The Lab
Global Innovation Lab for Climate Finance

Climate Development and Finance Facility

Phase 2 Analysis Summary

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GOAL —
To promote development and finance of climate mitigation projects

CURRENT STAGE —
Design

SECTOR —
Renewable energy; energy efficiency; forestry; agriculture and transportation

PRIVATE FINANCE TARGETS —
Private sector project developers; infrastructure equity and debt investors

GEOGRAPHY —
For pilot phase: Up to 10 projects from lower middle-income and low income countries
In the future: lower middle-income and low income countries

The Lab is a global initiative that supports the identification and piloting of cutting edge climate finance instruments.

It aims to drive billions of dollars of private investment in developing countries.

Acknowledgements

Information included in this report is based on high-level preliminary analysis, subject to changes based on the more in-depth analysis that would be performed during Phase 3 of The Lab assessment, provided Lab Advisors select this instrument.

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SUMMARY

In recent years, more developing countries have established supportive regulatory frameworks for private investment in infrastructure. However, project finance remains scarce and requires multiple providers.

The Climate Development and Finance Facility (CDFF) proposed by FMO will target low and lower-middle income countries where project finance is limited, costly, and time-consuming. By combining several innovative investment facilities into one, the CDFF helps early-stage climate mitigation projects achieve bankability and also provides a cradle-to-grave public-private financing solution.

The CDFF includes: A Development Facility (DF) that will reduce development times and improve bankability for identified projects; A Construction Finance Facility (CFF), which will provide one-cheque equity/mezzanine finance to get projects operational; and after an appropriate time, a Re-financing Facility (RFF) to take up to 50% of re-financed long-term and low risk debt. The buy-out of projects from the DF and CFF would be recycled to help finance more projects.

The CDFF is unique in that it both a) targets project origination and complexity of project finance in climate-relevant sectors; and b) provides different financing windows to overcome private investor hurdles at construction and operation.

The proponent of the CDFF has carried out conceptual modeling for the Facility, begun to identify potential projects, and engaged a wide-range of stakeholders. Key challenges will include managing the different moving parts of the facility, managing country implementation risks, and attracting both public and private sector capital into the facility. The main obstacles to operationalizing the facility are the finalization of governance arrangements and provision of donor capital for the DF and CFF.

If the Facility is funded and implemented out to 2020, and covers the financing and re-financing of 10 successful projects, it would mobilize USD 2 - 2.2 billion in private finance. If the Facility achieves further scale beyond this initial stage, it could see an estimated market of $155 billion in clean energy alone between now and 2030.

INSTRUMENT DESCRIPTION

The Climate Development & Finance Facility helps make projects more viable from development through bankability and re-financing. It combines fast-track development with a cradle-to-grave public-private financing solution.

The Climate Development & Finance Facility (CDFF) proposed by the Netherlands Development Finance Company FMO, aims to make more climate projects in low and lower middle income countries bankable for both public and private funding. Originally, the proposal described two connected, but separate facilities for these purposes. In response to expert and investor feedback during the Phase Two analysis, the original two facilities have been split into three facilities: One that targets development, one for construction, and one that targets re-financing.

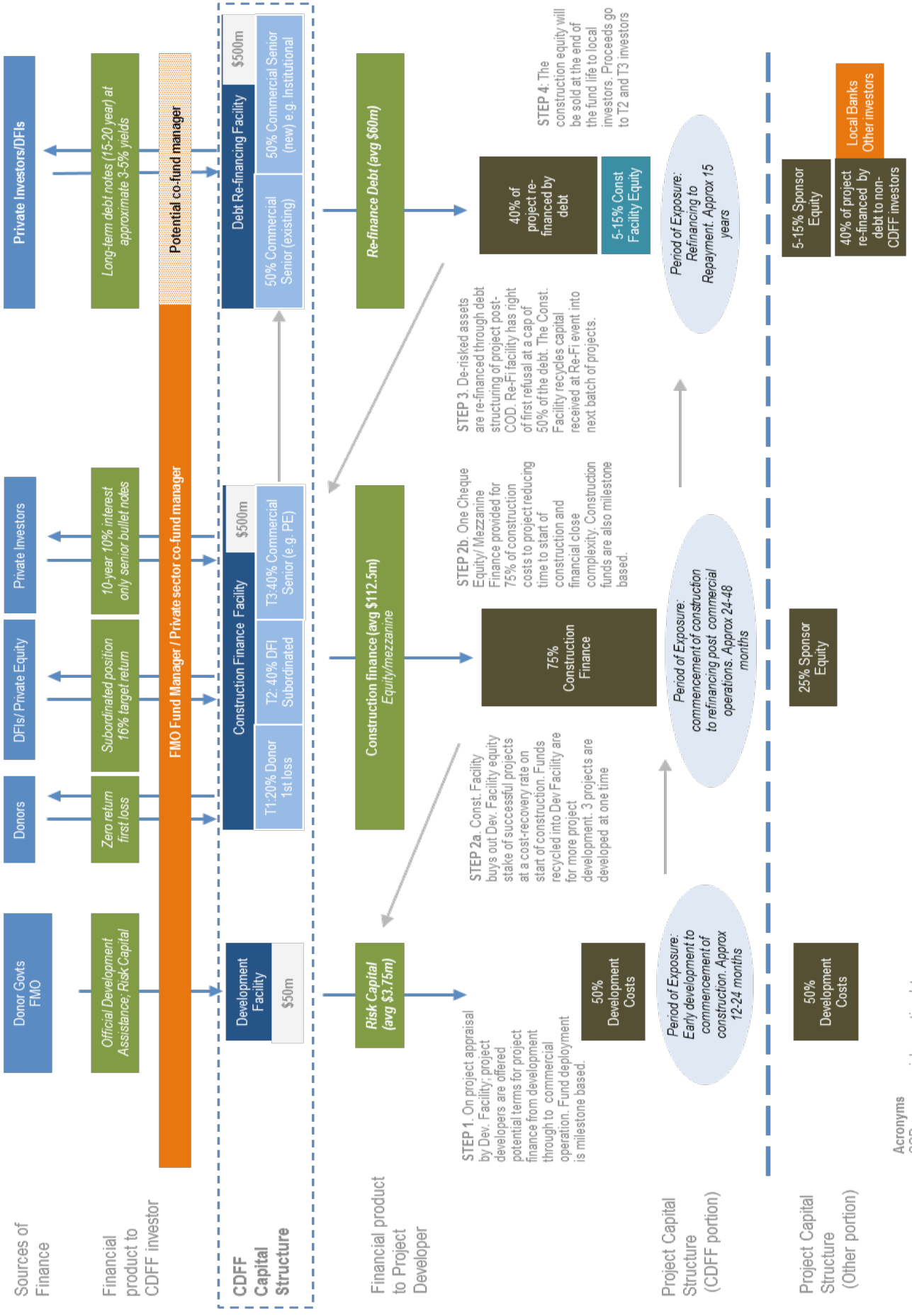
A detailed overview of the CDFF is provided in the Figure 1 flowchart and consists of three stages:

