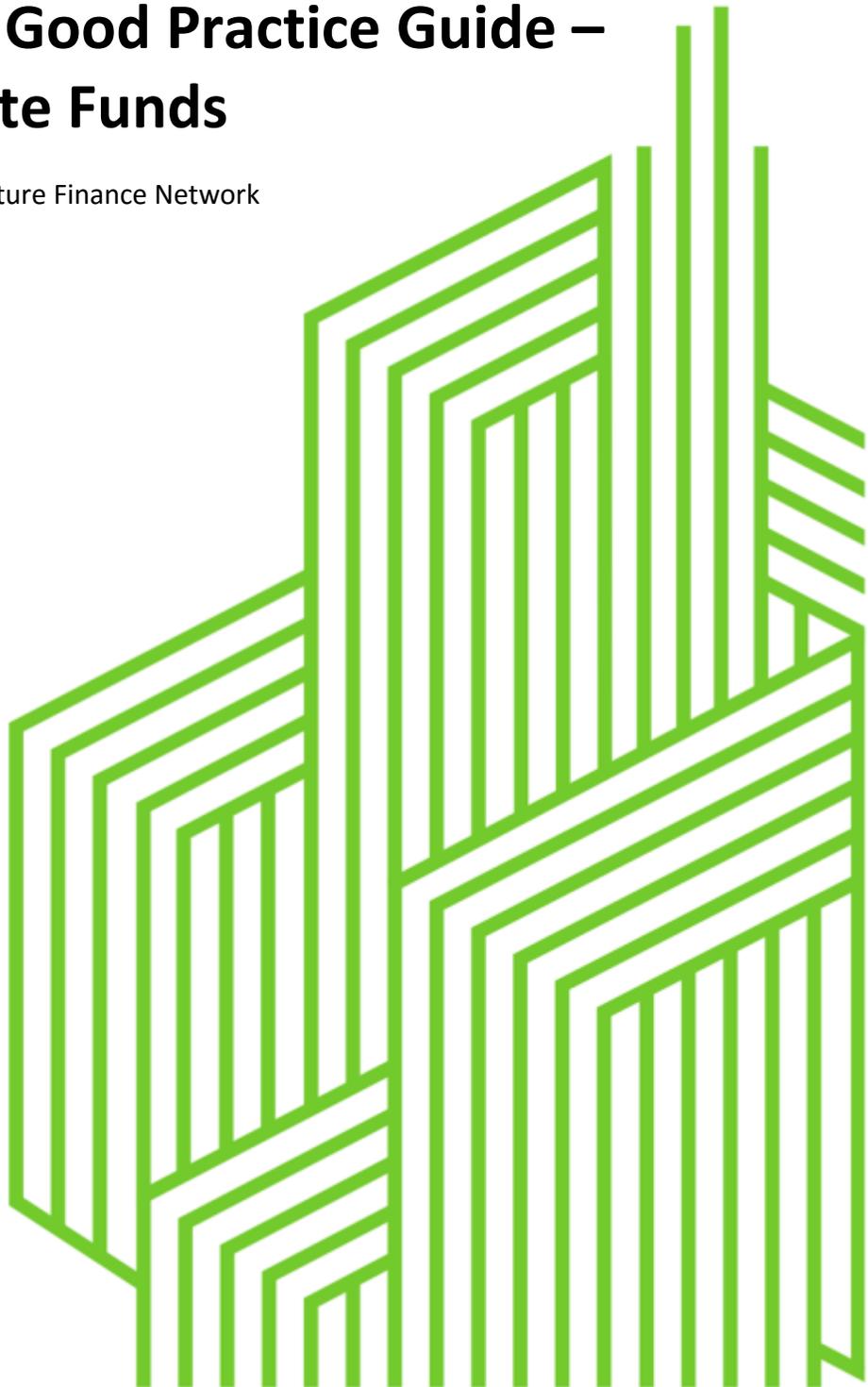




NOVEMBER 2016

# C40 Cities Good Practice Guide – City Climate Funds

Sustainable Infrastructure Finance Network



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## EXECUTIVE SUMMARY

Cities need to find new sources of finance and convince the private sector of the benefits and opportunities stemming from clean, renewable, and low carbon investments. Some C40 cities have successfully accessed such new finance through establishing city climate funds. A city climate fund is an institution set up to finance projects in a city that reduce emissions or improve climate resiliency. The design and operation of these funds vary by city, but some common themes include a degree of independence from political decision-makers in making investment decisions, speciality finance projects and terms, and investment decision criteria linked to a city's broader environmental, social or economic policy objectives.

The C40 Sustainable Infrastructure Finance Network hosted a series of teleconferences and information exchanges on city climate funds with representatives from Amsterdam, London, Melbourne, New York and Toronto. This Good Practice Guide summarises key strategies highlighted by these cities to share with other cities that may be planning to implement or currently operate similar funds. Thanks to the successful deployment of strategies identified in the guide, these funds have collectively supported more than USD \$325 million in sustainable projects.

### **Convene key stakeholders**

*Create a fund that progresses the city's sustainability strategic goals and acts as a facilitator between the property industry, financiers and local governments. Convene key stakeholders to ensure continuous collaboration. Discover market gaps and create innovative, sustainable products.*

### **Mobilise private investment**

*Use a revolving fund structure and mobilise private investment at both fund and project level to ensure financial sustainability and achieve leveraging effects. Understand financing obstacles and market shortcomings from day one to develop a clear investment strategy flexible enough to adapt to future market changes.*

### **Become a specialty lender**

*Provide loans and alternative financing solutions for building-scale energy efficiency and clean energy projects. Become a specialty lender using creative financing tools to scale up climate action in sectors with greatest opportunities and barriers through lending partnerships with like-minded partners.*

### **Set up project-specific funds**

*Set up project-specific fund, employing different strategies and criteria for commercial projects with a higher financial return vs. smaller scale projects that have no commercial targets and lower risk. Provide funding for sustainable projects that traditional financiers would not normally support.*

### **Finance innovative solutions**

*Structure money creatively and allocate a part of the fund to innovation, incubation and capital mobilisation. Finance innovative solutions to de-risk green technologies, incubate climate solutions, and demonstrate low-carbon investment opportunities.*

## 1 BACKGROUND

### 1.1 Introduction

The C40 Sustainable Infrastructure Finance Network, led by Boston and funded by the Citi Foundation as part of the Financing Sustainable Cities Initiative, draws on the experiences of over 15 cities spanning five continents. The Network hosted a series of teleconferences, webinars and email exchanges on climate funds in five cities: Amsterdam, London, Melbourne, New York, and Toronto.<sup>1</sup> This Good Practice Guide draws from content shared during these Network activities and summarises key strategies highlighted by cities in the discussions.

### 1.2 Purpose

The C40 Cities Climate Leadership Group has developed a series of Good Practice Guides in areas critical for reducing greenhouse gas (GHG) emissions and climate risk. The C40 Good Practice Guides provide an overview of the key benefits of a particular climate action and outline successful approaches and strategies cities can employ to effectively scale up these actions. These Guides are based on the experience and lessons learned from C40 cities.

The following Good Practice Guide focuses on key elements necessary to create successful city climate funds, with a survey of best practices leading to better economic, social, and environmental outcomes for cities. These approaches are relevant for cities engaged in C40's Sustainable Infrastructure Network as well as for other cities around the world.

### 1.3 Why city climate funds?

Investing in sustainable infrastructure and services that reduce emissions and increase city resilience has increasingly become a priority for cities, who are responsible for more than half of the world's GHG emission and energy consumption. Despite cities' interest in pursuing sustainable projects, it has been difficult for these projects to attract sufficient investment for a variety of reasons. These reasons include perceived high risk of investing in new technologies or business models, small project scale with high transaction costs, and a lack of precedents to provide confidence to investors. Cities need to find new ways to drive a shift in the market and demonstrate the investment potential of these projects to leverage the private capital needed to transition our cities to a low carbon and climate resilient future.

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<sup>1</sup> Additional C40 cities have also implemented, or are currently implementing, city climate funds and we intend to expand this guide as more cities share insights on their funds during future C40 Network activities. We welcome contributions through webinars, teleconferences, and future good practice future guides from any C40 cities interested in sharing their experiences in implementing and operating city climate funds. Please contact the Sustainable Infrastructure Finance Network Manager, Skye d'Almeida, to discuss: [sdalmeida@c40.org](mailto:sdalmeida@c40.org).

An increasing number of cities around the world are establishing sub-national climate funds to finance sustainable and climate-friendly projects within their city. Though the funds' priorities and focus areas vary from city to city, in general, there are three particular advantages of this approach.

First, establishing a dedicated fund sends a clear signal to citizens, businesses and investors regarding the city's ongoing commitment to support projects that reduce emissions and increase resilience. This can increase investor certainty as well as encourage businesses and other project proponents to identify new low carbon or climate resilient projects.

Second, climate funds can help de-risk finance from more conventional sources. By acting as a guarantor or an underwriter, climate funds can entice more private sector actors or other commercial lenders to invest in the cities' projects.

Third, where cities invest in their own projects, they have a stake in these projects and this can have positive impacts on overall project management and operational efficiency<sup>1</sup>.

