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Executive Summary

London has set a target to become a net zero city by 2030. This ambition will require investment in infrastructure of £75 billion to 2030 and up to £108 billion to 2050. While this investment will not solely be borne by London's government or the public purse, delivery of the net zero ambition will require the Greater London Authority (GLA) to work with local and national government, utilities, business, finance institutions and resident Londoners to find the right funding mechanisms to support the infrastructure that is needed.

High levels of finance and new business models will need to be mobilised extremely quickly to enable the level of action needed. Therefore, the GLA has partnered with the Green Finance Institute (GFI) to explore methods of attracting private finance sources to invest in London's environment priorities.

After engaging with private sector investors through a series of interviews and roundtables, conducting extensive desktop research, and consulting London local authorities, the GFI provided six different options for the structure of a London Climate Finance Facility (LCFF). Research indicated that a finance facility, accompanied by a Technical Assistance structure to develop a pipeline of projects, has the potential to attract a large quantum of private investment, in a similar fashion to that achieved through various place-based facilities internationally.

To maximise the effectiveness of achieving London's goals, the facility should facilitate collaboration between the GLA Group, London local authorities, public bodies and private sector investors in the decision-making process – discussion with investors indicates this codesign approach is likely to increase confidence and the volume of private capital mobilised. The GFI recommended that an appropriate balance of involvement between the different parties would be best achieved through the establishment of a new, arm's length facility that is overseen by the GLA (GFI's option 2b).

However, given that establishing a new facility generally takes a long time and London has pressing investment needs, the GFI suggested that funds could initially be managed by the GLA team (GFI's option 1a), whilst establishing independent investment funds that would be managed by independent fund managers (GFI's option 1b). The GLA should simultaneously begin the process of establishing a new facility so that the transition to option 2b can be done quickly and seamlessly.

To support the successful operation of any finance facility, it is essential to have a pipeline of bankable projects. The GFI recommends that a successor to the Mayor's existing Accelerator Programme is developed as that is the primary source of development funding needed to feed the project pipeline. The technical assistance component of the facility will be crucial in ensuring that total financing costs for the project cycle are lower than alternative funding options (e.g. when factoring in costs associated with the development of projects submitted to other funding sources like the Public Works Loan Board (PWLB)), thereby enabling the facility to provide lower cost financing to London's green projects.

Introduction

Cities around the world have a leading role to play in reducing carbon emissions and ensuring that global warming does not exceed 1.5 degrees Celsius compared to pre-industrial temperatures. Recognising that this is likely the greatest challenge that London will face this century, the Mayor of London has committed to a 2030 net zero target in his manifesto – an ambition estimated to require £75 billion in infrastructure investment by 2030¹. The current global approach to city development and decarbonisation is heavily reliant on public funding; but unless this model is transformed so that the majority of the investment required comes from the private sector, funding this transition will be impossible.

¹ Greater London Authority, London Net Zero 2030: An Updated Pathway: https://www.london.gov.uk/sites/default/files/london_net_zero_2030 - an_updated_pathway - gla_response_1.pdf

Mobilising private sector capital will be the defining factor in dictating how successful London will be in meeting its net zero goals. Financial institutions will need to broaden and deepen their investments to ensure that climate-related projects have access to competitive and affordable investment. The Mayor has an important role to play in creating the enabling environment that allows collaboration between public and private sector investors to create solutions for investing in London's climate projects at scale.

Recognising the urgent need for action, the Greater London Authority (GLA) partnered with the Green Finance Institute (GFI) to explore innovative ways to mobilise private sector investment, building upon the recommendations made by the London Sustainable Development Commission (LSDC) in their report 'Financing for a Future London'². This report identified three main obstacles it considered are holding back progress towards a just transition to net zero in London:

- A lack of co-ordination across London local authorities' boundaries as well as between the GLA and the local authorities, along with a lack of capacity and skills within the public sector to develop a pipeline of financeable climate related projects.
- Insufficient or outdated infrastructure that is not capable of supporting the energy transition across the energy utilities but also waste, transport and flood defence. Again, this involves a extensive coordination and integrated effort across multiple stakeholders, especially utilities.
- 3. Limited incentives for the financial sector to consider climate projects as they are perceived to be riskier than traditional 'grey' projects and their benefits are currently not well monetised. The financial sector needs to be actively incentivised through financial instruments that allow them to reduce their risk on these projects and educated on the consequences to business and profitability if they do not prioritise climate investment.