1. **A Development Facility (DF)** funded by non-repayable donor contributions would finance up to 50% of development costs for projects by private sector developers. Its specific aim would be to improve bankability of projects from an early stage. The capital used would be converted to equity stakes for successful projects that would in turn be bought out by the construction finance facility at commercial rates. It would be an evergreen facility, recycling the returns made from the construction finance facility buy-outs to fund the development of subsequent new projects.

2. **A Construction Finance Facility (CFF)** would provide one-cheque equity/mezzanine finance of up to 75% of investment costs, again on commercial terms. Because such a facility would reduce both complexity and development time with fewer financiers for project developers to negotiate with, it may also reduce the overall cost of financing and project development. The facility would be funded by three different tiers representing different risk/return positions:

   - A Tier 1 zero-return, permanent 20% donor tranche to cover potential losses
   - A Tier 2 high-return, subordinated 40% tranche from development finance institutions (DFIs) (approx. 16% shares) and potential private equity/ commercial investors
   - A Tier 3 medium-return, senior tranche taken up by commercial investors comfortable with construction risks (approx. 10 year 10% notes)

Figure 1: Overview of the Climate Development and Finance Facility



3. **A Re-financing Facility (RFF)** would have right of first refusal on up to 50% of the long-term refinanced debt of de-risked projects after they enter commercial operation. The price for re-financing would be set by the other 50% of external investors and local banks. The RFF would consist of investors seeking long-term de-risked infrastructure debt. This may be institutional investors but also investors who may participate in the CFF as well.

While this set of facilities mainly targets private sector project developers and companies to help originate deal flow, there are a number of other stakeholders involved in its implementation.

STAKEHOLDERS

- **Donors** have a key role to play in the start-up of the facility through providing concessional capital to the DF and CFF. Beyond this, the role of donors would be minimal as successful financing of projects would feed back into the development capital available to the DF and construction capital available to the CFF.
- **Development Finance Institutions (DFIs)** participate directly in the facility through taking subordinated positions in the CFF. It is also expected that some DFIs may wish to hold a longer-term stake in the project and would therefore re-finance their indirect positions in the projects post-construction through the RFF, alongside private investors. Aside from financing, DFIs may assist the fund manager, if necessary, by providing technical expertise to specific projects under development and/or by reaching out to potential long-term private investors in marketing the facility.
- **Local governments** also have a key role in providing the enabling environment for projects upstream of development and as power off-takers or partners in the operation of projects downstream.
- **Private stakeholders:** The key beneficiary of the facility will be private sector developers, particularly independent power producers (IPPs) in the power sector, as well as companies operating in energy efficiency, forestry, transportation and water sectors. These developers will be predominantly local players who lack strong balance sheets as opposed to international peers.

On the financing side, the facility seeks to attract two different investor classes:

- Investors seeking private equity-type returns who are willing to adopt diversified construction risks
- Investors seeking fixed-income-type returns over a longer tenor on proven and operational assets

TARGET COUNTRIES

The facility targets projects in low and lower middle-income countries. To attract more risk-averse commercial investors, projects from upper middle-income countries may also be considered to provide greater risk diversification, however lower income countries will be the major focus of the facility. The facility will not place any arbitrary limit on eligible countries in order to maximize the potential of identifying and financing successful projects during the pilot phase and beyond.