## **2 CITY CLIMATE FUNDS AND CLIMATE CHANGE**

### **2.1 What is a city climate fund?**

A city climate fund is an institution set up to finance and support projects in a city that reduce emissions or improve climate resiliency. The fund uses different financial tools to support projects, programmes and schemes with environmental benefits and – in most cases – social and economic benefits. Sometimes also referred to as “green banks” or “revolving loan funds”, they vary in terms of the types of projects supported, their funding approach, and their investment objectives. Most commonly, these funds support energy efficiency and renewable energy projects. Some also support waste, low-emission vehicles and other projects that meet the city's environmental or social policy objectives. While closely linked to the city's mission, many city climate funds are independent and self-sustaining organisations, operating at the intersection of city councils, financial organisations, the property industry, and in some cases that of social enterprises and civil society.

A city climate fund can be structured in different ways, depending on the needs of the city and the local conditions. The strategy employed to leverage finance for low carbon projects depends on a variety of factors such as mayoral powers, regulatory and legislative context, type and scale of infrastructure project, and the risk/reward profile of stakeholders.

## 2.2 Benefits of city climate funds

Cities that have implemented a city climate fund revealed that these schemes bring a variety of benefits, including:

- Significant GHG emissions reductions and improved air quality;
- Improved public-private sector collaboration;
- Additional private sector financing due to cities' involvement in low carbon projects that may otherwise be perceived as risky investments;
- Returns on investment, which can be reinvested in similar activities;
- Enhanced local project management and technical expertise;
- Increased employment opportunities; and
- Large scale market change, with some initiatives and programmes being taken up at regional and national levels and delivering even more positive impacts.

## 2.3 Challenges of city climate funds

In considering whether to implement a climate fund, cities should also consider some of the key challenges involved with this model. Many of these challenges can be overcome and strategies to address these issues should be considered in the design and operation of the fund. Some challenges include:

- City climate funds generally require cross-department collaboration and can be administratively difficult to establish.
- A city will need to find the initial capital to create the fund, with some cities using national or international transfers or the sale of property within the city to capitalise the fund. This initial capital is often used to leverage private funds to increase the pool of funding available for projects.
- Depending on the structure and operation of the fund, the operating costs can be high, particularly where professional fund managers are contracted.
- Transaction costs can be high and constitute barriers to smaller projects. To address this, some cities operate a separate programme outside of the fund to support smaller projects.
- Funds often offer loans at near market rates in order to stay competitive, which is complicated in times of exceptionally low interest rates. Low interest rates may not be sufficient to compensate for the level of project risk or the costs of operating the fund. To address this, some funds attract projects through offering more flexible finance terms or other incentives, with less emphasis on offering the cheapest financing available in the market.
- A fund is only as good as the projects it invests in. Some cities operate project preparation programmes to support the development of projects that can be funnelled through to their city climate fund. Some funds will also work closely with project proponents to improve the viability of their project.
- Lending partners or other capital providers might expect to get involved in fund management.

### 3 GOOD PRACTICE APPROACHES FOR CREATING CITY CLIMATE FUNDS

#### 3.1 Categories of best practice

In order to deliver a successful and impactful climate fund, there are a few key approaches that the five participating cities have highlighted:

- **Convene key stakeholders**
- **Mobilise private investment**
- **Become a specialty lender**
- **Set up project-specific funds**
- **Finance innovative solutions**

C40 has attributed each of these success factors to one of the five city funds discussed within the Sustainable Infrastructure Finance Network that constitute examples of best practices in each of these categories.

#### 3.2 Convene key stakeholders

*Create a fund that progresses the city’s sustainability strategic goals and acts as a facilitator between the property industry, financiers and local governments. **Convene key stakeholders** to ensure continuous collaboration. Discover market gaps and create innovative, sustainable products.*

##### **Case study: Sustainable Melbourne Fund (SMF)**

**Summary:** Over AUD 16.9 million (USD 12.5 million)<sup>3</sup> has been invested directly in building upgrades, renewable energy systems, residential neighbourhood innovations, lighting solutions and software technology. This resulted in over 245,000 tonnes of GHG reductions. Through reinvesting returns and facilitating co-financing from banks, the fund has supported renewable energy and energy efficiency projects worth over AUD 26 million (USD 19.2 million). The fund’s Environmental Upgrade Agreements (EUA) scheme has been taken up by other jurisdictions and laid the foundation for the national EUA marketplace.

The City of Melbourne aims to become carbon neutral by 2020, as expressed in its Zero Net Emissions by 2020 strategy. To achieve this goal, the city initiated a range of programmes supporting emissions reductions from the building sector (1200 Buildings<sup>4</sup>, Smart Blocks<sup>5</sup>, CitySwitch Green Office<sup>6</sup> and Solar Energy for Business Programme). The Sustainable Melbourne Fund<sup>7</sup> (SMF) – the first of its kind in Australia – was established in 2002, predating all of these programs; SMF’s role, to bolster these programs as through the availability of finance to support these programs. Through its mandate, SMF aims to advance and extend the sustainability goals of the Council by adopting the triple

bottom line approach to generate environmental, social and financial returns from its activities. As such, SMF’s 2016-2019 Business Plan closely aligns with the Council’s objectives.

**Value:** The SMF is currently valued at AUD 15.6 million (USD 11.5 million) with an initial investment of AUD 5 million (USD 3.7 million) in equity and more recently the commitment of a AUD 10 million (USD 7.4 million) debt facility.

**Structure:** A commercially oriented, wholly owned, independent trust, which over the years has evolved into operating as a revolving fund where money is continually reinvested.

Figure 1: Sustainable Melbourne Fund structure and services



The SMF Chief Executive Officer and staff are employed by the Corporate Trustee of the Sustainable Melbourne Fund (SMF Investment Management Pty Ltd), which is responsible for overseeing the fund’s performance in line with its mandate. One of the key activities of the SMF is the EUAs programme. SMF also provides additional investments, as explained below.

### Environmental Upgrade Agreements (EUAs)

SMF designed and implemented the EUAs programme for the City of Melbourne. EUAs can fund any building upgrades that improve energy, water and waste performance. For example, they can fund renewable energy installations with no upfront costs and on commercially attractive terms. EUAs are available to owners, tenants, service providers and property managers. EUAs work similarly to traditional finance, where a financier provides a loan and the owner makes repayments.

To be considered for an EUA, Melbourne-based building owners need to sign up to the City of Melbourne’s 1200 Buildings programme. The EUA is secured against the building, while the local council collects repayments utilising its property taxing authority (locally referred to as Council property rates and Charges) and then redistributes them back to the lender. This reduces the risk for financiers and lenders who are able to provide better terms.

Additionally, this structure enables a building owner to collect tenant contributions towards the loan repayments through the existing provisions of the tenant lease agreements. This solves the commonly encountered split-incentives dilemma, whereby the costs of building improvements are borne by owners and the benefits (in terms of lower energy bills) accrue to the tenants. To ensure that the Melbourne City Council could levy the environmental upgrade charge, the City of Melbourne Act was amended in 2010. Most recently the State Government of Victoria amended the Local Government Act 1989, enabling each of Victoria’s 79 local governments to now voluntarily offer EUAs within their municipal boundaries.

Figure 2: Third party administration model used by SMF



The programme has laid the foundation for a national EUAs marketplace - other States and territories have replicated the State legislation required for such marketplaces. SMF acts as a third party administrator for these programmes (see Figure 2). It establishes the programme for municipal governments, operates as a point of contact and facilitates project discussions between property owners and tenants, financiers and the councils, while also providing ongoing monitoring and reporting.

This approach has several advantages. Research conducted by the council has found it is the property industry's preferred model, and is also the least costly arrangement for councils. SMF has been able to leverage its knowledge, frameworks and tools in launching the third party administrator model in other municipalities and has maintained consistency in the services provided. Including Melbourne, SMF currently provides its services to ten Local Governments within the State of Victoria, thus creating a new marketplace in the State.

### **Other types of investments**

SMF also provides up to 100% loans in energy efficiency, water efficiency, waste minimisation and clean technology projects that deliver clear environmental benefits and contribute towards the city's sustainability outcomes. The fund has developed a range of finance products to target different types of projects in both commercial and residential properties. For instance, [SMF Solar Finance](#)<sup>8</sup> provides finance for solar installations to both tenants and property owners of small and medium-sized enterprises. [SMF Strata Finance](#)<sup>9</sup> lends money for different upgrades to common areas of both commercial and residential strata buildings (e.g. lighting, heating, ventilation, and air conditioning (HVAC), solar, and other end of life upgrades).

### **Results**

SMF has made over AUD 16.9 million (USD 12.5 million) in direct investments in building upgrades, renewable energy systems, residential neighbourhood innovations, lighting solutions and software technology. These direct investments have resulted in over 245,000 tonnes of GHG reductions. Through reinvesting returns and facilitating co-financing from banks, SMF has supported renewable energy and energy efficiency projects worth over AUD 26 million (USD 19.2 million).

