 26% per annum (7.7GWh)
- Forecast CO2 reduction: 2,500 tonnes
- Energy Conservation Measures are of the highest specification and include: Pioneering transformer waste heat recovery; River Thames bore-hole water cooling; Passive measures to building fabric; 'Gallery standard' lighting and controls

ST ANDREWS UNIVERSITY BIOMASS



Guardbridge Energy Centre, a new £25 million biomass plant and heat distribution network for the University and a district heating network that will deliver heat and hot water to the North Haugh Campus at the western end of the town

Project / Financial Highlights

- The Scottish Funding Council and the University itself have respectively granted £10 million and £4 million to the project
- St Andrews intends to become the first carbon-neutral higher education institution
- The scheme promotes the development of the Scottish energy efficiency market, and will lead to the implementation of the “Guardbridge Guarantee” and wider economic initiatives

Technical Highlights

- The Centre will save up to 8,500 tCO₂ per annum 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
- It will provide over 225 jobs during the construction phase (3 full time)
- Development and remediation of 1.5ha of brownfield land (catalysing the regeneration of the wider 36 acre site)

CUBE HOUSING BIOMASS, GLASGOW



A distributed energy and building fabric improvement project for all the multi-story stock at Cube's Broomhill and Gorget Estates (702 properties) Substitution existing electric heating and hot water systems with a wet (radiator) system centrally fuelled by a mixture of gas and biomass

Project / Financial Highlights

- Additional support from a British Gas ECO contribution of £5.6m
- The site was visited by Alec Neil MSP in January 2016 to publicise the project and the wide ranging benefits it will deliver
- Scottish Gas provided an interim operations and maintenance service during the installation, with Highland Wood Energy having been appointed to provide the operation, maintenance and feedstock

Technical Highlights

- The project focuses on both energy supply side CO₂ reductions (estimated savings of 2,000 tCO₂ p.a.) as well as demand side energy conservation measures
- Significant improvements to the tenants heating; many of whom suffer from fuel poverty.