ROLE OF THE LAB

As an early-stage concept, the CDFF has benefited from analysis and peer review provided by the Lab advisors. The Lab process may also identify key requirements for other DFIs and donors, to facilitate their participation in the facility and the establishment of an initial pilot fund in 2015 (which is already under preparation). If selected, analysis in Phase 3 of The Lab would allow specific investor propositions to donors, DFIs, and private investors in the CFF and RFF respectively, to be elaborated and refined based on feedback from The Lab. Furthermore, the collaborative environment facilitated by The Lab ensures that interested parties from each of these groups are well-informed and up-to-speed on the timely implementation of a pilot.

CONTEXT

In recent years, more developing countries have established supportive policy and regulatory frameworks for private participation in infrastructure sectors. Project finance, however, remains scarce and requires multiple providers. The instrument will operate in markets that have some policy and regulatory support, but where project finance remains limited, costly, and time-consuming.

The CDFF would aim to develop and finance 10 climate mitigation projects, located in various markets with some policy and regulatory support, but where project finance remains limited, costly, and time-consuming.

Policy environments directly relate to project bankability, and for this reason, supportive policy environments are a precursor to the facility's intervention in a country, across a potentially wide range of sectors. In recent years more developing countries have established supportive policy and regulatory frameworks for private participation in infrastructure sectors. For example, taking the renewable energy sector as a primary focus, there are 26 low and lower middle-income countries that have both Independent Power Producers (IPPs) and renewable energy targets or feed-in tariffs. Extending this analysis to upper middle-income countries adds another 20 to the pool of eligible countries where the CDFF

may support renewable energy projects.[1] Similarly, in the energy efficiency, transportation, and water infrastructure sectors, the eligible markets in which the CDFF may operate are limited by market distorting subsidies and regulatory frameworks that are underdeveloped for facilitating private investment (Johnstone 2014, IMF 2013). For forestry projects, public ownership of lands limits private sector involvement, and, even where private ownership is permitted, difficulty securing reliable and profitable cash flows is a key barrier to investment (AGF 2012).

With or without supportive regulatory and policy frameworks, private sector project developers would still require access to start-up funds and equity to facilitate early stage project origination. If start-up funds and equity are not readily available in the host country, they may be sourced through international sources of capital, particularly if the project developer is an international company. In reaching financial close and beginning construction, projects will also generally benefit from debt financing from local and international finance institutions that are familiar with the country and sectoral risks related to the project and can price them accordingly (Zadek & Flynn. 2013). Such sources are scarce and require complex negotiations with a number of investors with different preferences in terms of cost of capital and tenor. The nature of financing may also face increasing complexity when the project represents a first-of-its-kind demonstration of a technology in the country. For new technologies, local banks may face difficulty in pricing risk at construction while prolonged development times can make projects with large or proven technologies unviable. These issues escalate exponentially for larger projects (>$100m).

INNOVATION AND BARRIER REMOVAL

By offering a pipeline of support that spans project origination and project refinancing, the CDFF has unique capacity to overcome private investor hurdles at construction and operation and to support a growing pipeline of climate relevant projects.

1 Derived from filtering countries with RE policy targets, feed-in tariffs, or tendering; the presence of IPPs, and political risk scores <7 for lower middle-income and <6 for upper middle-income. REN21 2014; PLATTS 2014; OECD 2014b. Low-income countries: Bangladesh, Ethiopia, Kenya, Madagascar, Mali, Nepal, Rwanda, Tajikistan, Tanzania, Uganda; Zimbabwe; Lower middle-income countries: Armenia, Cape Verde, El Salvador, Ghana, Guatemala, Honduras, India, Indonesia, Mongolia, Morocco, Nigeria, Philippines, Senegal, Sri Lanka, Vietnam; Upper middle-income countries: Azerbaijan, Brazil, Bulgaria, China, Colombia, Costa Rica, Dominican Republic, Jordan, Kazakhstan, Macedonia, Malaysia, Mauritius, Mexico, Panama, Peru, Romania, South Africa, Thailand, Tunisia, Turkey.

INSTRUMENT INNOVATION

Compared with existing instruments[2] in developing countries that focus on either project development or project financing the CDFF offers a highly innovative solution that supports a growing project pipeline through its financing lifecycle. While the provision of development support and financing is not particularly new, whether though public or private sector managed funds, most instruments targeting low or lower middle-income countries focus on developing local banks first and foremost and interact with project developers too late in the development chain to make a significant impact. No facilities prioritize both early-stage development to project developers and a financing pathway from construction through to re-financing together under one continuous fund manager. Furthermore, few facilities have specifically targeted reducing the time and complexity of financing projects to produce deal flow for private investors. Finally, while concessional capital provision through soft loans or specialized risk mitigation through guarantees are more common, the ability to offer one-cheque equity/mezzanine finance for construction is a distinct innovation that other funds are not able to provide. This innovation creates cost-effectiveness for project finance between construction and operation (Kundi 2014, Aldwych 2014).

Based on the context and the type of private finance targeted, we have identified a set of barriers. Below we outline which barriers the instrument addresses and which are beyond its scope.