### **Reasons for success**

- Understanding where there are market gaps is essential for product and service innovation. After closely examining the market, the SMF created new revenue models, going beyond simply stimulating activity in this area to creating scalable products and services. Their work on the EUAs ultimately contributed to a change in the national market.
- Operating city climate funds requires significant resources and will often rely on partnerships with other organisations that can assist with specific needs, such as

- developing a communications and sales strategy. In partnership with ClimateWorks Australia, SMF has launched the [Better Building Finance](#)<sup>10</sup> website to streamline their sales strategy, improve communication on the benefits of EUAs, and ensure that a common language is used across the country. This enabled staff to remain focused on their mandate.
- Communications and public relations were extremely important, and other cities should not overlook their role in the successful launch of a new climate fund. Funds should sell the full package. SMF has been focusing on selling all the benefits that come with finance.

### **When/Why might a city apply an approach like this**

Operating as a facilitator between property owners, tenants, financiers and the councils can help city climate funds create products and services that target the needs of the different parties. In the case of EUAs, the third part administrator role of SMF was cost effective for the council, and was also the industry's preferred arrangement.

### **3.3 Mobilise private investment**

*Use a revolving fund structure and **mobilise private investment** at both fund and project levels to ensure financial sustainability and achieve leveraging effects. Understand financing obstacles and market shortcomings from day one to develop a clear investment strategy flexible enough to adapt to future market changes.*

#### **Case study: London Green Fund (LGF)**

**Summary:** The fund's GBP 102 million (USD 135 million)<sup>11</sup> investments are predicted to save 288,805 tonnes of GHG per annum and to divert 440,980 tonnes of waste from landfill per annum, resulting in the creation of 2000 jobs and 34% energy use savings. Through two of its three Urban Development Funds, the fund managed to secure GBP 575 million (USD 761 million) from the private sector and other investors.

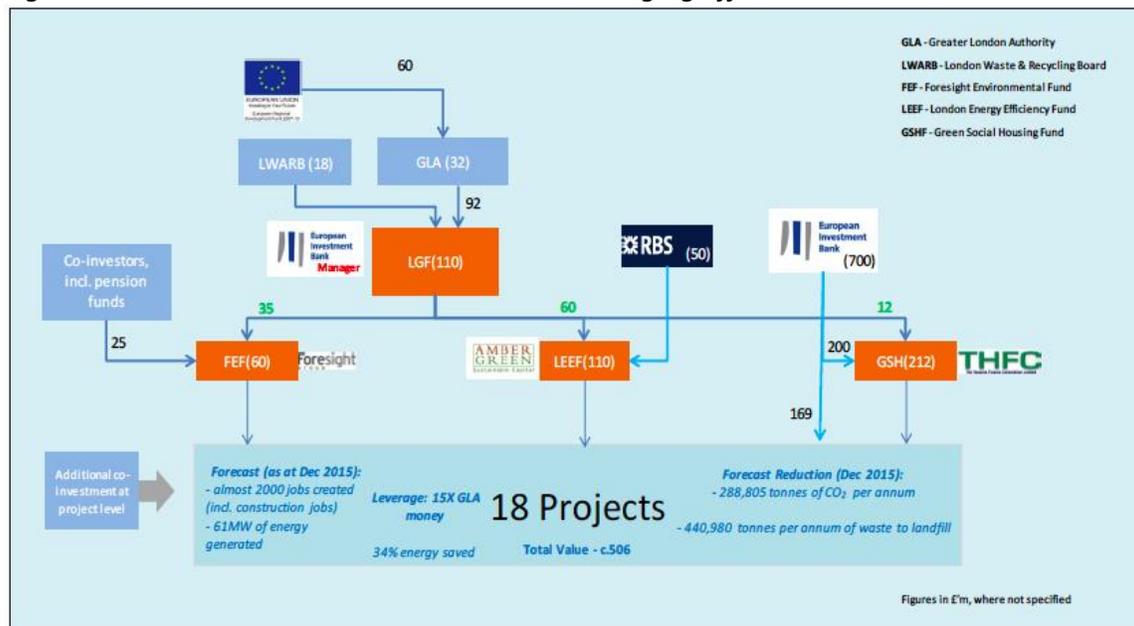
London aims to reduce GHG emissions by 60% below 1990 levels by 2025. To achieve this goal, the city has developed a number of strategies and programmes related to energy efficiency, energy supply, waste, low carbon economy and adaptation (e.g. [RE:FIT](#)<sup>12</sup>, [RE:NEW](#), [London Waste and Recycling Board](#)<sup>13</sup>). The London Green Fund (LGF) was established in 2009 and provides a useful tool to ensure that the city's priority programmes and projects benefit from additional financial support from the private sector.

The LGF is a JESSICA<sup>14</sup> Holding Fund of GBP 120 million (USD 159 million) and is managed by the European Investment Bank (EIB). It is made up of GBP 60 million (USD 79 million) from London European Regional Development Fund (ERDF) Programme, GBP

32 million (USD 42 million) from the Greater London Authority<sup>15</sup>, GBP 18 million (USD 24 million) from the London Waste and Recycling Board<sup>16</sup>, and GBP 10 million (USD 13 million) from private funding at project level.

**Value:** The LGF was established with an initial value of GBP 100 million (USD 132 million), and grew with the addition of GBP 575 million (USD 761 million) of funding from the private sector and European Investment Bank (EIB).

Figure 3: London Green as Fund structure and leveraging effect



As can be seen in Figure 3, the LGF (FEF and LEEF in particular) has managed to secure additional streams of funding from private sources at both fund level and project level. This plays a key role in supporting the sustainability of the fund. FEF secures a minimum of GBP 25 million (USD 33 million) at fund level from the private sector, including Pension Funds, and GBP 33 million (USD 44 million) at project level from other investors.

LEEF secures GBP 50 million (USD 66 million) from the private sector (Royal Bank of Scotland) at fund level, and an additional GBP 284 million (USD 376 million) from other investors. The GSHF has also received GBP 200 million (USD 265 million) from the EIB in 2012 to develop energy efficient social housing. It would have been difficult to leverage additional private sector finance if a grant model had been used. Having used this structure, the fund is expected to show a significant leveraging effect (15x times the initial investment by the Greater London Authority).

**Structure:** The LGF has a revolving fund structure made up of three smaller funds, each targeting different projects. The EIB manages the LGF on behalf of the Greater London

Authority and the London Waste and Recycling Board. Their main responsibilities are to hold the initial capital, any proceeds from investments, and interest earned from capital that has not been invested. The EIB is also responsible for setting up and selecting the organisations to manage the Urban Development Funds and to monitor their performances.

The LGF focuses on waste management, decentralised energy and energy efficiency schemes that support the Mayor’s environmental targets, with a particular focus on reducing GHG emissions. The fund allocates funding to three Urban Development Funds, which are separate legal entities and invest directly in projects:

**Foresight Environmental Fund<sup>17</sup> (FEF)**

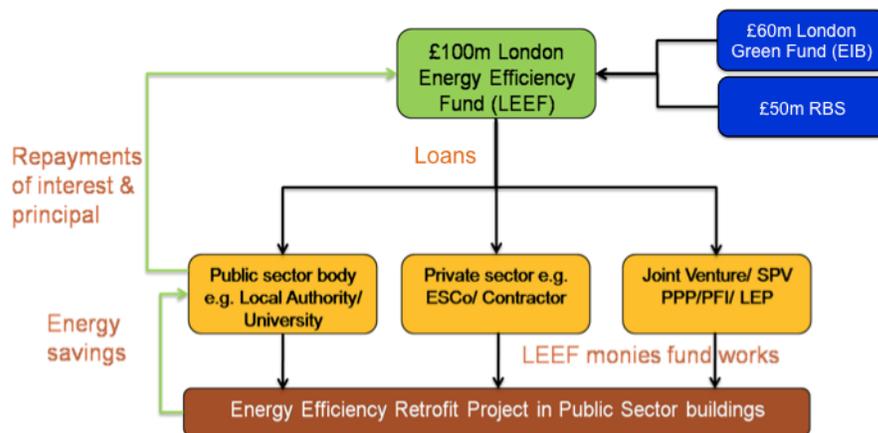
Launched in March 2011, FEF provides equity finance or equity-type investments for the construction or expansion of waste to energy facilities, re-use, recycling or reprocessing facilities, and other facilities displacing fossil fuels such as ‘waste to fuel’.

**London Energy Efficiency Fund<sup>18</sup> (LEEF)**

Established in August 2011, LEEF mainly provides debt finance to private and public sector building retrofit projects and to decentralised energy schemes and associated distribution systems. LEEF has provided debt financing to support energy efficiency measures in 72 buildings. Equity finance is also available, subject to project financing structure.

The LEEF can lend money to different parties, including public, private sector or joint venture entities such as Energy Service Companies. A condition of the loan is that the projects must involve eligible works to public sector owned or occupied buildings. Borrowers can take up to GBP 20 million (USD 26 million) with no set payback period and each project must deliver energy savings of at least 20%.

Figure 4: London Energy Efficiency Fund



### **Greener Social Housing Fund (GSHF)**

Since March 2013, the GSHF has been providing investments mainly in the form of loans to landlords of social housing for retrofitting works. GSHF has invested in three Registered Providers of social housing - Gallions Housing Association, The Origin and A2Dominion - to support the refurbishment of over 2,500 properties to make them more environmentally friendly.