As a catalyst of public and private efforts to address barriers to capital mobilisation into climate solutions, the GFI is well placed to explore solutions to these barriers given its proximity to both the private and public sectors – leveraging its ability to convene the two and stimulate meaningful conversation. The GLA mandated the GFI to use their green finance expertise to interpret the recommendations from the LSDC report and turn them into implementable solutions that London could adopt to deliver finance to support scaled climate action. The GLA asked the GFI to use its unique position to engage stakeholders from the public and private sector, learning what their expectations of a finance facility would be so that a market approved solution could be designed. Taking these consultations into account, coupled with learnings from international case studies, the GFI's task was to present a set of options that could help the GLA to mobilise significant capital to close in on the £75bn investment required by 2030.

This short report summarises the work undertaken by the GFI to deliver a set of recommendations to the GLA on how to design and operationalise a London climate finance facility. It begins by mapping out the barriers that London faces in achieving its net zero goals, explaining that the Mayor has made successful strides in the right direction but also recognising that much more needs to be done through his ambition to launch a finance facility. The report then breaks down the different factors that influenced the recommendations made to the GLA, such as learnings from international case studies and the LSDC's report, findings from consulting private and public key stakeholders, and findings from a roundtable organised by the GFI on behalf of the Mayor's office in October 2021. Finally, the report explains the recommendations made to design and operationalise the facility.

² London Sustainable Development Commission, Financing For a Future London:

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The Challenge

The GLA and London's local authorities have a clear sense of the suite of actions that require external funding as part of a broader vision to reach net zero. Through stakeholder engagement with public and private financiers as well as extensive research on other place-based finance facilities, the GFI has heard first-hand from prospective funders about their perceptions of the risks associated with funding net-zero aligned infrastructure at the municipal level.

The GFI, in partnership with Innovate UK, has previously undertaken extensive research and published 'Mobilising local net zero investments' to explore the investment barriers facing local environmental projects and found one main blocker - insufficient public capital available to local authorities to develop and fund projects.³

Conversations and previous research conducted in tandem with Innovate UK revealed two other obstacles – (1) inadequate local authority in-house and/or procurement capacity to provide the engineering technical assistance required to develop projects to a shovel-ready stage and (2) limited local authority expertise in commercialising climate-related projects in a way that can be packaged up for financial institutions to finance.

These two barriers should be addressed first to ensure that local authorities can develop bankable, investment-ready project pipelines capable of attracting private investment, though that is not to say that the final barrier is less important. A long-term solution to these barriers would be the establishment of regional technical assistance facilities that provide development funding and expertise so that local authorities can access the capacity and expertise required to develop their climate related projects. However, this report addresses the funding gap, rather than the technical assistance gap.

The GLA have been active in developing solutions to the barriers above through the establishment of various investment and technical assistance mechanisms. For example, the Mayor's Energy Efficiency Fund (MEEF)⁴ is a £500 million investment fund funded by the European Regional funds. MEEF provides low cost, flexible financing Accelerator Programmes develops a pipeline of viable climate related projects for investment by MEEF and other sources of green finance but their funding comes to an end in 2024 and the GFI recommends that a successor to these programmes is prioritised. Currently, there are two Retrofit Accelerators that fund energy efficiency projects in the public sector and social housing and a third Accelerator Programme provides techno-economic support for local energy projects, especially district heating networks and renewable energy capacity.

³ Green Finance Institute & Innovate UK, Mobilising Local Net Zero Investments: https://www.ukr.org/wp-content/uploads/2022/07/JUK-18082022-

Greater London Authority, Mayor of London's Energy Efficiency Fund: https://www.london.gov.uk/programmes-andstrategies/environment-and-climate-change/climatechange/zero-carbon-london/mayor-londons-energy-efficiency-fund



Whilst London local authorities and other public bodies use the above programmes for their project development, they often fund the capital element of their climate related projects by borrowing from the Public Works Loan Board (PWLB) and applying to grant programmes as and when they are available from central government. Although the PWLB offers sub-market rate financing, in many cases, this source of finance is unaffordable for London local authorities to fund the development and capitalisation of their climate projects. Therefore, there is a need for a finance facility that offers lower rates than PWLB to capitalise projects, with a technical assistance arm to support Local authorities to develop their projects.