BARRIERS ADDRESSED

The barriers directly addressed by the CDFF include:

Lack of timely access to capital for project developers. A key part of the success or failure of climate finance funds lies in the ability of the fund manager to deploy capital within the required timeframe (IFC 2014). The facility addresses this barrier by simplifying negotiations with multiple capital providers. By providing readily available financing at terms appropriate for the specific project stages from development through to construction and operation, proponents estimate that CDFF may remove between one to two years from development timeframes. (FMO 2014, Kundi 2014, Rouse 2014).

Inadequate capital arrangements from commercial finance institutions or equity providers for construction finance and asset operation. In low- and lower-middle income countries, typical infrastructure finance terms are set at five to seven years tenor with high rates of return irrespective of whether the capital is equity or debt finance (OECD 2014a, Preqin 2014). This relatively high cost of finance prices many renewable energy projects out of the market. On the other hand, in countries where concessional financing or risk mitigation (e.g. political risk

2 These include Global Climate Partnership Fund (GCPF), Global Energy Efficiency and Renewable Energy Fund (GEEREF), the Emerging Africa Infrastructure Fund (EAIF), the Africa Infrastructure Investment Fund 2 (AIIF2), the Private Infrastructure Development Group (DevCo and GuarantCo), the Philippine Investment Alliance for Infrastructure (PINAI) and the Pan African Infrastructure Development Fund (PAIDF).

insurance) arrangements are in place, more affordable,12-15 year loans are often available. This dynamic,highlights the importance of DFIs in helping to unlock project finance. However, banks are often limited to taking on only 20-25% exposure to a specific project, a dynamic which can introduce other complexity and delays in project development, particularly in large projects where up to 8-10 different financiers may then be needed (Aldwych 2014, Kundi 2014).

The facility may overcome the construction risk gap irrespective of the presence of political risk insurance due to provision of equity/mezzanine construction capital of up to 75% of the project costs. This removes the need for high debt costs during construction and the provision of debt service reserve accounts (DSRA), often required by banks. Furthermore, by investing on a commercial basis, the facility can use donor funds to lower overall transaction costs without distorting the commercial project finance market for future growth which is a key lesson for harmonizing concessional and co-financing (IFC 2014).

A lack of a deal flow pipeline for private investors and DFIs. Most investors in developing countries see only one in every four projects reach financial close, with a success rate of 25-33%. However, when fund managers are able to engage early in the process, these success rates can jump to 80%. (Kundi 2014). By its design, the CDFF allows fund managers to engage early, addressing this barrier.

Lack of suitable investment products for institutional investors and DFIs. Many existing infrastructure investment instruments in developing countries attract solely investment bank capital or local institutional investors due to their familiarity with country risks (Rouse 2014, OECD 2014a). This instrument has the capacity to meet the risk appetite for unlisted or private equity funds in the CFF and institutional senior debt funds, including foreign investors, in the RFF. Even should projects default during operations, the recovery rate for investors is typically at 80%, an increase from 60% at construction (Moody's 2014). This lower risk can be reflected in the terms offered to longer-term lower risk investors.

Both the CFF and the RFF would be at an appropriate size of $500m – based on similar funds – to attract mainstream investors and offer a diversified pool of successfully closed projects to manage risks (OECD 2014a; GCPF 2014, Nelson and Pierpont 2013). The need for investors to conduct their own in-house due diligence will be reduced due to the involvement of FMO as recognized and experienced fund manager with experience managing country risks and commercial projects.

Knowledge & skills barriers. These barriers are directly addressed through the development facility, which will provide project developers with resources that may overcome knowledge and capacity gaps and expedite project development before financial close due to the presence of experienced co-project developers.

The barriers indirectly addressed or mitigated through the instrument include:

Lack of skills and competencies in local finance providers. The unfamiliarity and inability to price risk on new projects and technologies is a key barrier, particularly in small countries. The Facility may help overcome this barrier by making projects bankable before they approach other local financial institutions, which may in turn allow local finance providers to invest in and learn about new technologies without major risk exposure.

Policy and regulatory barriers. In any given country, project developers and investors may spend considerable time helping regulators develop strong legal frameworks, or (at a minimum), project developers may need to deal with weak legal frameworks to facilitate a bankable project. This barrier is particularly acute when political risks of the host country are high and completing projects within election lifecycles are important. The high costs of capital engendered by these perceived risks may result in high costs of policy support, for example in settling feed-in tariffs. By reducing the project development costs, the facility reduces the exposure to policy risks and may indirectly lower the cost of climate and energy policy implementation.

Administrative and institutional barriers. Delays in permitting, unclear rules, and a myriad of bureaucratic hurdles across different departments impose costs on project development, and these barriers are prevalent in developing countries where project development procedures are not commonplace. Demonstrating the quick deployment of capital and climate-relevant projects in the country may help policy makers identify better permitting procedures and adjust regulations that prolong development timeframes.

BARRIERS NOT ADDRESSED

The barriers not addressed through the instrument include:

Infrastructure, offtake, and technology risks. The facility is not designed to address a weak financial position of public off-takers/clients who ultimately make projects viable. Projects that rely on local supply chains for construction, operation and maintenance, as well as local transportation and grid infrastructure improvements may face delays. However, this risk may be mitigated by obtaining political risk insurance that pays out in case bills are not settled by the national utility company. Finally, the facility cannot remedy any technology performance risks.