The Funds are independently managed by professional fund managers that make repayable investments in projects. They make decisions on projects in which to invest, based on the investment policy agreed by the Investment Board.

- Foresight Group LLP manages the FEF.
- Housing Finance Corporation Limited (THFC) manages the GSHF.
- Amber Green Consortium administers the LEEF, with funding from RBS and technical support from Arup. All projects have to receive approval from the Greater London Authority.

### **Results**

The LGF has invested GBP 102 million (USD 135 million) in 18 projects so far. As of November 2014, they are predicted to save 288,805 tonnes of GHG per annum and to divert 440,980 tonnes of waste from landfill per annum, resulting in the creation of 2000 jobs, 34% energy use savings and 61 MW of energy generated. The returns will be reinvested in similar activities, generating an even higher impact.

### **Reasons for success**

- Different factors may prevent low carbon projects from being financed (e.g. difficulties accessing finance, lack of or limited finance, high project costs and risks). Understanding why projects are not going ahead is a critical first step for cities. LGF used this knowledge to formulate their goals, their investment strategy including where they wanted to invest, which funds and projects they wanted to support, how investors can work with them, and how they could set up the structure of the fund to give confidence to investors.
- While having a clear investment strategy is key, city funds should be flexible and acknowledge that the market can and often does change. In London's case, the LEEF had to allocate fewer resources to decentralised energy schemes and more resources to retrofitting, as the programme to develop the pipeline of decentralised energy projects lost its funding.
- To ensure that low carbon projects are implemented successfully, borrowers may often need project management and technical guidance, in addition to financial support. This is the case especially for public sector borrowers. Wary of this challenge, the LGF coordinated resources internally with the RE:FIT and RE:NEW teams. These teams provided support to local authorities that wanted to retrofit but did not know where to start.

- City funds should identify potential challenges (e.g. legislative barriers, tax implications for operating a fund) and act on opportunities (e.g. working with existing organisations). For instance, the LGF has worked with the Green Investment Bank to identify opportunities and projects that they could finance together.
- Professional fund managers should be recruited based on their ability to attract private capital.

### **When/Why a city might apply an approach like this**

London’s approach has successfully leveraged private sector investment and supported the fund’s financial sustainability, enabling finance to be reinvested in similar activities. Cities could look to this model to secure additional funding at both the fund and project level.

### **3.4 Become a specialty lender**

*Provide loans and alternative financing solutions for building-scale energy efficiency and clean energy projects. **Become a specialty lender** using innovative financing tools to scale up climate action in sectors with greatest opportunities and remove barriers through lending partnerships with like-minded partners.*

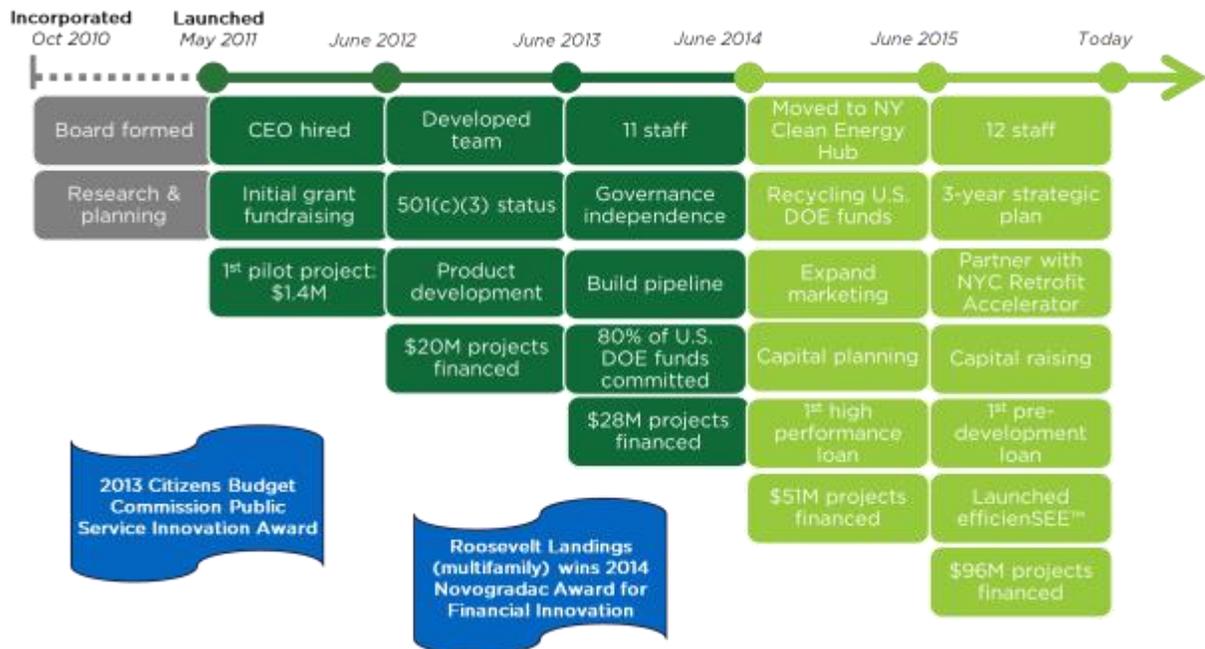
#### **Case Study: New York City Energy Efficiency Corporation (NYCEEC)**

**Summary:** Established and endowed by New York City (NYC) in 2011 with USD 37.5 million of federal grant funding, NYCEEC has financed nearly USD 100 million of clean energy projects to date across 7.2 million square feet of NYC buildings—eliminating over 629,000 metric tonnes of greenhouse gases and resulting in the creation of over 1,000 jobs. NYCEEC’s design as a highly flexible, mission-focused specialty lender has attracted additional funding from the public sector (federal, city and state), commercial lending institutions, and philanthropy.

NYCEEC provides loans and credit enhancement solutions for energy efficiency and clean energy projects that save energy and reduce greenhouse gases. NYCEEC’s mission is to innovate and deliver clean energy financing solutions for buildings, and its vision is that clean energy financing markets for buildings will develop and align with the city’s long-term environmental goals. As such, NYCEEC works closely with the City of New York to support their environmental policies<sup>19</sup>.

**Value:** NYCEEC was established with an initial capitalisation of USD 37.5 million provided to NYC through the federal American Recovery and Reinvestment Act (ARRA). NYCEEC has attracted additional capital from the public, private, and philanthropic sectors.

Figure 5: NYCEEC path<sup>20</sup>



**Structure:** NYCEEC is a 501(c)3 non-profit specialty finance company. NYCEEC was originally created as a component unit of NYC government, and subsequently “spun off” as a fully independent non-profit with continuing contractual ties to NYC.

NYCEEC’s core capital is structured as a revolving loan fund whereby NYCEEC offers a variety of debt products to building owners and project developers to finance building-scale energy efficiency and clean energy projects. NYCEEC also provides credit enhancement to encourage private lenders to offer efficiency loan products.

Because NYCEEC is a revolving loan fund, the fund can recycle capital as loans are repaid. NYCEEC also levers its balance sheet to multiply impact. NYCEEC lends at market equivalent rates while offering enhanced features to property owners to facilitate efficiency investments, namely flexibility, technical guidance and terms designed to meet project investment needs. Loans and credit enhancements generate income to support NYCEEC operations. NYCEEC supplements earned revenue with philanthropic funds to bolster financial strength and support field advancing activities, such as publishing project performance results and lending best practices.

NYCEEC is staffed with both financial experts and engineers specialising in building energy systems. This novel combination of professional capabilities allows NYCEEC to innovate and advance the use of creative financing tools while producing strong

environmental results. NYCEEC's strategy includes three priorities: financing projects, building partnerships, and advancing the field.

*Financing Projects:* Buildings in all sectors are eligible for NYCEEC financing products, provided that the measures financed result in reduced energy usage and avoided greenhouse gas emissions. NYCEEC finances:

- Energy efficiency
- Passive house
- Clean fuel conversions
- Renewables
- Cogeneration
- Demand management

As an unregulated, specialty finance company, NYCEEC operates in a highly flexible manner and has the capacity to innovate and produce creative financial solutions to meet the needs of a developing energy efficiency market. To date, NYCEEC's financial products include pre-development loans, equipment loans (secured and unsecured), energy services agreements, power purchase agreements and green mortgages.

*Partnerships:* NYCEEC seeks to multiply its impact through strategic partnerships, typically with private-sector lenders and with public financing institutions (often focused on affordable housing). Credit enhancement is one tool NYCEEC uses to support lending programs developed by partner organizations. Ultimately, NYCEEC seeks to advance the integration of efficiency-friendly financing into mainstream real estate finance markets, such as the mortgage lending market.

*Advancing the Field:* NYCEEC seeks to advance the broader markets for efficiency investment. The goal is to remove existing barriers to energy efficiency investment and empower building owners and tenants to make investments that will save money and produce significant environmental benefits, as well as co-benefits in health, economic development, and energy reliability.

NYCEEC has several initiatives designed to provide information and transparency to the market, to remove barriers, and to develop innovative tools. Monitoring and reporting financial and environmental results at the project level is a high priority, as is removing barriers to investment such as obstacles to lender consent, high transactions costs, and current low levels of standardisation.