As a result, immediate action is required to ensure that the transition costs can be financed in time. The GFI developed six options for a London climate finance facility that would use public capital to mobilise private investment into London's climate projects. The GFI's options are listed below:

- 1. A mechanism wholly owned and managed by the GLA, established as a subsidiary within the GLA
 - a. Managed internally
 - b. Managed externally
- A mechanism overseen by the GLA but established as a separate, arm's-length entity and operated by an independent fund manager
 - Through the scaling up of an already existing facility
 - b. Through the establishment of a new facility
- A mechanism jointly overseen by the GLA and London's local authorities, established as a separate, arm's-length entity and operated by an independent fund manager
- A mechanism owned by its shareholders operating completely independently from the GLA with the Mayor of London as a non-executive director

According to extensive investor consultations, option 4 has the greatest potential for attracting the most private investment, but is also recognised as unlikely to achieve the desired impact of the facility. This is because option 4 does not give the GLA enough control over the types of projects that are proposed by the facility, meaning that hard-to-abate sectors may be ignored in the pursuit of easier to finance opportunities, does not give the GLA enough control over the types of projects that are proposed by the facility, meaning that hard-to-abate sectors may be ignored in the pursuit of easier to finance opportunities. Although option 3 has moderate potential to attract private investment, it would be constrained largely due to powersharing with the local authorities who might have different expectations of the finance facility. Option 2b offers the best alignment of interest between the different stakeholders, promising to mobilise significant private capital while giving the GLA reasonable control over the facility. However, given that setting up a new facility is time intensive, there is more benefit in having funds initially managed by the GLA (option 1a) to allow immediate investment to flow into shovel-ready projects. Simultaneously, the GLA should work towards a short-term transition to option 1b by establishing investment funds that can be managed externally, and a longer-term transition to option 2b. The London climate finance facility will build on the city's previous successes in financing green projects and addresses each of the investment barriers above. If operationalised and managed correctly, this approach could mobilise a significant proportion of the investment needed for getting to net zero.

3

Types and Roles of Financing Facilities and International Case Studies

The US Local Climate Finance Facilities, such as the New York Green Bank, DC Green Bank and Connecticut Green Bank, provide excellent models for the structuring of any proposed London climate finance facility.

While these green finance initiatives were established with only modest levels of capitalisation, mainly from public and state funds, many of them have scaled up quickly, tripling or quadrupling in size with subsequent contributions from private finance. For example, the New York Green Bank started with £193.1 million and now holds £890 million in overall investments and has mobilised £4 billion. Importantly, many of these institutions have succeeded in reducing the contributions from public funds over time while greatly increasing the contributions from private funds and their resulting leverage ratios.

Green bank financing mechanisms give confidence to private investors by reducing real and perceived risk in climate-related projects, with the result that public financing gaps are increasingly filled with private finance. Once the entity or bank can show a track record of successful transactions and that they have a pipeline of bankable projects, more and more commercial lenders and private sector players are attracted to climate related projects and, consequently, increase their lending to the entity or bank, and in so doing creating a virtuous circle where increasing volumes of finance becomes available.

Two case studies of existing Finance Facilities operating in the United States

Case Study 1

New York Green Bank

The New York Green Bank (NYGB) is a \$1bn state-sponsored investment fund (and a division of the New York State Energy Research and Development Authority - NYSERDA) which works closely with the private sector to accelerate investments into New York State's clean energy markets, creating a more efficient, reliable and future-focused sustainable energy system. This successful public-private collaboration has transformed green financing in the state and injected dynamism into the renewable energy and environmental protection markets.

Case Study 2

DC Green Bank

In July 2021, Washington DC became the first city in the US to establish a government-funded green bank when its Mayor, Muriel Bowser, signed the District's Green Finance Authority Establishment Act. The purpose of the new bank is to drive much-needed energy efficiency improvements and the implementation of clean energy technology. It does this by leveraging private investment with attractive, de-risked financing, removing up-front costs for consumers and small business owners, and increasing the reach and impact of public investments. Since 2018 the bank has deployed £22.1m in loans to green projects, while maintaining its initial capitalisation of £92.9m.