Developing country perceived political risks. A country's overall stability and level of political risk is one of the eligibility filters mandated by international investors even before analyzing the merit of an individual investment. Of the 26 lower income countries identified with renewable energy policy regimes and Independent Power Producer participation, OECD data shows 18 are at the higher end of country risk scores (eight countries score seven, and 10 countries score six on a scale from zero to eight - OCED, 2014).

Lack of investor capability either due to limits on geographic allocations of capital or unfamiliarity with sectors and specific country risks. One barrier limiting investment flows into climate mitigation projects in developing countries is a lack of internal capacity among investors. Many institutional investors' in-house teams may be too small to justify building a dedicated emerging market infrastructure team. Some institutional investors could also face real liquidity and credit risk limitations in the management of funds that would negate allocation to low and lower middle-income countries (Nelson and Pierpont 2013, OECD 2014a). As an investment proposition, the facility allows investors to bypass this barrier at an asset level, but at the fund level, investors may still be constrained by geographic mandates.

IMPLEMENTATION AND RELATED CHALLENGES

The proponent has begun to identify potential projects for a pilot facility and to consult with a wide-range of stakeholders in the financial community and developers in target regions. Going forward, key challenges will include managing the different moving parts of the instrument, managing country implementation risks, and attracting private sector capital into the facility.

The implementation of the CDFF is characterized by a few a factors.

The timeframe to begin a pilot may be relatively prompt. The proponent has undertaken preparatory work to identify potential projects, therefore the main obstacles to operationalizing the facility are the finalization of governance arrangements and provision of donor capital for the DF and CFF. This is expected to take less than six months, depending on positive feedback from potential donors. According to conceptual modeling developed by the proponents, the DF would finance projects in rounds of three, allowing for a quick take-off. Neither the CFF nor the RFF must close fundraising to be operational, however, both could take from 12-18 months to make their first investment as anchor investors need to be identified and contracted.

The proponent has already established draft terms and characteristics of the facility at the fund and project levels (Annex 1) through preliminary concept cash flow modelling. This includes the position and expected returns for different investors at the fund level and the expectations of project developers at each stage. The proponent has developed a working internal model with scenarios for failure rates and cost recoveries. They have also identified potential conflicts of interest within the organizational set up of the facility, different investor mandates, and options for mitigation.

The proponent has initiated dialogue with potential partner institutions and private sector market participants that may be directly or indirectly involved. Climate mitigation equipment providers and project developers active in the target countries have sent support letters.[3] Through The Lab, DFIs and private investors have helped to refine the facility design, provided best practices, and indicated their potential participation in the facility.

The proponent will be the implementing organization for the pilot facility but is seeking to establish a partnership with a commercial fund manager with relevant track record. The proponent has the experience of providing risk-adjusted commercial finance in target countries to provide investor comfort. Its experience has fed into the design of the facility as project-driven rather than focused on an initial set number of countries. This is in order to maximize chances of success in the pilot by having the choice of the best projects, as indicated by other DFIs. This will help to secure a solid pipeline and bring risk diversification opportunities to investors. For funds without a track record, the quality of the fund manager is a main factor in how potential investors assess risk, and can have a significant downward effect on expected yields (Rouse 2014).

IMPLEMENTATION CHALLENGES

Through a scoping analysis, The Lab has identified key challenges in planning the pilot implementation from a financing, organizational, and target country perspective. Challenges related to financing include:

- **Raising donor funds for the DF and CFF:** The DF requires $50 million and the CFF requires $100 million to be operational. Raising funds is expected to take less than six months, depending on positive feedback from potential donors, including those in The Lab and others. We provide more detail on this challenge in the sections that follow.

- **Keeping development costs low:** Timeframes for project development in developing countries can range from three to five years depending on the size of the project. Typically, development costs are kept to 2-3% of a project value, however, in developing countries where unclear regulatory frameworks, administrative delays, and legal costs are high, timeframes can extend beyond five years and costs may escalate to as high as 10% of project value. These uncertainties contribute to high risk premiums on the project from an early stage, and therefore high costs of capital.

  By design, the facility may help to cap some of these costs. Its focus on bankability in development and removal of the need for multiple financiers at financial close reduces time and complexity. The facility operates

3 Letters of support have been received from Vestas Wind Systems; Group Five Strategic Project Development; Bouygues Construction, Siemens and Aldwych International.

through milestone-based funding to ensure it achieves value for money and cost recovery in the event of delays or failures. The DF would provide buffers beyond the average contribution to each project to allow for more expensive milestones to be achieved as appropriate to that specific project, for example, land purchase or equipment orders before financial close. The proponent has also engaged with and received support from experienced and proven project developers in regions and sectors keen to manage cost escalation.

- **Attracting private investors into the facility:** To-date, few private, international institutional investors have been involved in funds that focus on infrastructure in emerging markets (Rouse 2014). Instead, institutional investors based in local or emerging markets who are more familiar with country risks and therefore more comfortable investing in local infrastructure equity funds are more active in these areas (AIIF 2). Of the estimated $72 billion in assets under management available to infrastructure in 2012, it remains unclear the precise pools of capital that North American and European institutional investors allocated to emerging market infrastructure and to clean energy debt in particular. However, in an investor survey focusing on private infrastructure debt, only 8% of investors expressed preference for emerging markets (Preqin 2014). Furthermore, of the available investment products that target infrastructure, 88% favor equity over debt (OECD 2014a). Existing funds targeting infrastructure did not approach such institutions for private investments, focusing instead on the banking sector for investment (Rouse 2014).[4]

  The facility will be one of the first of its kind in targeting the participation of OECD institutional investors with steady long-dated returns from operational assets in the RFF. The CFF could also offer a gateway for private investors willing to take construction risk alongside DFIs. The tiered-fund structure would allow these investors to retain some upside with relatively lower risk. In addition, the intent to partner with a private sector fund manager will mitigate concerns of the commercial investors that the Facility will be development oriented at the expense of commercial outcomes.