## **Results**

To date, NYCEEC's initial USD 37.5 million capitalisation has resulted in debt financing of over USD 96 million of energy efficiency and clean energy project costs in predominantly multifamily and commercial buildings. This portfolio of projects is projected to eliminate

over 629,000 metric tonnes of GHGs (over the useful life of the equipment). NYCEEC has established several lender partnerships, resulting in greater capital access for efficiency.

NYCEEC focuses on building sectors in NYC with the greatest contribution to GHG emissions and the toughest challenges in mobilising energy efficiency investment – namely privately-held, larger commercial and multifamily buildings (including the affordable multifamily housing sector). NYCEEC’s approach is to finance a wide range of technologies that save money and reduce GHG emissions, ranging from simple, proven approaches to deep multi-measure retrofits. NYCEEC has been active in supporting the development of “passive house” approaches in NYC buildings by providing attractive financing to this emerging sector. See Figures 6 and 7 for NYCEEC’s environmental, social and financial results.

Figure 6: NYCEEC Portfolio – Social & Environmental Metrics<sup>21</sup>

Total project cost financed	\$96 million	CO <sub>2</sub> e eliminated (mtons)	629,498
Square footage	7.2 million	Energy savings (mmBTUs)	19 million
# of MF units	5,986	# of jobs	1,041
# of buildings	177	# affordable units	4,427 (74%, as a % of MF units)

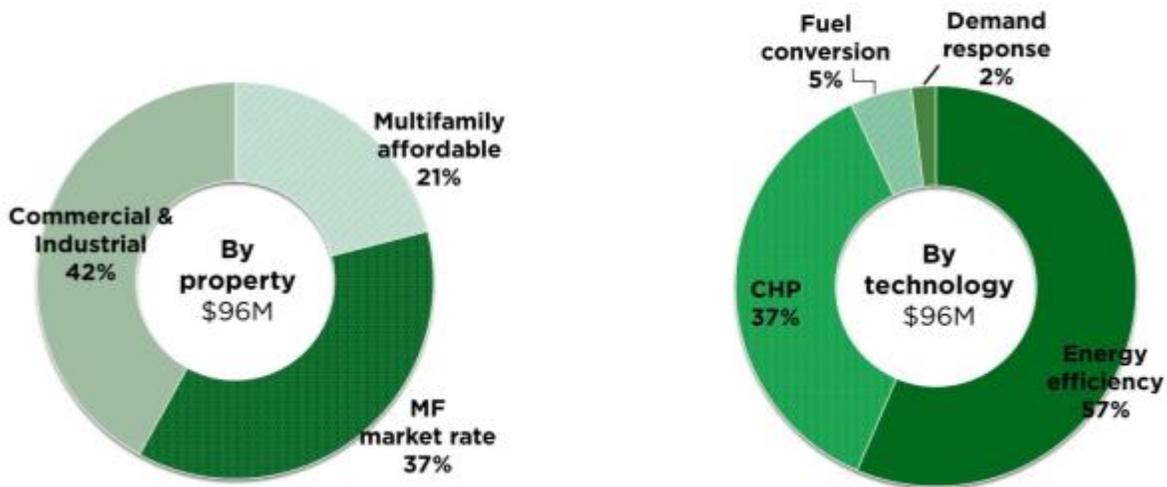
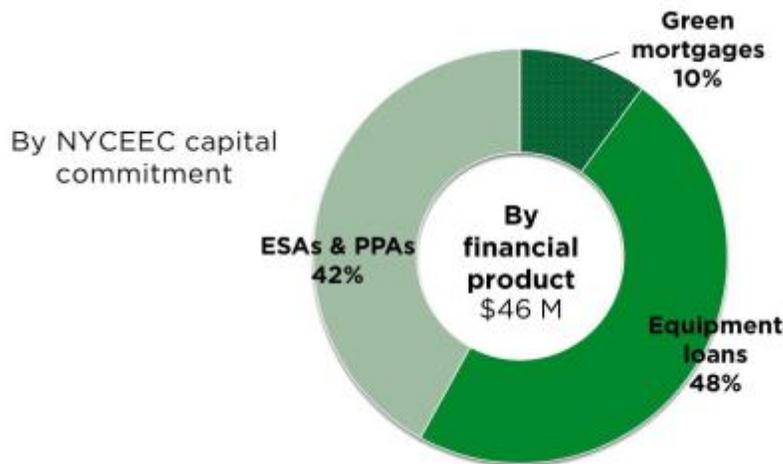


Figure 7: NYCEEC Portfolio – Financial Metrics<sup>22</sup>

NYCEEC capital deployed		# of transactions	54
- Loans	\$45 million	# of lender partnerships	7
- CE utilized	\$1 million	Weighted average interest rate	6.6%
- CE committed	\$7.5 million	Weighted average term	8.3



### Reasons for success

- NYCEEC’s organisational structure and governance offer an attractive vehicle that combines public, private, and philanthropic investment. NYCEEC levers public sector dollars with private capital, and recycles public capital for maximum impact.
- NYCEEC is staffed with both financial and engineering professionals, as well as marketing, legal, and communications experts.
- NYCEEC has focused on the sectors with the greatest opportunity and barriers, and has built a significant portfolio of clean energy projects in multi-tenanted multifamily and commercial properties within a competitive real estate market.
- NYCEEC uses a combination of true financial product innovation and specific modifications to business-as-usual lending approaches. This includes energy services agreements, lender waiver and acknowledgement templates, credit enhancement structures and ‘underwriting-to-savings’.
- To demonstrate the commercial viability of energy efficiency and clean energy financing, NYCEEC finances projects at commercially equivalent market rates. NYCEEC is attracting lenders to this sector, improving overall capital access.
- NYCEEC maintains close working relationships with city and state sustainability policy staff and incentive providers, ensuring the vertical alignment of goals.

### **When/Why a city might apply an approach like this**

Creating an independent but closely affiliated non-profit financing organisation like NYCEEC is a tool that cities can use to attract both philanthropic and private capital investment to an under-invested sector. Attracting private capital resources is critical, as there is clearly insufficient public capital to create a truly sustainable built environment. NYCEEC’s structure promotes innovation to advance investment and remove barriers.

Offering financing through funds like NYCEEC provides cities a vehicle to do the “R&D” work and iteration needed to develop and test innovative approaches. NYCEEC maintains a very close working relationship with city and state policymakers, sharing lessons learned in order to shape effective policies that drive greater clean energy investment.

### **3.5 Set up project-specific funds**

*Set up project-specific fund, employing different strategies and criteria for commercial projects with a higher financial return vs. smaller scale projects that have no commercial targets and lower risk. Provide funding for sustainable projects that traditional financiers would not normally support.*

#### **Case study: Sustainability Fund and Amsterdam Climate & Energy Fund (AKEF)**

**Summary:** Amsterdam has invested in over fifty projects in the areas of climate, sustainability and air quality through two revolving funds totalling approximately EUR 30 million (USD 32 million)<sup>23</sup>. These two funds—the Amsterdam Climate & Energy Fund (AKEF) and the Sustainability Fund—support the New Amsterdam Climate Plan, which sets a target to reduce the City of Amsterdam’s GHG emissions by 40% by 2025.

The Amsterdam Climate & Energy Fund (AKEF) offers primarily subordinated loans ranging from EUR 500,000 to 5 million (USD 532,000 to 5.3 million), while the Sustainability Fund supports smaller, local projects up to EUR 500,000 (USD 532,000).

**Value:** The combined capitalization of the AKEF and the Sustainability Fund is EUR 85 million (USD 90.4 million) - EUR 45 million (USD 48 million) for AKEF to support projects that generate a financial return of at least 8%, and EUR 40 million (USD 43 million) for the Sustainability Fund to support smaller, low-risk projects with a financial return of 2%.

**Structure:** Both the AKEF and Sustainability Fund are structured as revolving funds, and all profit and revenues are reinvested within 15 years to fund additional sustainable energy production, energy efficiency, or circular economy projects<sup>2</sup>.

### 1. Amsterdam Climate & Energy Fund (AKEF)

The AKEF supplies risk finance like subordinated loans and is run by external fund managers. The AKEF was established in 2013 to supply risk finance, primarily in the form of subordinated loans. External fund managers known as ‘e3’ run AKEF, including three portfolio managers and one professional fund manager. e3 comprises three different partners - EWIC, Privium Fund Management and Libertus Energy Finance - with a track record of managing sustainable project investments. The City of Amsterdam has no influence over investment decisions, as an independent Investment Committee supervises the fund managers and must approve all investment decisions proposed by the fund managers. The Investment Committee is comprised of five experts on investments, public sector finance, and energy efficiency. The City selects two of five board members, both of whom must not be affiliated with the city government, while e3 selects the remaining three.

The fund has invested EUR 25 million (USD 27 million) so far, in a range of commercial large-scale projects. Each loan typically ranges between EUR 500,000 – 5 million (USD 532,000 to 5.3 million). These investments target companies and large energy efficiency and sustainable energy production projects. AKEF provides mostly subordinated loans offering a minimum return of 8% for projects that offer reductions of at least 30kg CO<sub>2</sub>/EUR over fifteen years. The fund may also offer guarantees and equity.