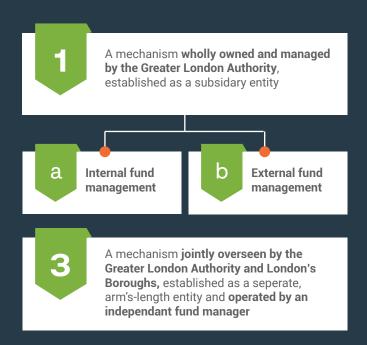
Options Analysis Report

The GFI was invited to advise on the establishment of a best-in-class finance facility for London in 2020.

Since then, the GFI has conducted a deep analysis of a variety of financing instruments used by other global cities, as well as extensive consultations with over 40 stakeholders – all in pursuit of the optimum structure for getting London to net-zero carbon by 2030. The Options Analysis Report identified six options for how best to structure, manage and operate a finance facility.

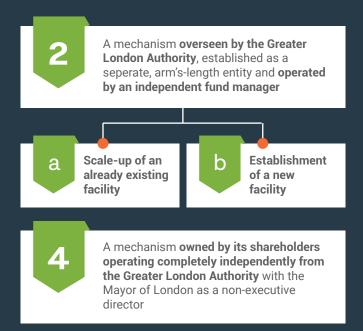
Each Option provides a different vehicle or "formula" for achieving the Mayor's climate goals, with the GLA taking more or less control of financing operations compared to its financing partners, and the private sector having a greater or lesser degree of freedom in setting criteria and selecting the project pipeline for funding.

The matrix below shows the four different approaches that the GFI identified for potentially structuring the facility and then with various possible organisational structures included as sub-options for 1 and 2.





The proposed financial mechanism would sit wholly within the GLA Group. There are two sub-options considered here: option 1a – Internal fund management, which means a centrally managed and wholly-owned subsidiary structure inside the GLA; and option 1b - External fund management, which means a centrally managed and wholly-owned subsidiary structure inside the GLA but with the fund management and investment decisions based on GLA investment strategy outsourced to financial professionals. Both options offer risks and benefits to the GLA.



Option 2 - A separate, arm's length entity (the 'collaborative' option):

This positions the proposed financial mechanism as more independent of the GLA - a separate entity managed and operated by an independent fund manager(s). There are two sub-options considered here: option 2a – scaling up and repurposing of an existing facility, which would have a broader mandate to finance London's green projects; option 2b - establishment of a wholly new facility. This option is not to be confused with establishing a Green Bank, which would require further investigation into whether the GLA has the necessary powers to pursue this type of solution. Instead, this should be viewed as an entity where funds are established and run by an independent fund manager, where the entity would be external (arm's length) to the GLA and the day-to-day activity would be operated by another organisation.

Option 3 - An arm's-length entity, including involvement of London local authorities:

This would enable London local authorities not only to be borrowers from the proposed facility, but also hold a potential role in the governance, decision-making, and capitalisation of the entity. The GLA would partner with interested local authorities (either directly, or indirectly via London Councils) in order to spread some of the exposure and risk of investment, combine borrowing power in order to source cheaper finance, maximise policy support to mitigate risk to project development and delivery, provide a united public sector interface for investors and a united front for discussion and engagement with government.

Option 4 - A facility owned by its shareholders (the 'private' option):

A facility owned by its shareholders operating completely independently from the GLA with the Mayor of London as a non-executive director. The facility would be established by the GLA as a stand-alone entity governed by a Board of Directors and owned by its shareholders in proportion to the equity and/or investment that they provide to the entity. This is the option that provides the private sector with the highest degree of involvement and freedom, particularly over the investment strategy, decision-making processes and the allocation of the funding portfolio. However, with very limited public sector involvement and no public sector capitalisation, it will not be able to provide the long-term low-cost flexible finance that is needed to develop and deliver the range of investments required, especially in those more immature markets where bankable projects will currently only deliver sub-commercial rates of return.

5

Capitalisation

During the development period for the facility, the GLA has prioritised supporting projects within the GLA group to ensure it maximises its contribution to net zero across its own organisations.

Under the working assumption that the London climate finance facility follows a progression from GFI's Option 1a (a subsidiary entity based inside the GLA, where funds are managed internally) to Option 2b (the establishment of a new, separate, arm's length entity), via Option 1b (a subsidiary entity based inside the GLA, where funds are managed externally), the GLA should initially seek to capitalise the facility using the strengths of its own balance sheet and public sources of capital. Since the facility will consist of public funds to begin with, the GLA is well suited to internally manage this fund given previous experience with similar, but smaller, initiatives. Following a review of the GLA's internal capacity and learning from lessons shared by senior management at other place-based climate finance facilities, in 2021, GFI recommended an enlargement of the GLA's climate finance team. This advice has resulted in the onboarding of new additional staff who act as liaisons between the GLA's Treasury and Environment teams. However, if the facility is to mobilise significant private capital in the future, it will ultimately need to shift towards GFI's option 2b where funds will be externally managed.