- **Managing currency risks:** As a fund with a diversified source of projects in developing countries that is attempting to attract significant private capital, the facility would need to adequately manage currency risks. The denomination of power purchase agreements in target countries excluding India is predominantly in USD thereby mitigating the need for extensive foreign exchange hedging.

The presence of a unified fund management structure across the facility is a unique selling point but also raises organizational challenges in managing different moving parts and potential conflicts of interest, namely:

- **Pricing of projects through the facility.** Investors in the CFF will not wish to pay above market rates for projects coming through the DF. Similarly, investors in the RFF will seek to maximize long-term yields from projects coming through the CFF, while, at the same time, it is in the CFF's interests to minimize the yield that is passed through.

  The proponent has identified potential solutions for managing this conflict in the design of the governance structure, specifically placing a 'cost recovery' cap on projects from the DF or removing the requirement to recycle funds, thereby ensuring that CFF offers to take on bankable projects are at market or concessional rates. Similarly, the proponent envisages that the RFF would have first right of refusal on up to 50% of the re-financed debt, however the price would be set by what the project developers may obtain in the external market in sourcing investors for the other 50%, thereby removing the internal conflict between the fund managers of the CFF and RFF and allowing developers to receive the best market rates for their projects. Investor appetite for these arrangements will require testing in development of the instrument implementation plan.

- **Meeting mandates on use of concessional funds from donors.** Just as the facility seeks to achieve commercial returns from projects to meet the interests of private investors, it must similarly demonstrate that it can meet the interests of donors in providing grant/concessional finance. Additionally, the facility will need to demonstrate that zero-return, non-repayable donor finance in the DF and CFF is helping to meet a market gap rather than simply providing private investors with an ability to increase returns beyond market rates (IFC 2014).

  Quantifying cost savings based on reduced time and complexity for developing projects in order to prove how concessional finance is meeting a market need is difficult ahead of pilot implementation of the facility. The facility design includes certain safeguards to ensure value for money for donors including the recycling of funds into sourcing new projects and a simple mandate for cost recovery on behalf of the DF. For the CFF, investment returns are limited by market rate setting in the pass-through of projects to the RFF. The use of the donor funds can therefore be demonstrated to be primarily crowding-in private investors.

4 Where one instance, senior notes were proven more popular than shares with a German pension fund investing in a multilateral fund focusing on lending to local banks for clean energy projects although it has been noted that this may not be representative of the appetite for notes across the investor class. (GCPF 2014).

- **Providing a market-rate deal to developers in the transition of projects from the DF to the CFF and RFF:** Project developers may wish to choose other financing sources for construction once bankable or for re-financing once operational. If so, one of the key selling points of the Facility may be discounted if an adequate pipeline of projects is not forthcoming.

  To ensure there is an adequate pipeline, proponents have proposed that developers availing themselves of the development facility might also agree to financing through to the CFF. The option of equity/mezzanine, so long as priced accurately for the construction phase, is likely to be more appealing to developers than high debt costs for construction. As noted above, once the project is operational, the RFF would have a right of first refusal at equal terms to other financing options for up to 50% of the re-financed debt. Nevertheless, these key contractual arrangements between developers, the facility, and investors will need to be clearly articulated.

- **Sourcing adequate, competent and dedicated human resources to assist with co-development:** While the presence of a unified manager of both the development and finance facilities is a unique selling point, it also highlights concerns over adequate provision of technical skills through co-development for a wide range of climate mitigation projects. Generally, climate mitigation sectors that require project origination activities and readily available financing could range from concentrated solar power and geothermal activities to public transportation, forestry plantations, and climate-smart agriculture, all areas that require specialized technical expertise.

  The involvement of external expertise across climate mitigation sectors may offer a solution to this challenge.

Key challenges related to country implementation include:

- **Forecasting political risks associated with project development and overcoming poor regulatory environments and administrative bottlenecks:** A lack of government resources at the administrative level can be a stumbling block to timely project development in developing countries. The proposed facility, through its projects and at the project level, may have to be complemented with a certain amount of technical assistance to government authorities in order to meet the potential needs of this stakeholder group and allow timely project development.

- **Ensuring sustainability and legacy in target countries:** A prerequisite for much donor and development finance is due regard for sustainability of the actions beyond the project lifetime. The facility may have to demonstrate how its interventions are driving a transition to more local and private investment market as well as identifying 'sunset' conditions where it considers public money to be no longer necessary.