Examples of the projects that AKEF has financed include the second largest solar roof in the Netherlands at the time of construction ([Amsterdam Arena<sup>25</sup>](#)), electric vehicle lease company, biofuel and biomass generation, green gas ([OrangeGas<sup>26</sup>](#)) generation and distribution, solar lease companies, a vertical farm, and sustainability installations for a large new building development. AKEF also currently has multiple investments in its pipeline.

### 2. Sustainability Fund

The Sustainability Fund provides smaller, low-risk, non-commercial loans and is managed directly by City of Amsterdam civil servants. The fund offers loans of up to EUR 500,000 (USD 532,000) at a standard 2% interest rate. Co-financing with the private sector is incentivised by offering a 0.5% interest rate discount when 33% or more of the

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<sup>2</sup> Circular economy projects help communities move away from the traditional linear economy waste pathway and instead maximize the value extracted from resources, promoting the recovery and reuse of materials at the end of the service life of products.

project financing comes from a non-governmental entity (e.g. a bank, crowd funding, own funds).

The Sustainability Fund was originally part of the Amsterdam Investment Fund (AIF), established in 2011<sup>27</sup>. Amsterdam launched the AIF as a strategic financing tool with the dual aim of supporting the city's environmental commitments while encouraging city residents to make investment proposals. One fifth of the AIF was committed to social projects emphasising the social co-benefits of GHG reductions, like reduced energy bills for residents and businesses.

In 2015, Amsterdam formally separated out the segment of the fund set aside for social projects to create the Sustainability Fund, and terminated the original AIF. The new Sustainability fund has EUR 40 million (USD 43 million) to lend specifically to local sustainability projects that offer direct GHG reductions.

The Sustainability Fund's operations launched in January 2016, housed within the Sustainability Office of the City of Amsterdam. The fund provides loans to local projects that provide clear GHG reductions, supporting a variety of stakeholders and organizations like building owners, schools, sports clubs, theatres, and social housing corporations and small enterprises. Over 75% of loans are used for solar energy projects, but the fund has also financed aspects of heat and cold storage, insulation, and energy efficient furnace projects. Companies seeking to finance projects can also receive loans, but, for regulatory reasons, they cannot use money for "commercial investments" that improve their competitive position. This stipulation has the added benefit of minimizing the risk that the loan is not repaid.

In addition to energy saving and production projects, the fund is experimenting with loans for advancing the circular economy. As these projects are typically the core business of relevant companies, the aforementioned competition stipulation makes it harder to fund circular economy projects.

Initially, the Sustainability Fund received a low number of applications for loans. In response, the fund created a program to provide potential applicants from targeted sectors free energy audits ('energy scans'). The city pays for independent energy advisors to assess prospective projects, estimating a building owner's potential to save on energy costs or generate renewable energy. The advisors also help owners assess investment options by getting quotes from suppliers and assisting with loan applications. These energy auditors are, by design, not in the business of installing solar to prevent conflicts of interest and build confidence among potential applicants.

To date, this approach has been quite successful in identifying additional projects. New projects financed as a result of these services include the installation of LED lights and

solar panels and the creation of systems at a sports club to turn off freezer facilities and stadium lights when the space is not in use, among others.

All projects that the fund finances must contribute to the aims of the Sustainability Agenda approved by the City Council in 2015. Projects worth between EUR 200,000-500,000 are judged according to the environmental effect per euro invested and the amount of co-investment involved, with higher levels of co-investment generating a better rating. This competitive element helps to incentivize improvement on the proposals. Projects under EUR 200,000 must only demonstrate they clear a hurdle of 1 tonne of CO<sub>2</sub> per EUR 35 (USD 37) saved. Before a loan is agreed upon, the business case must be robust. The energy savings and or revenues from selling energy resulting from a project should be enough to pay interest and amortisation.

Borrowers must repay Sustainability Fund loans within 15 years. So far, no funded projects have failed to meet their financial obligations.

## Results

The AKEF and Sustainability Fund have invested in over 65 projects in the field of climate, sustainability, and air quality totalling over EUR 30 million (USD 32 million), which translates to nearly EUR 30,000 (USD 32,000) per day.

## Reasons for success – AKEF

- Amsterdam was successful in identifying a gap in the financing available for commercial sustainability projects, and AKEF was able to fill this financing gap with commercial loans.
- As the market has evolved and traditional lenders have entered the sustainability financing sphere, AKEF's fund managers have kept the fund agile and responsive. AKEF has shifted away from predominantly funding the 'low hanging fruit' of sustainability like solar energy, as debt from mainstream lenders has become far cheaper since the fund's establishment. AKEF has instead started to specialize in financing more innovative projects with a long-term view, which require more research, time, and assistance from fund managers.
- AKEF has learned that investing time and resources in project preparation, particularly in the case of innovative and untested project types, yields a higher success rate. Business owners often focus on strategy or product development, and pay less attention to building a comprehensive financial plan for the company's development. Banks will not invest the effort required to develop solid business plans in cooperation with these prospective loan applicants and therefore will not fund these projects. Without the AKEF fund managers pushing for the 'professionalization' of the proposals, many project proposals would not come to fruition. As part of AKEF's mission is to fund projects with an

environmental benefit that cannot receive funding through other means, making this investment in project preparation contributes to the fund's overall success.

### **Reasons for success – Sustainability Fund**

- The city financing low carbon projects provides a clear signal to banks, which are still reluctant to invest in these projects. Energy efficiency projects are particularly attractive, as they provide a reliable return on investment through the savings they generate.
- Communications play a key role. The city allocates money to increase the fund's visibility through a variety of means: a dedicated website, community and local newspapers, social media, project launches, and other events attended by key staff and media.
- Installation companies and stakeholder networks that promote sustainability are important partners that can help identify project opportunities.
- The fund builds capacity among potential applicants to establish a consistent pipeline of projects to finance. Free energy audits help demonstrate the financial benefits of energy production or energy saving projects to building owners. This service helps relevant stakeholders decide to invest in sustainability measures for their buildings.
- Traditional financiers typically do not undertake investments under EUR 100,000 (USD 106,300). The Sustainability Fund offers loans as small as EUR 10,000 (USD 10,630), enabling smaller projects to proceed with affordable financing.
- Applications for loans are often poorly substantiated. To help, an easy-to-use, business case Excel template is made available on the website, including examples of successful applications.
- Prospective applicants can always contact the fund team for help and guidance.
- To increase the speed of implementation for projects that involve multiple partners, a subsidy of up to EUR 15,000 (USD 16,000) is available to hire an advisor to write a project plan and manage the project.

### **When/Why a city might apply an approach like this**

Amsterdam's approach to a city climate fund has been particularly effective in engaging the community to make green finance available for a more diverse group of stakeholders. The city has created loan funds to finance projects that are too small to qualify for traditional financing, making energy efficiency retrofits and renewable energy projects more affordable for SME's and individual residents. Amsterdam is also investing in projects and companies with risk profiles or returns that have less historical precedent and are therefore more expensive to finance through traditional means, like circular economy businesses and innovative renewable energy technologies. The choice to offer specialized technical assistance and free energy audits has further benefited the city by demonstrating an on-going commitment to engage with and support city stakeholders, while securing a pipeline of viable projects to fund.

### **Additional instruments**

Although technically not part of the Sustainability Fund or AKEF, Amsterdam also maintains the Amsterdam Energy Loan. This provides low interest loans to homeowners, Homeowners Associations (HOA), and small private landlords for works such as solar panel installation, which make up 75% of the projects, insulation, and projects without a positive business case like window frame renovations. Energy loans range from EUR 5,000 to 15,000 (USD 5,300 – 16,000) per household. There is no minimum GHG savings requirement.

Amsterdam has found, however, that homeowners and other groups eligible for such loans have not taken advantage of this program at the scale the city government expected. The city has noted that residents feel little urgency to take the steps to install solar or conduct energy retrofits. In response, Amsterdam is currently considering new incentives for solar deployment as well as policy instruments that will make it easier for residents and other small-scale electricity consumers to install solar panels.

Finally, Amsterdam co-funded three rounds of the Rockstart Accelerator Smart Energy-program. This is an annual intensive programme lasting six months in which ten sustainable energy start-up enterprises from around the globe receive training, mentoring, legal, financial and fiscal support and the chance to pitch their ideas to investors. The companies offer 8% of their shares in return for programme participation.

### **3.6 Finance innovative solutions**

*Structure money creatively and allocate a part of the fund to innovation, incubation and capital mobilisation. **Finance innovative solutions** to de-risk green technologies, incubate climate solutions, and demonstrate low-carbon investment opportunities.*

#### **Case Study: Toronto Atmospheric Fund (TAF)**

**Summary:** The Toronto Atmospheric Fund has thus far invested CAD 60 million (USD 45 million) in low-carbon projects, supporting 152 Mt of GHG reduction opportunities, CAD 55 million (USD 41 million) in energy savings for the City of Toronto, and the incubation of several pace-setting projects that have helped achieve significant community-wide GHG reductions. TAF also attracts additional funding for various projects from governmental agencies, foundations, and private sector corporations.