The GFI recommends sourcing further blended funding for Phase 2 of the finance facility, from a combination of existing GLA reserves or budgets matched with funds from capital providers either through (1) the issuance of debt in the capital markets (i.e., through a municipal bond) or (2) direct access to public sector providers, such as the UK Infrastructure Bank, and private sector providers, including but not limited to pension funds, insurance companies and investment banks. Following initial proof of concept and a demonstration of reasonable returns for market participants, including the success of MEEF and its predecessor, the finance facility can and should rapidly scale.

As previously mentioned, to ensure the incorporation of the expectations of the private sector, GFI extensively interviewed investors bilaterally and hosted virtual group conversations throughout 2020 and 2021. The most significant discussion, a virtual summit keynoted by the Mayor in October 2021, brought forward several key recommendations: the establishment of thematic investments, into different sub-funds, and as much standardisation as possible of projects to ensure the likelihood of a higher degree of private sector involvement in the facility. Participants thought it unlikely that the facility would be able to leverage the economies of scale needed to get to multiple billions if the private sector was given a "passive" role. They also recommended that the facility should have more than one fund - having two or three funds with different levels of risk and return would create opportunity and allow financiers to allocate capital as efficiently as possible. Within those funds, they suggested there might be multiple hurdle rates for different types of investors including a minimum rate of return, or "low downside floor", to address concerns about poor performance.

The private sector financiers interviewed during the GFI's investigation stressed the importance of risk sharing and/or de-risking mechanisms to unlock the flow of capital into climate related investments. To ensure that the barriers to the flow of private capital are unlocked, the GFI recommends that public funding is partly used to capitalise the facility so that it has sufficient risk-sharing ability – this could either come from central government in the form of a grant, or from the GLA's own balance sheet.

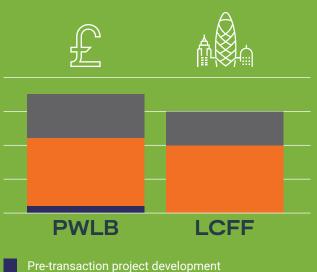
Finally, during both individual interviews and the roundtable, financiers indicated a clear preference for a finance facility established similarly to the structure identified in GFI's Option 2b. This sentiment was largely driven by concern around whether the GLA had sufficient internal human resource capacity or experience to manage such a large sum of money as well as a concern over the potential for political interference that might undermine the facility's financial profitability.

Technical Assistance

One of the biggest barriers to London achieving its net zero goals is the lack of a shovel-ready project pipeline. Projects are underdeveloped due to a lack of capacity, skills and technical assistance funding. Therefore, the GFI would recommend that the London climate finance facility has a technical assistance component to support project development across the project lifecycle. This is particularly important given that the current technical assistance support available (the Mayor's Accelerator Programmes) will run out of funding in 2024.

The technical assistance component is also important to the offering of the facility. This is because the facility will be able to offer a more holistic approach to financing, whereby financing – in the form of grant funding for technical assistance coupled with sub-market repayable finance – is provided for the completion of the entire local authorities separately identify funding for project development (technical assistance) and subsequently approach differentiates the proposition from the current The below schematic shows how funding might compare between a one-stop shop for technical assistance and funding (as proposed) and funding currently available from other lenders.

Full Cost of Financing Illustrative Example: LCFF vs Traditional (£millions)



Scaling the Facility

Based on the three distinct sectors identified by the net zero pathway and alignment with existing MEEF priorities and GLA support, the GFI advises the facility is initially structured around these three investment windows of opportunity, each with an existing pipeline of bankable projects continuing to be developed and ready for investment and delivery.