PRIVATE FINANCE MOBILIZATION POTENTIAL AND OTHER POSSIBLE IMPACTS

The implementation of a pilot facility out to 2020, covering the financing and re-financing of 10 successful projects in lower income countries would moblize between USD 2 to 2.2 billion. Beyond this initial stage, the scaling up of the instrument would see it play in an estimated market of $155 billion between now and 2030 in clean energy alone.

UNSUBSIDIZED FINANCIAL PERFORMANCE

The instrument operates on commercial terms from the outset and therefore does not provide market distorting subsidies or dependencies. An initial donor injection of $150m is needed to provide:

1. $50m of recyclable risk capital on commercial terms for ten successful projects at an average of $3.75m – this is required to cover investments in unsuccessful project development as well as potential larger funds being used prior to transfer to the CFF e.g. land purchasing, as and when the project specifics require.

2. $100m of zero-return first loss positions in the CFF, which would enable adequate coverage of construction risks in the project and the gearing of senior and subordinated investors at terms that would facilitate cheaper costs of capital for projects at approximately 13% per annum (USD) weighted average cost of capital (WACC).

The instrument tries to strike a balance between the appropriate use of concessional funds as initial capital injection to crowd-in private investors, while providing minimum concessionality to project beneficiaries themselves, fostering the establishment of a purely private finance market.

CATALYTIC POTENTIAL

We estimate that the proposed instrument will directly mobilize $2 to $2.2 billion in private capital for 10 projects from the input of donor funds ($150m) and reduce an estimate 1.7MtCO2.[5] We arrive to this estimate by applying the private finance mobilized in the implementation of the pilot facility covering 10 successful

5 The range of mobilization is a reflection of whether DFI financing in the subordinate 2nd tier of the CFF is considered in the public or private finance account. As investors in the RFF are at a par - whether they be DFIs or private investors they receive the same returns – DFI participation is not considered as 'public finance'. The CFF subordinate tranche may also attract private equity participation and the range of $200m reflects this.

projects out to 2020 as the indicator of catalytic potential. BNEF data indicates a baseline flow of approximately $45bn in 2013 for clean energy in developing countries where data is available.[6] However, there is limited data on whether or not Independent Power Producers develop these projects, whether or not they occur at commercial rates, and whether private institutional investors or family offices are finance sources. Therefore, quantifying the added value of the facility in providing both timely and flexible capital that can crowd-in private investors, against current baseline market conditions is difficult. However, both the instrument flowchart (Figure 1) and Annex 1 provide an in-depth overview of the terms and characteristics the instrument will apply at the fund and project level, enabling an accurate prediction of private finance mobilization.[7]

TRANSFORMATIVE POTENTIAL

We estimate, at a high level, that market potential for the scaled up deployment of this type of instrument is $155 billion in private finance mobilized out to 2030 and 221 MtCO2 abated. The market potential for this type of instrument (which could be implemented by multiple market players beyond the initial 10 successful projects in the pilot fund) is limited only by the projected deployment of private sector climate mitigation projects in the target countries. Based on BNEF (2014a,b,c) clean energy market projections for India, Southeast Asia, Latin America (excl. Brazil) and Sub-Saharan Africa (excl. South Africa), we have applied discount factors for the market share of IPPs and an estimated market share for this instrument of 50%.

OTHER IMPACTS

Alongside the climate mitigation and energy provision impacts inherent to the facility, there are a number of positive and negative indirect impacts. Positive indirect impacts are likely to be socio-economic and include:

- Energy supply, which is a key driver for broad economic growth for developing economies
- Job creation in project development, construction and operation. This will facilitate wider economic co-benefits and sectors in the project supply chain.
- Transfer and build-up of new technologies and knowledge through the DF could lead to a larger pipeline to be developed on a standalone capacity. For new technologies in a given country, it can demonstrate to private investors that such projects have a clear business case.
- Clean energy and water infrastructure provide health co-benefits and meet basic needs of populations, often in rural areas with low access. Urban transportation projects improve general economic growth. Forestry and climate-smart agriculture projects provide sustainable livelihoods for indigenous or ethnic minorities as well as the potential for the development of secondary revenues such as eco-tourism.
- Education of growing populations in low-income or lower middle-income countries may be enhanced by availability of electricity and infrastructure.

Negative indirect impacts from the facility focus on the potential for side-stepping the development of the local finance sector. Local financing institutions may not receive experience in assessing risk and developing know-how from participation in project finance, and promote effective financing beyond the life of the facility, if there is a pure focus on speedy deal flow.

6 Includes India, SE Asia, Latin America excluding Brazil, and Sub-Saharan Africa excluding South Africa

7 Although the RFF replaces capital from the CFF, both inputs are counted as the recycled funds are fed back into financing additional projects.

CONCLUSIONS AND NEXT STEPS

The proposed instrument provides an innovative combination of fast-track project development support with better and more timely capital for private sector climate mitigation projects.

This meets the needs of the following groups:

- Project developers, who would be able to access the cheapest commercial cost of capital due to readily available construction finance and re-financing;
- Policy makers, who would benefit by maximizing the participation of private investors in their country's infrastructure, while indirectly keeping the costs of policy support down by supporting lower investment costs; and, finally,
- Investors who will be able to source available deal flow at appropriate risk/return profiles due to adequate sourcing and diversification by the fund manager.