The City of Toronto aims to reduce its emissions by 30% by 2020 and by 80% by 2050, based on 1990 levels. The goal of the fund is to advance local solutions to climate change and air pollution by supporting community innovators and de-risking low-carbon strategies and opportunities. TAF focuses on renewable energy, energy efficiency, low-carbon transportation solutions and projects that improve air quality, using a variety of

approaches to demonstrate and de-risk solutions including investment, technical trials, policy reform, and social engagement.

**Value:** TAF is currently CAD 25 million (USD 19 million), originally capitalised through a CAD 23 million (USD 17 million) sale of a surplus city-owned property.

**Structure:** TAF started operating as a grant-making organisation, but quickly shifted to using its own capital, leveraging additional capital from the public and private sector, as this approach provided more capacity to scale low carbon solutions. For a quarter century, long before the term “impact investing” was coined, TAF has been making investments that generate financial and environmental return on investment while demonstrating low-carbon investment opportunities for the wider market. As a non-share capital corporation with governance accountability to the City of Toronto, TAF operates as an ‘arm’s-length agency’, with an independent Board of Directors made up of five Councillors and seven citizens appointed by City Council. TAF does not receive any funding from the City’s tax base – it is a revolving loan fund and its operating revenue originates from returns on investment of the endowment and fundraising for special projects.

TAF manages a diverse investment portfolio including bonds, equities and direct investments (loans and other instruments). In the latter category, CAD 19 million has been earmarked for financing energy efficiency retrofits. Two standing committees assist the Board of Directors: the Grants & Programs Committee recommends projects that receive investment and the Investment Committee recommends TAF’s investment policy and all investment decisions. TAF staff are responsible for fundraising to attract external resources.

TAF has three core programmes: incubating climate solutions, mobilising financial capital, and mobilising social capital.

### **1. Incubating climate solutions**

**FleetWise EV300:** In 2006, when there were still many questions and uncertainties regarding the use of electric vehicles, TAF worked with public and private fleets to investigate the technical and business case for electric vehicles, developing a decision support set of tools that has helped them assess the best way to integrate electric vehicles into their fleets, identify suitable models, train drivers, and track performance.

**LightSavers<sup>28</sup>:** Beginning in 2006, TAF focused on de-risking the use of LED lighting in outdoor applications considering technological and financial perspectives. A pilot project collected rigorous data from advanced lighting trials in five Greater Toronto Area (GTA) municipalities, including Toronto. The results demonstrated that LED lighting combined with advanced controls such as motion sensors could cut the energy demand

of lighting by 50-70%. LightSavers was licenced in 2012 to the Canadian Urban Institute (CUI) for national roll-out, and to The Climate Group for Europe and Asia.

TowerWise<sup>29</sup>: This program, in operation since 2008, focuses on accelerating energy efficiency retrofits in high-rise residential buildings. The project is building detailed case studies of retrofits in ten buildings, including seven owned by Toronto Community Housing Corporation. The cases include analysis of technical performance and business case outcomes. In partnership with the University of Toronto, this project is also investigating the impacts of the retrofit on indoor environmental quality.

Other incubated projects include: Pumping Energy Savings, Solar City and TransformTO<sup>30</sup>.

## **2. Mobilising financial capital**

The aim of this program is to use TAF's innovation capacity and asset to directly invest in projects that both earn TAF a return and demonstrate and de-risk low-carbon financing and investment opportunities.

PACE: TAF launched Collaboration on Home Energy Efficiency Retrofits in Ontario (CHEERIO)<sup>31</sup> in 2012, with support from Natural Resources Canada and Clean Air Partnerships. CHEERIO enabled collaboration between various Ontario jurisdictions on considering the use of local improvement charge (LIC) financing for energy efficiency retrofits. LIC works by providing low interest rates for 10 years or more, and the loan is repayable through instalments on the borrowers' property tax bill. In 2014, TAF funded the establishment of a City of Toronto pilot (Home Energy Loan Programme – HELP<sup>32</sup>) to test the use of LIC for financing energy efficiency, enabling 1000 homes to benefit from energy efficiency improvements.

Efficient new construction: TAF worked with Tridel (one of the biggest developers in Toronto) on overcoming the split-incentive barriers to making improvements between developers and owners. Through the Green Condo Loan<sup>33</sup> scheme, TAF provided a loan to Tridel representing the incremental cost of making the properties greener. This loan was then transferred to the building owner, Condominium Corporation (CC). CC repaid the loan through the savings on their bills. Importantly, property prices were not increased and the project enabled savings of CAD 500,000 (USD 373,000). A major success of this scheme was that it also helped establish a local green building standard that was 25% better than the provincial building code.

Rooftop solar: TAF invested in Pure Energies<sup>34</sup>, a solar panel and sustainable energy start up with no track record or security. To address risk concerns, it developed an innovative structure, creating a mini-revolving fund to finance the installation of the first five solar systems. The feed in tariffs were provided as security. The process was then repeated

with the next five systems. Pure Energies expanded quickly across Canada leading to the company's recent acquisition by NRG.

Non-debt retrofit financing: TAF developed the Energy Saving Purchase Agreements<sup>35</sup> (ESPA), a new non-debt structure to finance up to 100% of the costs of energy retrofits in the high-rise sector. TAF maintained ownership of necessary equipment until the loan was repaid. To address risk concerns, they also developed specialised insurance, sought third party validation, worked closely with engineers, building owners, investors, insurers, and performed monitoring and verification. The scheme has been used by 20 buildings so far and TAF is in the process of incubating a new company to scale up the ESPA programme.

### 3. Mobilising social capital

ClimateSpark: The ClimateSpark Business Challenge (2011) and the ClimateSpark Social Venture Challenge (2012) engaged 'the crowd' in identifying and supporting for-profit and social ventures, respectively, whose products and services could result in significant GHG emissions reductions if scaled up<sup>36</sup>.

Move the GTHA<sup>37</sup>: This collaboration, incubated by TAF and community partner Evergreen Cityworks in 2012, established a 12-party multi-stakeholder group that called for increased Provincial investment in regional transit. The Province subsequently committed CAD 16 billion (USD 12 billion).

### Results

Since inception, TAF has invested CAD 60 million (USD 45 million) in low-carbon projects, which has supported at least 152 Mt of GHG reduction opportunities city-wide and CAD 55 million (USD 41 million) in direct energy savings for the City of Toronto.

### Reasons for success

- Having a certain level of independence from the City of Toronto allows TAF to accept greater risk, to move more quickly to seize opportunities, and to innovate. This allows TAF to 'de-risk' strategies before broader adoption – TAF can 'fail small' to allow the City to ultimately 'succeed big'.
- Maintaining an endowment and independent decision-making over its use gives TAF the ability and confidence to develop and drive projects over the extended time periods needed to develop and refine promising new approaches.
- TAF's Investment Committee, comprised of financial experts and fiduciaries who provide guidance and oversight on a voluntary basis, has been key to ensure that the fund makes prudent investments, including the development of innovative structures and transactions that will both demonstrate new low-carbon investment approaches and opportunities and yield TAF the return needed for its operations.

- TAF can invest both money and other resources, including its capacity for policy reform and convening, to advance low-carbon solutions.
- Because TAF's own asset is small, TAF has realised that its role is to mobilise others' capital. This realisation allowed TAF to focus its attention on enabling larger and bolder schemes and how to bring them to scale, integrating partners and lessons on scale-up strategies into the very early planning stages of all new projects and programs.
- Social innovation complements financial innovation, because concepts like design thinking and skills that support work across multiple sectors are essential to securing the partners needed to create, refine and promote new financing approaches.
- TAF has embraced the importance of communicating a range of benefits associated with deep carbon reduction approaches – including profitability, social improvements (for example related to housing renewal), and public health benefits, which helps to broaden public support for low-carbon actions.
- Having a flexible array of tools at our disposal including grants to build community capacity and support policy reform, internally-managed projects to incubate under-supported actions, and financing to demonstrate and de-risk impact investment opportunities allows TAF to customise its approach to respond effectively to each unique opportunity.

### **When/Why a city might apply an approach like this**

Creating a small, independent unit such as TAF allows the space for innovation and risk-taking that is often difficult to support within standard city departments and divisions. Partnering with external funders or setting aside a portion of a windfall asset – as was done in the TAF case – helps allow the necessary 'arms-length' status.

Creating an independent agency can be challenging and alternative options could include:

- Seeking an external partner to set up an innovation agency that serves as a hub for design thinking and pilot testing to explore financing challenges prescribed by the city.
- Leveraging local professional financial talent through the development of a finance innovation advisory group to support the design of new municipal incentives or granting programs. For example, extending resources by using lending tools or partnering with the community to leverage existing funds.
- Participating in multi-stakeholder collaborations to examine what role the city could play in creating space for more creative local financing to take place.

### 3.7 Further Good Practices

As evidenced in the previous section, the funds launched by the five cities have already resulted in significant environmental, social, and financial benefits. Across the years, these funds have also acquired important knowledge on additional criteria for success and the steps that other cities looking to implement local funds should take to maximise their impact. These good practices are described below.