Key investment sectors:

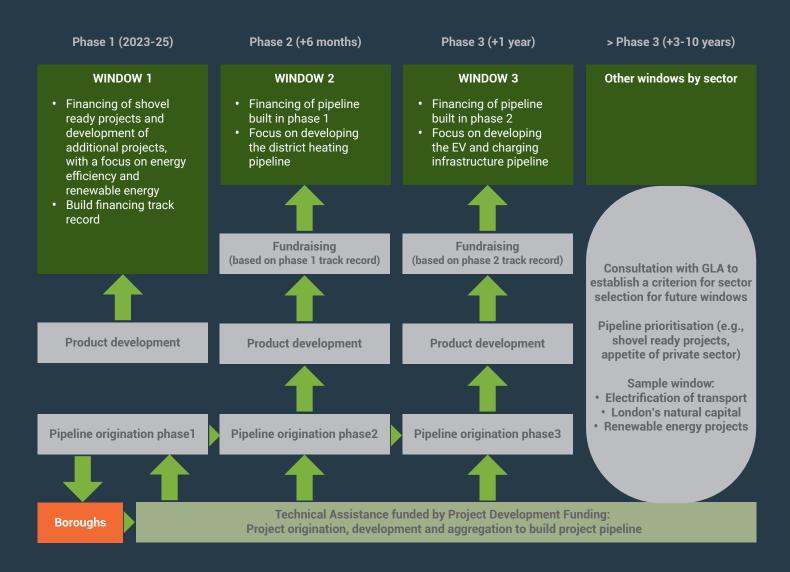
- Buildings and renewable energy: extensive, large-scale retrofit of London's domestic, public sector and commercial building stock, to include energy efficiency, smart energy management, storage and flexibility, and low-carbon energy generation and/or supply.
- District energy networks, renewable energy generation and storage: creating a smart, integrated and flexible net-zero energy system through contributions such as renewable energy, energy storage, flexibility and district heating networks.
- Transport networks and charging infrastructure: enabling the switching to zero emission public and private methods of transit, especially electrification, through a network of accessible charging infrastructure at the same time as encouraging modal shift to active travel and public transport.

This narrower approach, with a smaller subset of eligible sectors, will give the new facility a strong chance of proving the approach in these areas of relative expertise and support the building of a track record, before expanding into other themes. In parallel the team managing the facility can work with colleagues across London to develop a robust and financially sustainable project pipeline aligned with the next tranche of themes such as adaptation and resilience, naturebased infrastructure, air quality and pollution control.



Capital Deployment

As set out above, the GFI recommends a sequenced multi-window approach, where each window will focus on projects from a specific sector(s), for different individual themes/sectors starting with retrofitting of social housing and public buildings; district energy networks and renewable energy capacity; and electric vehicles and charging infrastructure; before moving to other sectors that support either mitigation of or adaptation to climate change. Each would need to have a pipeline of projects being developed by dedicated GLA Accelerator Programmes. The diagram below provides an illustration of what that multi-windows approach could look like.





Options Analysis Recommendations:

Having taken international case studies, stakeholder engagement and desktop research into account, the message we are hearing from the market and the local authorities indicates that establishing a new 'arm's length' entity, or GFI's Option 2b in the report, offers the greatest alignment of interests between the GLA, the London local authorities and the financial sector.

However, given that setting up a new entity is time intensive and there is a need to mobilise funding as quickly as possible, the GFI recommends that the GLA initially pilot the concept through existing internal mechanisms by following an 'In-house' option where funds could initially be managed by the GLA team (GFI's Option 1a) whilst establishing the structure needed for investing funds via independent fund managers, or Option 1b. This will also help to demonstrate the GLA's competence as well as the

financial and technical feasibility of the approach before over time migrating the approach into a separate 'arm's length' entity that is overseen by the GLA (GFI's Option 2b).

The initial planning required to set up a new 'arm's length' entity should start as soon as possible, once the first phase of the facility is operational in 2023 and it is proven and established as a trusted entity.



Next Steps

The establishment of a new London climate finance facility is a complex undertaking, requiring a high level of consultation and a multi-faceted action plan, but one that can be successfully executed by following a step-by-step process as set out here.

Based on current staffing and a sense of expediency to mobilise capital, the GFI strongly urges the GLA to adopt the two-staged recommended approach to establishing the facility, initially managing capital flows internally, followed by the establishment of an arm's length facility in line with investor expectations. It should be noted that while not all finance facilities have followed these steps, those that have deviated, by for example failing to involve external stakeholders, have taken longer to launch and spent more money in the process of establishing it. The GLA has the opportunity to learn from this and accelerate successful scaled delivery of its climate investment ambitions.

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