UK Green Investment Bank plc

Accelerating the UK’s transition to a greener economy

ERP Cities project - round table policy workshop

24rd March 2015
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Green Investment Bank

WHO WE ARE

100% Owned by the UK Government

£3.8bn Capital to invest in green projects

Mobilise private sector investment

Accelerate the UK’s transition to a green economy

70 Specialist investors and technical experts

Independent Board

Chaired by Lord Smith
OVER 70 OTHERS HAVE INVESTED WITH US
The NHS estate consumes a quarter of all public sector energy usage

**Energy Consumption (TWh)**

- 100% = 1,740 TWh
- 100% = 523 TWh

**Outside GIB scope**

**Addressed via Green Deal**

- Transport 37%
- Domestic 32%
- Industry 19%
- Services 12%

**Public Sector Energy Usage**

- 100% consumption
  - Education
  - Health
  - Central Government

- 31TWh
- 21TWh
- 16TWh

**Energy Users**

- Public, 13%
- Commercial, 26%
- Industrial, 62%

- 168 hospital trusts in England with > 25million m² of occupied floor area

Source: ECUK, DECC – Energy Efficiency Strategy
Green Investment Bank is a **strategic investor with green and finance credentials** and can support our public sector clients by engaging early on projects and can provide a full range of structured financing options.

### Project Finance
- Corporate or special purpose vehicle
- Long term service provision with project risk transferred
- Off-balance sheet
- Equity and debt

**Most applicable for large heat network/ESCO procurement**

### Asset Finance
- Performance risk / residual value risk attaching to asset
- Service specific to the asset (maintenance)
- Level of risk transfer will determine whether classified as finance or operating lease
- “Hard-deck payment” and / or deposit from the borrower

**Could be used for renewable heat / CHP solution assets**

### Corporate Loan
- Term loan to private or public sector clients
- On-balance sheet, against the borrower credit rating
- Ability to sculpt return profile on forecast project economics
- GIB Green Loan

**Could be used for a range public sector led projects, including heat networks, waste recycling, building retrofit and streetlighting investment**

### GIB’S ROLE AND FUNDING SUPPORT

<table>
<thead>
<tr>
<th>Review project list</th>
<th>Prioritise projects</th>
<th>Engage with Finance</th>
<th>Agree indicative terms</th>
<th>Provide capital</th>
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<tr>
<td>Early engagement with project team to identify low carbon investment opportunities</td>
<td>Sponsor and promote low carbon on strategic agenda. Prioritise projects by green credentials and financial impact</td>
<td>Understand policy drivers, delivery capacity, project development status and financial constraints. Support development of investment business cases</td>
<td>Continue discussions towards agreement of indicative terms</td>
<td>Provide debt or equity capital to enable projects to be developed</td>
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WHAT DO WE LOOK FOR?

**Leader/CEO Engagement**
- Political air cover
- Political capital
- Career Enhancing!

**Climate Change action Plan (or similar)**
- Strategic plan
- Provides legitimacy to the development activity
- Provides legitimacy to the business cases

**Development capability pipeline of investable projects**
- Capability
- Capacity
- Commitment

**Scale**
- Dilution of transaction costs
- Meaningful impact
- Reduced costs
REDUCING HEATING EMISSIONS

Strong Green Case for Heat Networks

Options for reducing heat emissions

- **Demand reduction / improved efficiency**: Should be done across the building stock, but only takes us so far where we rely on fossil fuel heating (DECC).
- **Biomass**: Good from carbon perspective, but query supply chain and sustainability impacts.
- **Electricity / heat pumps**: as the grid decarbonises, electric heating and heat pumps become lower carbon. But issue: ‘peakiness’ of heat demand versus electricity demand. Heat pumps challenged (space for GS, noise for AS) in urban environments.
- **Heat networks**: Can be more efficient than domestic heat generation, limited by carbon intensity of heat source.

Green case for heat networks

- Heat networks are an enabling technology, taking advantage of all available sources of heat in an area, including waste and renewable heat.
- Allowing **future transition** from gas CHP to lower carbon sources on commercial rather than domestic scale
- They could assist with **grid balancing**, by providing thermal storage, which is key with an increased role for electricity.
- Heat networks are a cost-effective option vs. gas boilers in areas of high building (and heat) density. Heat pumps and biomass are space-constrained in urban areas.
HEAT NETWORKS

Projections of Market Penetration of Heat Networks

- Current heat network penetration is 2% of domestic, public sector and commercial heat demand
- This is projected to double to 4% by 2020
- Even if penetration increases by only 1%, this would equates to c. £800m of investment in heat networks

Network Development Challenges

- Credit risk of additional heat users
- Heat load evolution risk and changes on economics of the low carbon heat source
- Positive planning for project and future connections
- Installing ‘strategic’ infrastructure through oversizing of pipes for potential future loads
- Governance structures to ensure the social benefit of decarbonisation is exploited without significant commercial constraints
STREETLIGHTING IN THE UK

**7.4m**
number of streetlights in the UK. Less than 10% are currently low energy LEDs.

**£300m**
anual UK spend on energy for streetlighting; rising in line with escalating energy prices.

**100,000**
number of hours of light provided by a LED. A standard streetlight only provides 15,000 hours.

**30%**
of light from a standard streetlight is wasted as it is dispersed upwards.

**£200m**
annual energy cost saving by switching to LED streetlighting; paying off the investment in 10 years.

**30%**
of a Local Authority’s energy bill is for streetlighting.

**50 to 80%**
of energy costs could be saved by switching to low energy streetlighting.

Saving greenhouse gas emissions (CO₂) equivalent to taking **330,000** cars off the UK’s roads.
CASE STUDY: LOCAL AUTHORITY STREETLIGHTING

GIB recognised need for **flexible and simple** Energy Efficiency financing product

GIB is developing **standardised due diligence, processes and documentation**

Green Loan developed as **Spend to Save** lending to Local Authorities as an alternative to PWLB