#### **Establish funds at the right scale**

City climate funds need to be established at appropriate scale, particularly in the current climate of low interest rates. The right scale will depend on the fund's unique mandate and the level of operational budgets they require. Though these funds can be costly to operate, the operational budgets are a relatively fixed cost (with the exception of marketing and communications budgets). As the capital scale increases but the fixed overhead remains the same, the fund's profitability should improve.

#### **Fund management and expertise**

Having expert financiers, professional fund managers, and an investment committee on board is key to ensuring that the fund has a good investment strategy and protects its capital. Hiring professional fund managers can help build confidence with private capital providers and assure them that the fund will generate sufficient returns on their investments. Fund managers' remuneration should be tied to environmental performance metrics, for example achieved GHG reductions over a five-year period.

Most borrowers will also need technical and project management support and thus successful city climate funds will rely on having effective multidisciplinary teams, including engineering, business development, and other professionals.

#### **Independence from political decision makers**

To attract private capital, funds should be structured and managed in a way that limits political interference in project investment decisions. In order to gain credibility in the market and attract private capital, city climate funds have to be regarded as independent entities that will make investment decisions based on transparent criteria relating to the viability of the projects and the ability to deliver on predefined policy objectives.

City climate funds are therefore often set up in a way that investment decisions cannot directly be influenced by the city itself. Some funds have Steering Committees that allow the city to supervise certain parts of the funds' activities and the city can also play an important role in working with the fund to develop investment criteria that integrate the city's environmental, social and economic policy objectives.

### **Balancing borrower needs and transaction costs**

As mentioned above, funds should focus on providing a full package of services to better enable borrowers and building owners to make improvements to their properties that reduce energy consumption and GHG emissions. However, tailored products can generate higher transaction costs and cities should look for opportunities to keep these as low as possible. One option is to integrate energy efficiency financing with other types of financing that borrowers are more familiar with, such as mortgage financing.

### **Partnering with other teams and organisations**

Most city funds have limited resources and big ambitions. Partners are thus essential to ensure that the fund extends the city's sustainability goals and achieves its mission. Cities should look for opportunities to work with existing teams within their local governments, as well as other external organisations to explore how they could support each other through amplifying communications, project identification, attracting new capital, or financing projects together.

### **Communications**

In times of limited government budgets, infrastructure project developers increasingly employ a 'product & marketing' approach where attractive project proposals are pitched to potential investors in order to obtain funding. Equally, city funds as potential capital providers need to market themselves in order to attract applications for funding. Especially in the case of targeting smaller scale projects, it is instrumental that potential applicants and citizens know about and understand the way city funds operate and the opportunities they offer. A good communication strategy helps build a brand name and increase visibility in the market. It can also help catch the attention of potential partners from the private sector.

## 4 FURTHER READING

### **Sustainable Melbourne Fund:**

Environmental Upgrade Agreements Brochure:

<http://sustainablemelbournefund.com.au/wp-content/uploads/2014/03/making-access-to-retrofits-easier-EnvironmentalUpgradeFinanceBrochure.pdf>

Solar case

studies: <https://www.melbourne.vic.gov.au/Sustainability/Solar/Pages/CaseStudies.aspx>

SMG resources, brochures, guidelines, fact sheets and videos:

<http://sustainablemelbournefund.com.au/resources/>

Better Building Finance: <http://betterbuildingfinance.com.au/>

### **London Green Fund:**

RE:NEW Guide to Funding and Financing Opportunities for Energy Efficiency Retrofit in London: [https://www.london.gov.uk/sites/default/files/150316%20Funding%20Guide\\_Jan2015.pdf](https://www.london.gov.uk/sites/default/files/150316%20Funding%20Guide_Jan2015.pdf)

Financial Instruments 2014-2020 under European Structural and Investment Funds:

[https://www.fincompass.eu/sites/default/files/publications/presentation\\_201501\\_Brussels\\_ESIF\\_Kenro\\_y-Quellenec-Reid.pdf](https://www.fincompass.eu/sites/default/files/publications/presentation_201501_Brussels_ESIF_Kenro_y-Quellenec-Reid.pdf)

LEEF fund: <http://www.leef.co.uk/pdf/LEEF.pdf>

### **NYC Energy Efficiency Corporation (NYCEEC):**

Select NYCEEC case studies: <http://nyceec.com/our-impact/>

### **Amsterdam Climate & Energy Fund:**

Sustainability fund projects examples: <https://www.amsterdam.nl/wonen-leefomgeving/duurzaam-amsterdam/voorbeelden/>

AKEF projects examples: <http://www.akef.nl/en/investments/>

### **Toronto Atmospheric Fund:**

TAF blog: <http://www.taf.ca/>

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1 "New Perspectives on Climate Finance for Cities", Siemens, 2016

3 All foreign currency conversions are based on exchange rates from 23 November 2016 and were taken from [www.oanda.com](http://www.oanda.com)

4 "1200 Buildings", <http://www.melbourne.vic.gov.au/business/sustainable-business/1200-buildings/Pages/1200-buildings.aspx>

5 "Smart Blocks", <http://smartblocks.com.au/>

6 "CitySwitch Green Office", <http://www.cityswitch.net.au/>

7 "Sustainable Melbourne Fund", <http://sustainablemelbournefund.com.au/>

8 "Solar Finance", <http://sustainablemelbournefund.com.au/solar-finance/>

9 "Strata Building Upgrade Finance", <http://sustainablemelbournefund.com.au/strata-building-upgrade-finance/>

10 "A New Way of Doing Business", <http://betterbuildingfinance.com.au/>

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- 11 Foreign currency conversions for the London Green Fund are as at 15 July 2016 when the content for this Fund was last updated.
- 12 "RE:FIT", <https://www.london.gov.uk/what-we-do/environment/energy/energy-buildings/refit>
- 13 "London Waste and Recycling Board", <http://www.lwarb.gov.uk/>
- 14 JESSICA (Joint European Support for Sustainable Investment in City Areas) is an initiative developed by the European Commission and the European Investment Bank (EIB), joined by the Council of Europe Development Bank. It allows EU Member States to allocate funding from their European Regional Development Fund (ERDF) programmes to Urban Development Funds (UDFs), along with funding from other public and/or private sources. The UDFs invest the money (equity, loan, and/or guarantee) in urban development projects.
- 15 "Governance and Spending", <https://www.london.gov.uk/about-us/governance-and-spending>
- 16 "London Waste and Recycling Board", <http://www.lwarb.gov.uk/>
- 17 "Foresight Environmental Fund", <http://www.foresightgroup.eu/institutional/our-business/sector-overview-environmental/foresight-environmental-fund>
- 18 "The London Energy Efficiency Fund (LEEF)", <http://www.leef.co.uk/>
- 19 For example, NYCEEC is financing partner for the NYC Retrofit Accelerator: a one-stop resource provided by the City of New York to help owners and operators of privately owned buildings reduce operating costs and increase the sustainability of their properties through energy and water upgrades. For more information: <https://retrofitaccelerator.cityofnewyork.us/>.
- 20 Dollar-figures are cumulative in US currency and reflect total project costs. Timeline reflects NYCEEC's fiscal year, July 1 to June 30. As of 22 November 2016.
- 21 As of 22 November 2016. Environmental numbers are lifetime. Energy savings are source-based.
- 22 Number of transactions includes 47 individual projects and 7 partner loan programs. Equipment loans include pre-development loans. As of 22 November 2016.
- 23 All foreign currency conversions for this section and the remainder of the document are based on exchange rates from 23 November 2016 and were taken from [www.oanda.com](http://www.oanda.com)
- 25 "Amsterdam ArenA", <http://www.akef.nl/en/folio/amsterdam-arena/>
- 26 "OrangeGas", <http://www.akef.nl/en/folio/orangegas/>
- 27 "Duurzaamheidsfonds", <https://www.amsterdam.nl/wonen-leefomgeving/duurzaam-amsterdam/duurzaamheidsfonds/>
- 28 "LightSavers Archives", <http://taf.ca/tag/lightsavers/>
- 29 "TowerWise New Buildings", <http://taf.ca/projects/towerwise/>
- 30 "TransformTO", <http://toronto.ca/transformto>
- 31 "Collaboration on Home Energy Efficiency Retrofits in Ontario (CHEERIO)", <http://www.cleanairpartnership.org/cheerio>
- 32 "Home Energy Loan Programme (HELP)", <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=7e00643063fe7410VgnVCM10000071d60f89RCRD>
- 33 "Green Condo Loan", <http://www.towerwise.ca/wp-content/uploads/2013/05/Green-Condo-Loan-Fact-Sheet.pdf>
- 34 "PURE Energies is committed to being the trusted energy advisor to North American homeowners", <http://pureenergies.com/ca/about-us/>
- 35 "Getting to "yes" on energy efficiency retrofits – the TAF ESPA", <http://www.toatmosphericfund.ca/2012/10/23/getting-to-yes-on-energy-efficiency-retrofits-the-taf-espa/>
- 36 More details about the programme can be found here: [http://www.climatespark.ca/files/cs\\_final\\_report.pdf](http://www.climatespark.ca/files/cs_final_report.pdf)
- 37 "Move the GTHA", <http://movethegtha.com/>