The target country group of low and lower-middle income countries represent both a significant market and added development value for the instrument as well as an implementation challenge in managing country risks. Countries with high perceived political, regulatory, or counterparty risks are precisely those in which the Facility are most needed. Keeping development costs low, attracting investors, and managing potential internal conflicts of interest within the fund management structure are key challenges. We have identified 26 countries with potentially suitable support regimes for clean energy.

The Facility, by taking a large share of construction finance, can reduce the complexity and delays in project development that emerge from DFI and other investors' limits to individual project exposures.

We estimate a catalytic private finance mobilisation of USD $2 – 2.2 billion through the pilot facility. This is the result of a public finance allocation of USD 150m and 350m when including DFI commercial finance in a second-loss position. Out to 2030, replicating and scaling the instrument has potential to install 113 GW of clean energy valued at USD 155 billion and reduce a potential 221MtCO2.

The proposal is well beyond the concept phase. The proponent has already identified a pipeline of potential projects, conducted concept modelling, and engaged a wide group of stakeholders within and beyond the remit of the Lab. The timeframe to start the Facility ranges from three to six months depending on appropriate support from donors and success in fund raising from commercial investors. With donor tranche (first loss) in the DF and CFF to $150m, the facility can break new ground if it can attract institutional investment from developed countries.

To take off, the instrument will require the following:

- Ready donor capital to initiate start-up and project development;
- A partnership arrangement with other DFIs offering commercial finance;
- Effective governance arrangements across the facility; and
- A strategy to market and attract suitable private investor propositions for the CFF and RFF.

NEXT STEPS

In Phase 3, analysts will assess the remaining instruments in greater detail. The aim is to improve the instrument design, address remaining risks and conflicts, approach interested investors, and show pathways for implementation, followed by actual piloting. The assessment would be for a pilot program of 10 projects in the case of this instrument. Methodology will be based on the San Giorgio Group case study approach, and will include the following:

- Finalization of an implementation plan that includes project identification procedures, governance rules, exiting strategies, etc.;
- Financial modeling that includes the cost-effectiveness of the instrument and viability; and
- Risk assessment that includes underwriting requirements, skills, and competencies.

INDICATOR ASSESSMENT SUMMARY

CRITERIA	INDICATOR	ASSESSMENT	COMMENTS/RATIONALE
Innovative	Addresses: Timely access to capital	High	Development times may be shortened by 1-2 years.
	Addresses: Inadequate capital terms	High	Provides cradle-to-grave financing solution at flexibility for each project/country specifics.
	Addresses: Sourcing suitable investment deal flow	High	Targets investor capital with differing risk appetite for co-developed projects.
	Addresses: Building project development skills	High	Enables future private sector development and track record to take place.
	Addresses: Building local finance competency	Moderate	Promotes understanding but at a late stage of project development.
	Addresses: Reinforcing supportive policy frameworks	Moderate	Potentially reduces overall cost of policy provision but difficult to predict impact.
	Addresses: Administrative delays	Low/Moderate	Provides flexible financing to project developers that ensure timely processing by public sector.
	Addresses: Mitigating performance risks	Low/Moderate	Projects require strong technology and offtake counterparties to ensure viability.
	Addresses: Overcoming lack of investor capability	Moderate	Traditional investor allocation practices may limit North-south flows even at fund level
	Instrument Innovation	High	Unique combination of project origination and financing pathway maximizing private investors participation.
Actionable	Time to implementation	3-6 months for development facility	Start-up may be prompt once cornerstone donors/investors secured with fundraising closed within 12-18 months (CFF) and 24-36 months (RFF)
	Strength of implementation plan	High	Proponents have thought through the facility operations; identified and initiated engagement with key stakeholders, and identified internal preparatory actions.
	Strength of implementing organization	High	Proponents have strong record for implementation. Where challenges exist, it has identified ways partner institutions (e.g. DFIs) or commercial parties (e.g. co-fund manager) may enhance the instrument implementation
	Fit to national policy environment	High	26 low and lower middle-income countries with potentially suitable policy regimes for RE
Catalytic	Private finance mobilized	$2 - $2.2 billion	Assuming average total investment costs of $150m for 10 projects.
	Public finance needed	$150m	In donor capital, zero-return, non-repayable. DFIs will be targeted to take a $200m subordinate position in the CFF at a market risk-adjusted return rate of 16%

CRITERIA	INDICATOR	ASSESSMENT	COMMENTS/RATIONALE
Transformative	Market potential in 2030	$155bn or $11bn/year	The total market potential for clean energy in the target country categories where the instrument would be potentially active is $155bn or $11bn per annum on average, assuming a 34% share for IPPs, and a 50% share for this type of instrument in that market.
	Mitigation impact (potential)	221Mt of CO2e saved	Assumes: 113 GW renewables market in target countries (2015-2030, typical capacity factors from NREL, CO2 emission factors from IEA (non-OECD countries) based on 50% penetration of IPP market.
	Local development impact	Energy supply, jobs, tech transfer, health, new industries	Positive indirect impacts are socio-economic in job creation, technology transfer, and public service needs being met with potential negative impacts in limited development of local financing sector
	Unsubsidized financial performance	Facility offers commercial returns but initial donor capital	Initial donor injection of $150m is needed for recyclable capital flows with the facility offering commercial terms from initiation enabling the establishment of a private finance market.

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